

AIRCRAFT SPRUCE KITS

COZY MARK IV



The Cozy MK IV is a high-performance, four-seat canard aircraft which is comfortable, efficient, and economical to build. It has a range of about 1,000 miles and a top speed of 200 mph. When constructed according to plans and operated within the approval C. G. range, the canard configuration makes it highly resistant to stalls or loss of position control. The MK IV features full dual control and two-axis trim. The composite construction is very strong, resistant to corrosion and fatigue, and offers better protection to the occupants than other types of construction. Aircraft Spruce acquired the Cozy design rights in January 2004 and is now the sole source for Cozy plans and info packs.

- Cozy Mark IV Plans P/N 01-00178.....
- Cozy Mark IV Info Pac P/N 01-00566.....
- Cozy "M" Drawings* P/N 01-00570.....
- Cozy Newsletters on CD P/N 01-00569.....
- Cozy Owners Manual* P/N 01-00565.....
- Cozy Mark IV DVD "Award Winning" P/N 01-00982.....

* Can only be sold to a builder, must provide plans # to order.

FREE INSTRUCTIONAL VIDEO WITH PLANS



Building the Rutan Composites – This step-by-step instructional program features Burt Rutan and Mike Melvill proceeding through the complete foam-epoxy-fiberglass composite construction procedure as used on the VariEze, Long-EZ, Quickie, Q2, Dragonfly, Sea Hawk, and other composite aircraft. Also included is a formation flight by the Long-EZ, Defiant & VariViggen. A must for all composite aircraft builders. 1hr, 36 mins. DVD
P/N 13-04809

SECTION I KITS

| | Part # | Price |
|---------------------|----------|-------|
| Foam Kit..... | 01-01410 | |
| Fiberglass Kit..... | 01-01415 | |
| Wood Kit..... | 01-01420 | |
| Hardware Kit..... | 01-01430 | |
| Metal Kit..... | 01-01425 | |
| Misc. Mats..... | 01-01440 | |
| Tools Kit..... | 01-01435 | |
| Fuel Fittings..... | 01-01431 | |
| Epoxy Kit..... | 01-38201 | |

COZY MATERIALS KITS

| | Part # | Price |
|-----------------|----------|-------|
| Bolts..... | 01-01505 | |
| Screws..... | 01-01510 | |
| Washers..... | 01-01515 | |
| Nuts..... | 01-01520 | |
| Nutplates..... | 01-01525 | |
| Rivets..... | 01-01540 | |
| Fittings..... | 01-01535 | |
| Foam..... | 01-00297 | |
| Expoxy..... | 01-01545 | |
| Metal..... | 01-01530 | |
| Misc..... | 01-01560 | |
| Fiberglass..... | 01-00298 | |

SECTION II KITS

CHAPTER KITS

| Part # | Price | Part # | Price |
|---|----------|--|----------|
| Chapter 4 Fuselage Bulkhead..... | 01-00256 | Chapter 15 Firewall Accessories..... | 01-00272 |
| Chapter 5 Fuselage Sides..... | 01-00257 | Chapter 16 Control System..... | 01-00273 |
| Chapter 6 Fuselage Assy..... | 01-00259 | Chapter 17 Pitch-Roll-Trim..... | 01-00275 |
| Chapter 7 Fuselage Exterior..... | 01-00260 | Chapter 18 Canopy..... | 01-00277 |
| Chapter 8 Headrest, Heatduct, Seatbelt..... | 01-00261 | Chapter 19 Wings & Ailerons..... | 01-00280 |
| Chapter 9 Main Gear-Brake..... | 01-00263 | Chapter 20 Winglets & Rudders..... | 01-00282 |
| Chapter 10 Canard Construction..... | 01-00264 | Chapter 21 Strake-Fuel-Baggage..... | 01-00283 |
| Chapter 11 Elevators..... | 01-00266 | Chapter 22 Electrical..... | 01-00285 |
| Chapter 12 Canard Installation..... | 01-00267 | Chapter 23 Engine-Prop Installation..... | 01-00286 |
| Chapter 13 Nose Gear..... | 01-00268 | Chapter 24 Covers Fairing..... | 01-00291 |
| Chapter 14 Center section Spar..... | 01-00271 | Chapter 25 Finishing..... | 01-00292 |



CHRISTAVIA MK-1/MK-2 & MK-4

Aircraft Spruce & Specialty Co. has acquired the design rights to the popular Christavia MK1, Christavia MK2, and Christavia MK4 homebuilt aircraft from the designer, Ron Mason of Elmwood Aviation in Canada. The Christavia was designed in 1982 as a mission field workhorse. Design requirements were short take-off and landing, small engine (low fuel consumption), low stall speed, good cruise speed and rate of climb, large cabin area, low maintenance and high safety factor. The Christavia is easy to fly, and the large cabin makes long flights very comfortable. Over 1000 sets of the plans have been sold for the MK1 (two place tandem), MK2 (two place side-by-side), and Christavia MK4 (four place). Aircraft Spruce has plans available for these aircraft at \$225 per set as well as an information pack for \$10. Complete materials packages for construction of the aircraft are available from Aircraft Spruce.

Christavia MK-1/MK-2 Info Pack P/N 01-00662 **FREE**

CHRISTAVIA MK-1 KIT PRICE LIST

| | | | | | | |
|--------------------------|----------|-------------|---------------------------|----------|--------------------------|----------|
| MK-1/MK-2 Info Pack..... | 01-00662 | FREE | Spruce Kit for MK-1..... | 01-39810 | MK-1 4130 Sheet Kit..... | 01-39850 |
| MK-1 Plans..... | 01-00663 | | Plywood Kit (MK-1)..... | 01-39820 | MK-1 Hardware Kit..... | 01-39860 |
| MK-2 Supplement..... | 01-00664 | | MK-1 Alum. Sheet Kit..... | 01-39830 | MISC Kit for MK-1..... | 01-39870 |
| MK-2 Plans Complete..... | 01-00692 | | MK-1 4130 Tube Kit..... | 01-39840 | MK-1 Spruce Kit..... | 01-39880 |

CHRISTAVIA MK-4 KIT PRICE LIST

| | | | | | | |
|------------------------|----------|-------------|--------------------------|----------|-------------------------|----------|
| MK-4 Info Pack..... | 01-00683 | FREE | MK-4 Plans..... | 01-00665 | MK-4 4130 Tube Kit..... | 01-00674 |
| MK-4 Misc. Kit..... | 01-00675 | | MK-4 4130 Sheet Kit..... | 01-00676 | MK-4 Plywood Kit..... | 01-00677 |
| MK-4 Aluminum Kit..... | 01-00678 | | MK-4 Hardware Kit..... | 01-00679 | | |

AIRCRAFT SPRUCE KITS

STARDUSTER TOO SA 300



The Starduster Too was built to fill a need for a reasonably sized, 2-place, open sport biplane. Stability is good and the light wing loading makes slow landing and short-field operation outstanding. The main structure of the aircraft is built of 4130 steel tubing and sheet stock and has no machined fitting or other complicated bends. The wings have spruce spars and the ribs are made of 1/4" plywood. Construction of the plane has been kept as simple as possible. The Lycoming O-360 (180 hp or 200 hp) is the best size engine for the aircraft.

Plans P/N 01-00424
Info Pack P/N 01-00596 **FREE**

ACRODUSTER TOO SA 750



This two-place biplane is about 10% smaller than the Starduster Too. It is a very strong machine designed to +/-9 G. It is a high performance machine meant for minimum of 180 and up to 360 horsepower. The roll rate is spectacular with four ailerons and symmetrical wings.

Plans P/N 01-00427
Info Pack P/N 01-00443 **FREE**

STARLET SA 500



A low-horsepower, single-place parasol, this is a fun machine. Easy to build and easy to fly, it is the best of both worlds. Engines in the 65 to 125 HP range work best. Excellent visibility and a pretty design keep your excitement high.

Plans P/N 01-00428
Info Pack P/N 01-00463 **FREE**

V-STAR SA 900



This is an exciting, single place biplane. Rated for +/-6 G, this machine will keep you smiling. With stall speed approaching 35 mph and horsepower in the 75 to 85 range, fun flying is not slowed at the gas pump.

Plans P/N 01-00429
Info Pack P/N 01-00471 **FREE**

STARDUSTER ONE SA 100



This is the single place biplane designed by Lou Stolp back in 1964 that started it all. It as a very easy aircraft to fly, powered by engines in the 125 horsepower range - A fun machine! Constructed with a 4130 steel fuselage, wood spars and ribs, and covered with fabric. The Starduster One can only classified as "classic".

Plans P/N 01-00425
Info Pack P/N 01-00471 **FREE**

STARDUSTER KITS & COMPONENTS

| PART NO | DESCRIPTION | PRICE |
|----------|-------------------------------------|-------|
| 01-00436 | STARDUSTER TOOAILERON FILLETS | |
| 01-00437 | STARDUSTER TOO COCKPIT COWLING | |
| 01-00438 | STARDUSTER TOO SA300 NOSE BOWL | |
| 01-00439 | STARDUSTER TOO TDECK W/ HDREST | |
| 01-00440 | STARDUSTER TOO WHL PNTS 600X6 | |
| 01-00597 | STARDUSTER / ACRODUSTER VIDEO | |
| 01-00978 | STARDUSTER / ACRODUSTER DVD | |
| 01-00485 | STARDUSTER TDECK SA300 & SA750 | |
| 01-00491 | O-235-N2C ENGINE 4 STARDUSTER | |
| 01-00494 | O-320-D1A ENGINE 4 STARDUSTER | |
| 01-00495 | IO-320-D1B ENGINE 4 STARDUSTER | |
| 01-00496 | O-360-A1A ENGINE 4 STARDUSTER | |
| 01-00502 | STARDUSTER AILER FILLET LEFT | |
| 01-00503 | STARDUSTER AILER FILLET RIGHT | |
| 01-00560 | STARDUSTER TOO COBANE STRUTS | |
| 01-00561 | STARDUSTER TOO I STRUTS | |
| 02-00052 | STARDUSTER TOO SA300 SPAR KIT | |
| 02-08200 | STARDUSTER SINGLE PLACE SPAR | |
| 02-08300 | STARDUSTER TOOSPAR KIT | |
| 03-15700 | STARDUSTER TOO 4130 TUBING KIT | |
| 04-00778 | STARDUSTER FORKEND | |
| 04-00780 | STARDUSTER TANK FLOPPERS | |
| 05-01078 | STARDUSTER TOO SA300 CLR WND SH | |
| 05-01079 | STARDUSTER CANOPY CLR 1-PLACE | |
| 05-01081 | STARDUSTER CANOPY CLR 2-PLACE | |
| 05-01084 | STARDUSTER TOO SA300 TAILWHEEL | |
| 05-01086 | STARDUSTER TLWHL CONN. SPRG KT | |
| 05-01087 | STARDUSTER LNDG GEAR MATER. KT | |
| 05-01090 | STARDUSTER TOO HORIZ TAIL ASSY | |
| 05-01091 | STARDUSTER TORQUE TUBE ASSY | |
| 05-01092 | STARDUSTER TOO FUSEL. MAT. KIT | |
| 05-01096 | STARDUSTER TOO MAT. KIT WINGS | |
| 05-01103 | STARDUSTER AILERON HINGE ASSY | |
| 05-01104 | STARDUSTER AILERON DRV HRN ASSY | |
| 05-01112 | STARDUSTER AIRLN SLV STRT HRN | |
| 05-01138 | STARDUSTER TOO SA300 CLR BUBBL | |
| 05-01139 | STARDUSTER TOO SA300 GRAY WND SH | |
| 05-01141 | STARDUSTER TOO SA300 GRN WND SH | |
| 05-01142 | STARDUSTER TOO SA300 GRN BUBL | |
| 05-01143 | STARDUSTER TOO SA300 GRN BUBBL | |
| 05-01193 | STARDUSTER CANOPY GRAY 1-PLACE | |
| 05-01194 | STARDUSTER CANOPY GRN 1-PLACE | |
| 05-01195 | STARDUSTER CANOPY GRAY 2-PLACE | |
| 05-01196 | STARDUSTER CANOPY GRN 2-PLACE | |
| 05-01211 | STARDUSTER TOO TIE ROD SET W/T | |
| 05-19700 | FUEL TANK STARDUSTER I (MAIN) | |
| 05-19710 | FUEL TANK STARDUSTER I -INVERT | |
| 05-19720 | FUEL TANK STARDUSTER I (WING) | |
| 05-19800 | FUEL TANK STARDUSTER II (MAIN) | |
| 05-19810 | FUEL TANK STARDUSTER II INVERT | |
| 05-19820 | FUEL TANK STARDUSTER II (WING TANK) | |
| 06-00173 | STARDUSTER TOO BUNGEE CORD | |
| 06-00174 | STARDUSTER TOO ALUM LNDGNG GR | |
| 06-00177 | STARDUSTER TOO STEEL LNDG GEAR | |
| 06-00179 | STARDUSTER 500X5 WELD-ON AXLE | |
| 06-03935 | STARDUSTER II LANDING GEAR* | |
| 08-00897 | STARDUSTER TOO STD ENG MOUNT | |
| 08-00898 | STARDUSTER TOO SA300 FRWL GALV | |
| 08-00901 | STARDUSTER EXHAUST SYSTEM 6CYL | |
| 08-00966 | STARDUSTER TOO FIREWALL SS | |
| 08-00967 | STARDUSTER TOO FIREWALL GALV | |
| 13-02417 | STARDUSTER TECHNICAL TIPS | |
| 13-02434 | 1 STARDUSTER PIN | |
| 13-02436 | STARDUSTER PATCH SMALL | |
| 13-02437 | STARDUSTER PATCH LARGE | |
| 13-02676 | STARDUSTER DECAL | |
| 01-00468 | SUPERSTARDUSTER BLDG THE GOLD6 | |
| 05-03381 | VITON 75 41 X 2 MM O-RING | |

*Note: This Landing gear is NCNR, may not be cancelled or returned. Lead times are always 6-8 weeks.

ORDER PLANS, COMPLETE MATERIAL KITS AND REQUEST FREE KIT LISTS FOR ALL STARDUSTER AIRCRAFT DIRECT FROM AIRCRAFT SPRUCE.

AIRCRAFT SPRUCE KITS

WITTMAN TAILWIND



Introduced at the first EAA fly-in 1953, Tailwind was designed and built by legendary designer and air racer Steve Wittman. This high performance homebuilt is constructed with a steel tubing fuselage, wood wings, and fabric covering. It offers exceptional cruising speeds and is economical to operate and maintain. Aircraft Spruce acquired the rights to the Tailwind in January 1996 and is currently the exclusive distributor for plans and materials kits. Complete information package and materials list is available.

W-10 SPECIFICATIONS

Length: 19' 6" **Wing Span:** 24' **Wing Area:** 90 Sq. Ft.
Engine: Cont. 85, 90, 100 or 145 HP - Lyc. 108-160 HP
Cruising Speed (Vc): 150 to 190 MPH

Wittman Tailwind Info PK/Kit Price List P/N 01-10003 **FREE**
 Wittman Tailwind Plans P/N 01-10007 *
 Wittman Olds V-8 Eng. Conversion Plans .P/N 01-10002
 Wittman V-Witt Racer Plans P/N 01-10009 *
 Wittman VW Prop Shaft extension P/N 01-10006

TAILWIND / V-WITT KITS

Tailwind 4130 Tube kit P/N 03-15800
 Tailwind Complete Spruce Kit P/N 02-06500
 Tailwind Spruce Spar Kit P/N 02-08500
 Tailwind Landing Gear P/N 06-00139
 Tailwind Tailspring P/N 06-00140
 V-Witt Spar Kit P/N 02-08600

***Ask about prefabricated parts available for the Tailwind**

BABY GREAT LAKES, SUPER BABY LAKES, AND BUDDY BABY LAKES BABY GREAT LAKES MATERIALS REQUIREMENTS

- Kit #1 Spruce and Plywood Kit** P/N 02-03910
 Complete Spruce Kit Only P/N 02-03900
 Spar Kit only P/N 02-06700
- Kit #2 Wing Metals Package** P/N 01-10020
 Includes finished parts requiring machining
- Kit #3A Wing Hardware Kit (Baby Great Lakes)** P/N 01-10030
Kit #3B Wing Hardware Kit (Super & Buddy) P/N 01-10035
- Kit 4130 Steel Tubing and Sheet Kit**
 Baby Great Lakes Kit-4A P/N 03-14300
 Super Baby Lakes Kit-4B P/N 03-14310
 Buddy BabyLakes Kit-4C P/N 03-14320
- Kit #5 Landing Gear/Brakes Kit** P/N 01-10040
Kit #6 Wing Alignment Materials Package **P/N 01-10050**
Kit #7 Fuel Tank and Installation Package P/N 01-10060
Kit #7A Fuel tank Installation Kit P/N 01-10070
Kit #8 Flying Controls Materials Package P/N 01-10080
Kit #9 Fairings, Firewall, Instrument & Fuselage Panels w/Hardware P/N 01-10090
- Kit #10 Poly - Fiber Materials Package** P/N 01-10095
 Baby Great Lakes Top Nose Cowl P/N 05-02883
 Baby Great Lakes Bottom Nose Cowl P/N 05-02884
 Seat for Buddy Great Lakes P/N 05-02885
 Baby Great Lakes Fuel Tank (Standard 10 Gal.) P/N 05-03058
 Baby Great Lakes Feul Tank(3" Longer 11 Gal.) P/N 05-03059

ASK ABOUT THE MANY PRE-FABRICATED PARTS AVAILABLE FOR BABY GREAT LAKES AIRCRAFT.



The Baby Great Lakes (one place) and Buddy Great Lakes (two place) aircraft are well proven designs which are easy to construct and fly, provide classic good looks, and are aerobatic. Construction is of wood and steel tubing and plans are well presented for the first time builder. Aircraft Spruce & Specialty Company acquired all rights to these designs in May, 1996 and now offers info packs, plans, raw materials kits, and pre-fabricated kits for these fine aircraft. Contact Aircraft Spruce for information on info packs and plans.

Baby Great Lakes Info Packs P/N 01-10013 **FREE**
 Plans for Baby Great Lakes P/N 01-10010
 Plans for Super Baby Lakes P/N 01-10011
 Plans for Buddy Baby Lakes P/N 01-10012

ACROLITE



Aircraft Spruce & Specialty is the exclusive supplier of plans and materials packages for Ron Wilson's aerobatic aircraft design, the single seat Acrolite. Complete construction material packages, 16 in total, for the Acrolite can be purchased for under \$10,000.

The Rotax 912 engine is used in the prototype. The Acrolite can also be built with the Rotax 532-618.

Acrolites are designed to be a quick, easy build for beginners. The biplane cruises at 110 mph, has a range of 250 miles, takes off and lands in 500 feet and has a service ceiling of 12,000 feet. Empty weight is 495 lbs. and gross is 750. The airplane stands six feet tall, is 17' long and has 133 square feet of wing area. It is designed for sportsman aerobatics.

The Acrolite was chosen as one of two finalists in the Scratchbuild Design Contest which was sponsored by Aircraft Spruce & Specialty.

ACROLITE KITS

Info Pack, P/N 01-20005 **FREE**
 Plans, P/N 01-20090
Plans Kit includes Plans, Builders Manual, Maintenance Manual and Photo Set.

MATERIALS REQUIREMENTS

- Kit #1 Aluminum Tube Kit**, P/N 01-20010
Kit #2 4130 Tube Kit, P/N 01-20015
Kit #3 Aluminum Sheet and Bar Kit, P/N 01-20020
Kit #4 4130 Sheet and Bar Kit, P/N 01-20025
Kit #5 Aluminum Wing Kit, P/N 01-20030
Kit #6 Misc. Wood Kit, P/N 01-20035
Kit #7 Wood Wing Kit (Optional), P/N 01-20040
Kit #8 Fastener kit, P/N 01-20045
Kit #9 Control System Kit, P/N 01-20050
Kit #10 Fuel System Kit, P/N 01-20055
Kit #11 Misc Hardware Kit, P/N 01-20060
Kit #12 Wheels and Brakes, P/N 01-20065
Kit #13 Misc. Accessories Kit, P/N 01-20070
Kit #14 Basic Instruments Kit, P/N 01-20075
Kit #15 Covering Kit, P/N 01-20080
Kit #16 Cowl Kit, P/N 01-20085

AIRCRAFT KITS

VAN'S AIRCRAFT (RV)

Van's Aircraft, Inc. has been a leading supplier of aircraft kits since 1973. Since their first offering RV Aircraft have become known their wide performance envelope and sporty handling qualities. While the RVs are excellent cross-country airplanes, they are not simply "go-fast" machines. They are also aerobatic (except RV-9A) and have outstanding low speed characteristics and short-field capabilities; a rare combination. First and foremost, though, they are fun to fly. Their controls are light, responsive, and beautifully harmonized.

RVs are aluminum monocoque structures. The aluminum skins are supported by an internal structure of ribs, spars & bulkheads, just like production light aircraft. Conventional "AN" aircraft rivets are used to fabricate the aluminum structure. The cowl, wing tips, wheel fairings and similar non-structural fairing parts are made of fiberglass.

The latest design, the RV-9/9A, is designed to be an easy-to-fly, economical, versatile sportplane. It was designed for day-to-day flying, local trips and short cross-countries, with only occasional long flights. The performance it provides is useable every day. It's so easy to fly that low time pilots can make a quick and painless transition. Its short field performance permits it to easily use all the "fun" airports around. When it's time for that long cross-country, the RV-9/9A gets you there & back almost as quickly as many of the "go-fast" designs.

Van's is now making steady progress with a four-place airplane they've designated the RV-10. They hope to fly in the spring of 2003, and the best estimate for the aircraft to hit the market is late 2003.

RV-9A

Empty Weight 1,028-1,075 lbs.
 Top Speed 170-194 mph at gross
 Gross Weight 1600-1750 lbs.
 Stall Speed 44 mph at gross
 Engine 118-160hp
 Take Off Distance 350-250 ft.



Aircraft Spruce is prime supplier of components used in RV aircraft and sold by Van's Aircraft.

For more info on the entire line of RV aircraft contact:

VAN'S AIRCRAFT INC.

14401 NE Kell Rd • Aurora, OR 97002
 Phone: (503) 678-6545 • Fax: (503) 678-6560
 info@vansaircraft.com • www.vansaircraft.com

WITTMAN BUTTERCUP



We all want to fly fast and land slow. Sylvester "Steve" Wittman solved the problem. Wittman built two types of airplanes: Racing machines and Travel machines. The ancestors of these two blood lines were Chief Oshkosh and Buttercup. The Buttercup was built as a utility hauler, and there was only one made - in 1937. He flew it all over the western hemisphere, from Alaska to Bermuda, Florida to Oregon. The Buttercup almost made it into production (cancelled due to WWII) coming to the interest of Fairchild as a four-place project, called the 'Big X'. One plane was built for them by "Witt" - a 4-place, 6 cylinder, 130 HP Franklin powered prototype.

The real genius of the Buttercup design is Wittman's claim of 38 - 40 mph (indicated) slow-flight speed and a near 150 mph top speed, and all on 85 hp! The high speed is vintage Wittman, the low speed is due to an ingenious flap-coupled, retracting lead edge design (seen in today's airliners). Earl Luce of LuceAir, Inc. has 'revived' the Buttercup, featured in the April, 2003 issue of Sport Aviation. Kits and fabricated assemblies for the Buttercup are available from Aircraft Spruce. For info and plans contact: **LuceAir • 35 Beverly Dr. • Brockport, NY 14420**

Ph: (585) 637-5768 • Fax: (585) 387-8920
 www.luceair.com • e-mail: luceair@att.net

| | |
|---|--------------------|
| Buttercup Retractable Lead Edge Kit | P/N 01-00474 |
| Buttercup Fuselage Sides Kit | P/N 01-00475 |
| Buttercup Fuselage Completion Kit | P/N 01-00476 |
| Eppenage Vert-Hort Stabilizer Kit | P/N 01-00477 |
| Buttercup Wing Wood Kit | P/N 01-00478 |
| Buttercup Wing Metal Kit | P/N 01-00479 |
| Buttercup Flaps & Ailerons Kit | P/N 01-00480 |
| Buttercup Lift Strut Kit | P/N 01-01055 |
| Buttercup Engine Mount-Land Gear | P/N 01-00482 |
| Buttercup Controls & Finishing | P/N 01-00483 |
| Buttercup Covering Kit | P/N 01-00571 |

LANCAIR AIRCRAFT



Founded in 1984 by Lance Neibauer, Lancair has become one of the most successful kit manufacturers in the world. The company manufactures a number of kit aircraft including the Lancair ES and Super ES, and the world's fastest piston-driven aircraft, the Lancair IV and IV-P. Lancair aircraft hold several world speed records as well as championships in most major cross-country air races.

In July of 1999 The Legacy 2000 was introduced as the successor to the Lancair 320/360. The Legacy provides additional passenger and luggage space as well as increased performance over the previous Lancair 360. Using a 310 hp Continental IO-550-N, the Legacy achieves cruise speeds in excess of 276 mph at 8000 ft.

In Sept of 2001 Lancair International flew their turbine engine powered Lancair IV-P. Lancair has now introduced their newest version of turbine power: The Lancair Sentry. This Walter powered Lancair IV is a military-style tandem seat aircraft with left-side throttle controls, and a rear hinge canopy.

"The airplane performs very similar to the existing Propjet model, achieving a cruise speed of almost 400 mph!" Not only does this new Lancair kit yield blood-boiling speeds similar to the IV-P Propjet model, it also offers increased yaw stability and excellent visibility out of a newly designed rear hinge canopy.

For further information on all Lancair aircraft contact:

LANCAIR INTERNATIONAL
 2244 Airport Way, Redmond, OR 97756
 Phone: (541) 923-2244.
 www.lancair.com

ZENITH



The ZODIAC XL is the newest model in the popular all-metal ZODIAC kit aircraft series from aeronautical engineer Chris Heintz, offering more performance and many new standard features. The all-metal, two-seat design features a new wing and canopy design, as well as many additional new features. The new XL prototype model is powered by the six cylinder Jabiru 3300, a new and affordable 110-hp engine from Australia. Lycoming O-235 (116-hp) and Rotax 912S (100-hp) engines have also been installed and flown in the prototype.

The ZODIAC XL is the perfect project for the first-time builder and the demanding sport pilot, bridging the gap between performance flying and affordable costs: Simple and quick to build — easy and fun to fly.

The new ZODIAC XL has been developed with the FAA's proposed Sport Pilot / Light-Sport Aircraft category in mind, and offers maximum performance and capability possible under the new proposed FAA category.

For detailed info on all Zenair™ kit aircraft designs contact:

Zenith Aircraft Company
 Mexico Memorial Airport, PO Box 650
 Mexico, Missouri, 65265-0650 USA.
 Ph: (573) 581-9000 (Mon-Fri, 8-5 Central), Fax: 573-581-0011
 info@zenithair.com • www.zenithair.com

AIRCRAFT KITS

THE DAISY MAE



The plans give detailed instructions for constructing The Daisy Mae Aircraft. Materials kit list is available from Aircraft Spruce. Over 200 pages of solid, easy to understand information on Design and Construction of the author's own personal biplane.

Easier to understand than A/C Design 101 and cleverly encased around the author's dry wit & humor. Plenty of illustrations. One EAA chapter president said: "I've had a chance to get into the guts of the book, WOW! This thing is a treasure for anyone who even has the slightest inkling of designing or building. This thing is like the Rosetta Stone . . . funny, true & Informative."



THE MAKING OF THE DAISY MAE BOOK -

Plans for the Daisy Mae P/N 01-01003.....

P/N 13-04086.....

PAZMANY PL-9 STORK



Pazmany PL-2

Pazmany PL-4a Part of the LSA class.



The original German Luftwaffe Fieseler F-156 Storch was an outstanding WWII airplane, designed to take off and land in extremely short distances. The Storch had a take off ground roll of 131 feet and a landing roll of 36 feet with 13 miles per hour head wind.

The Pazmany PL-9 Stork is a 3/4 replica. With the same flying and handling characteristics as the original German Aircraft. The PL-9 Stork is a professionally designed STOL aircraft. It has a well proven aircraft configuration designed for a number of functions such as fish spotting, forest fire detection, farm work, missionary work etc. It features a welded chrome alloy steel tube fuselage and aluminum sheet metal/fabric covered wings and empennage. The PL-9 Stork has a cruise speed of 104mph with a standard Lyc.O-320/150 hp engine. Aircraft Spruce is a major supplier of materials for the PL-9 Stork.

For more information, info pack and plans, contact:

Pazmany Aircraft Corp.

P.O. Box 80051 • San Diego, CA 92138
Phone: (619) 224-7330 • Fax: (619) 224-7358
info@pazmany.com • www.pazmany.com

PAZMANY PLANS

PL-9 Plans P/N 13-01505
PL-2 Plans P/N 13-01506
PL-2 Homebuilding Profile..... P/N 13-01509
PL-4A Plans..... P/N 13-01507
(Now part of the LSA class)



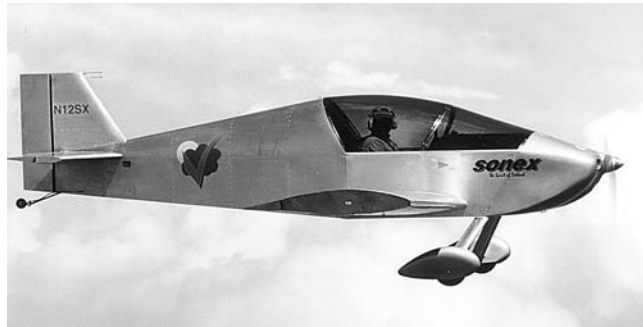
LONG-EZ

The Long-EZ designed by Burt Rutan, is a homebuilt aircraft derived from the VariEze. Changes from the VariEze include a larger main wing with modified Eppler 1230 airfoil and less sweep, larger strakes containing more

fuel and baggage storage, slightly wider cabin, and the ability to use a Lycoming 108 hp engine with no nose ballast. The aircraft is designed for fuel-efficient long-range flight and can fly for over ten hours and up to 1,600 miles (2,500 kilometers) on 52 gallons (200 liters) of fuel. The pilot sits in a semi-reclined seat and controls the Long-EZ by means of a side-stick controller situated on the right-hand console. In addition to having an airbrake on the underside, the twin tail's wing-tip rudders can be deflected outwards to act as auxiliary airbrakes. The aircraft will not stall in the manner of a conventional aircraft since, if the Long-EZ reaches too low a speed, the front (canard) wing will stall and lower the aircraft nose until speed is regained.

Kit lists and kit components are available upon request.

SONEX



Unique in design, the Sonex is a basic and economical all metal two-place monoplane. Both taildragger and tri-gear versions are available. The Sonex is 17.5 ft. in length and has a 22 ft. wing span. It features easily removable wings for transport and storage. Designed to meet the needs of both European and domestic aviators, it can incorporate various lightweight contemporary engines of 80-120hp (under 200 lbs. firewall forward). Suggested engines include the 2180 VW and 80-120hp Jabiru engines. Outstanding performance is achieved through its clean aerodynamic shape and simple, lightweight construction.

SONEX KIT BUILDERS

Wing Hardware Kit P/N 01-00005
Sonex Tri-Gear Hardware Kit..... P/N 01-00006
Sonex Fuselage Hardware Kit P/N 01-00008
Sonex Tail Dragger Hardware Kit P/N 01-00009

SONEX SCRATCH BUILDERS

Wing Hardware Kit P/N 01-00005
Sonex Tri-Gear Hardware Kit..... P/N 01-00006
Sonex Fuselage Hardware Kit P/N 01-00008
Sonex Tail Dragger Hardware Kit P/N 01-00009
Sonex Metal Kit P/N 01-00010
Sonex Wheel & Brake Kit..... P/N 01-00170
Sonex Tri-Gear Nosewheel Kit..... P/N 01-00171
Sonex Instrument Package
Sonex 2-1/4" Instrument Kit P/N 01-00014
Sonex 3-1/8" Instrument Kit P/N 01-00015
Waix Builders
Waix Hardware Kit..... P/N 01-00921
Sonex/Waix Standard Gear Hardware Kit... P/N 01-00922
Sonex/Waix Tri-Gear Hardware kit P/N 01-00923

More information on the Sonex can be obtained by contacting:

Sonex Ltd.

P.O. Box 2521 • Oshkosh, WI 54903-2521
Phone: (920)231-8297 • Fax: (920)426-8333
sales@sonexaircraft.com • www.sonexaircraft.com

KITFOX AIRCRAFT



With over 4,500 planes sold and delivered, the Kitfox from Kitfox Aircraft has become one of the most popular kit aircraft in the world. The Series-7 Super Sport is offered in a Taildragger version or with a Tricycle Gear and is easily switched from one to the other. The Kitfox features roomy side-by-side seating, folding wings and exceptional flying qualities. Engines are available up to the 125hp Continental IO-240B. Aircraft Spruce is a prime supplier of components used in Kitfox kits.

For further information contact Kitfox Aircraft:

123 Airport Way, PO Box 997, Homedale, Idaho 83628
Phone (208) 337-5111 • Fax (208) 337-5116
info@kitfoxaircraft.com • www.kitfoxaircraft.com

AIRCRAFT KITS

EVANS VP-1 VOLKSPLANE



Aircraft Spruce & Specialty is the exclusive distributor for VP-1 materials kits. The Volksplane was designed and prototyped by Bud Evans in 1968. The aircraft is inexpensive, easy to build, and fun to fly. The fuselage is all wood, with three bulkheads, four longerons, flat plywood and some vertical stiffeners. Wings are wood frames covered with fabric. The only parts requiring welding are the control stick, strut ends and stabilizer horn. The only sheetmetal work is in the elevator trim tab. Over 1000 of these planes are flying. The aircraft is ideally suited for Volkswagen engines in the 1500 to 1834 cc range. Plans for the VP-1 are . and are available from Aircraft Spruce, P/N 13-11560. Aircraft Spruce can supply complete materials kits from stock. Free kit list on request. Note: Landing gear is NCNR, may not be cancelled or returned. Lead times are always 6-8 weeks.

For further information on the Evans VP-1 contact:

Evans Aircraft
Box 744, La Jolla, CA 92037.

| VP-1 Kits | Part No. | Price |
|---|---------------|-------|
| Wood kit.....(VPK-1)..... | 01-00222..... | |
| Plywood kit.....(VPK-2)..... | 01-00223..... | |
| Metal kit.....(VPK-5)..... | 01-00224..... | |
| Hardware kit.....(VPK-7)..... | 01-00228..... | |
| Fabric kit.....(VPK-8)..... | 01-00221..... | |
| Fabric Coating kit.....(VPK-9)..... | 01-00226..... | |
| Cable Ass'y. kit.....(VPK-10)..... | 01-00227..... | |
| Wing Strut kit.....(VPK-11)..... | 01-00225..... | |
| Landing Gear 800 lb. ....(VP-1 cable-braced)..... | 06-00041..... | |
| Landing Gear 800 lb. ....(VP-1 free standing)..... | 06-04040..... | |
| Landing Gear 1100 lb. ....(VP-2 free standing)..... | 06-00043..... | |
| VP-1 Plans and Handbook..... | 13-11560..... | |

BUSHCADDY



The BushCaddy was developed as a rugged Canadian bush plane that performs equally well on wheels, skis or floats. The 44 inch wide cabin, doors that swing upwards under the wings and side by side adjustable seats afford the pilot easy access and a comfortable ride.

The aircraft features good control and stability and the excellent STOL performance required of an all-terrain aircraft. Rugged yet lightweight, the BushCaddy is a kit built aircraft constructed entirely of aviation grade 2024-T3, 6061-T6 aluminum and 4130 steel. 4 models of BushCaddy aircraft are available.

For information contact **C.L.A.S.S., Inc.**
177-179 Joseph Carrier Vaudreuil-Dorion, Qc. J7V 5V5, Canada
Phone: 450-455-2773 Fax: 450-455-8749
Toll Free: 1-888-977-1447
marla@bushcaddy.com • <http://bushcaddy.com/en/>

GLASAIR



In 1980 the kitplane industry was revolutionized by the introduction of the Glasair - the world's first pre-molded composite kitplane. They have remained on the leading edge of the exciting world of homebuilt aviation ever since! New Glasair - New GlaStar is now one of the largest, most well established kitplane manufacturers in the world, with more than 2,500 kits in the field and some 1,200 aircraft flying in countries around the world. Their reputation for innovative design, thorough engineering, quality components and conscientious customer service is unequaled in the industry. For more information on Glasair Aviation aircraft contact:

Glasair Aviation LLC
18810 59th Ave NE Arlington, WA 98223
Phone: 360-435-8533 extension 232
www.newglasair.com

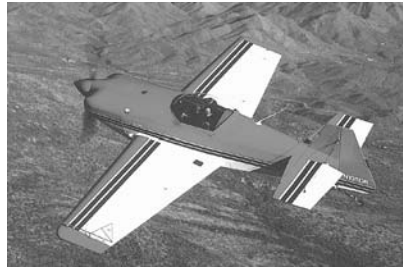
SKY ARROW



The Sky Arrow is a 1,450 lb. MTOW, high wing, tandem two seat, fixed gear aircraft. The airframe is fully manufactured with composite materials (kevlar and carbon sandwich). The high-wing tandem configuration provides excellent visibility of over 300°. The Sky Arrow is fitted with either a Rotax 912 or 914 engine. Its excellent STOL performance allows take-off and landing in less than 300 feet. The aircraft is offered to homebuilder enthusiasts as a kit which meets the FAA 49/51 percent rule. The Sky Arrow kit is composed of 10 subkits which can be bought separately and incrementally.

Pacific Aerosystem, Inc.
Gillespie Field
1870 Joe Crosson Drive, Suite 100
El Cajon, CA 92020 - USA
Toll Free: (800) 844-1441
Phone: (619) 631-0462 • Fax: (619) 631-0464
Email: info@skyarrowusa.com • Website: www.skyarrowusa.com

ONE DESIGN



Aircraft Spruce & Specialty Company offers a complete set of plans for the single seat aerobatic aircraft known as the One Design. Created by Dan Rihn as an economical answer for pilots wishing to fly Basic through Advanced aerobatics, the One Design features quick, easy construction and

excellent performance. Wings for the One Design are all wood, the fuselage is steel truss, covered with aluminum sheet from the firewall to the rear of the cockpit. The turtle deck is also aluminum and the lower half of the aft fuselage is fabric covered. The tail is fabric covered. A one piece aluminum spring gear is used for the main wheels and a steerable tail-wheel is used. Power for the One Design is obtained from a 0-360 and modified with an inverted oil system, high compression cylinders and fuel injection. Stressed for +/- 10 Gs, the One Design has a max. level speed of 184 mph, and cruises with a 75% power setting at 160 mph.

ONE DESIGN INFO PACK - P/N 01-06005.....**FREE**
ONE DESIGN PLANS - Complete construction drawings required to build the One Design aircraft from scratch or using pre-fabricated components. P/N 01-06010-C.....
Note: A signed License Agreement is required from the builder prior to shipment of plans. Include completed License Agreement with your payment.

ONE DESIGN RAW MATERIALS KITS

| Kit Description | Part No. | Price |
|--------------------------------------|---------------|-------|
| Aileron Kit..... | 01-02305..... | |
| Engine Mount Kit..... | 01-02310..... | |
| Elevator-Stabilizer Kit..... | 01-02315..... | |
| Fin & Rudder Kit..... | 01-02320..... | |
| Fuselage Kit..... | 01-02325..... | |
| Wing Ribs Kit..... | 01-02330..... | |
| Wing Spar & Skin Kit..... | 01-02335..... | |
| One Piece Turtledeck..... | 01-02349..... | |
| Matching Fairing for Turtledeck..... | 01-02350..... | |

Ask about pre-fabricated parts for the One Design.

For more information on the One Design contact:
Aircraft Spruce & Specialty Co.
225 Airport Circle, Corona, CA 92880-2527
Phone: (951) 372-9555 • Fax: (951) 372-0555

THORP S-18



The S-18 folding wing aircraft is available as a plans or kit built aircraft. It is an all metal 2-place side-by-side aerobatic plane. The basic structure is the same as the proven T-18 Thorp with a wider and longer fuselage. Revised airfoil on the

folding wing. Engines approved are 0-290 thru 0-360 allowing cruise performance from 160 to 180 mph.

For more information on the S-18 contact Classic Sport Aircraft:
19426 Campbell Creek Dr., Springville, CA 93265
Phone/Fax: (559) 539-2755 • E-mail: s18mike@ocsnet.net

AIRCRAFT KITS

ACRO SPORT



Designed by Paul Poberezny as a successor to the EAA Biplane, the Acro Sport offers performance and excellent aerobatic capability in the Sportsman and intermediate categories. Purposely uncomplicated and straight forward, the Acro Sport design has been chosen by hundreds of schools for project Schoofflight programs. It has a wide landing gear which provides superb ground handling and easy landing qualities. Builders can choose powerplants ranging from 85 hp to 200 hp. Features steel tube fuselage, spruce wing and overall fabric covering which makes the project an easy one for first time builders with average skills. Maximum speed for this diminutive biplane is 180 mph, it cruises at 130 and stalls at 50. It has a rate of climb of 3,500 ft/min and a range of 350 miles. Info packs are \$10.50 and complete plans are \$125.00.

Order from: Acro Sport Inc., Box 462, Hales Corners, WI 53130.

Free kit list on request. **Tech support for Acro Sport: Steve Nanweiler, 4819 Farmstead Ct., Wichita, KS 67220, (316) 744-0234**
Note: Landing gear is NCNR, may not be cancelled or returned. Lead times are always 6-8 weeks.

ACRO SPORT KITS

| | |
|---------------------------|------------------------|
| Complete Spruce Kit | Washer Kit..... |
| Spar Kit..... | Metal Kit..... |
| Rivet Kit..... | Plywood Kit..... |
| Misc. Hardware Kit..... | Bolt Kit..... |
| Nut Kit..... | Miscellaneous Kit..... |
| Landing Gear..... | |

Note: All additional items such as tie rods, instruments, plumbing, avionics, etc. can be found in this catalog.

ACRO SPORT II



This versatile biplane offers the outstanding opportunity to experience open cockpit flying with a friend. Excellent aerobatic trainer with responsive controls and docile straight and level flight characteristics. Powerplants can range from 108 hp to 200 hp. Cruise at 123 mph (180 hp), stall at 53 and max out at 152. The wide gear, large wheels and outstanding roll rate make the Acro Sport a dream on the ground, nimble in the air and a cinch for smooth landings. Designed by EAA founding president Paul Poberezny, the Acro II will accommodate pilots up to 6' 6" and 240 pounds. As with all Acro Sport projects, the fuselage is welded steel tube, wings are spruce and Stits Poly-fiber is used for covering. Information packages are available for \$10.50 and full sets of plans run \$125.00 from Acro Sport, Inc., Box 462, Hales Corners, WI 53130. **Free kit list on request. Tech support for Acro Sport: Steve Nanweiler, 4819 Farmstead Ct., Wichita, KS 67220, (316) 744-0234**
Note: Landing gear is NCNR, may not be cancelled or returned. Lead times are always 6-8 weeks.

ACRO SPORT II KITS

| | |
|---------------------------|------------------------------|
| Metal Kit | Clevis & Cotter Pin Kit..... |
| Complete Spruce Kit | Wood & Foam Kit..... |
| Spar Kit..... | Rod End Kit..... |
| Bolt Kit | Misc. Hardware Kit |
| Nut & Nutplate Kit..... | Miscellaneous Kit |
| Washer & Rivet Kit | Landing Gear..... |

Note: Additional items such as tie rods, plumbing, instruments, avionics, etc. can be found throughout this catalog.

POBER PIXIE - SINGLE SEAT



Few light airplanes offer builders the simplicity and payoff in fun flying that comes with the Pixie. Another superb design by founding president of the Experimental Aircraft Association, Paul Poberezny. Similar in many respects to the Heath Parasol, the Pixie is a modernization of the helmet and goggle days of the 1930's. The large wing and full span ailerons make for easy flying. With minimal taildragger experience, the Pixie is a breeze to handle on the ground. Landings are gentle affairs, visibility in cruise is outstanding and using it with skis adds another dimension of fun. The fuselage is 4130 steel tube, wings are Sitka spruce, covering is with Stits Poly-fiber. This is a beginner's project for construction, with performance that will satisfy any level of proficiency ...up to ATP! Plans are highly detailed and the cost level is low. Can be powered with a VW conversion or Continental A-65. It cruises at 83 mph, stalls at 30, and climbs at 500 fpm. The Pixie has a no-reserve range of 290 miles with and empty weight of 543 pounds, gross is 900.

An info pack is \$10.50, plans are \$125.00 and both can be ordered from **Acro Sport, Inc., Box 462, Hales Corners, WI 53130. Order your Pober Pixie materials kits form the approved supplier, Aircraft Spruce. Free kit list on request.**

POBER PIXIE KITS

| | |
|------------------|------------------------------|
| Metals Kit..... | Washer and Nut Kit..... |
| Plywood Kit..... | Cable & Cable Hdw. Kit |
| Spruce Kit..... | Misc. Hardware Kit |
| Bolt Kit..... | Miscellaneous Kit |

POBER SUPER ACE - SINGLE SEAT



One of the many designs to come from the drawing board of EAA's founding President, Paul H. Poberezny, the Super Ace, is an ideal project for first time builders. It offers the excitement of open cockpit flying and excellent performance. With options for 85 hp to 150 hp, the Super Ace can meet a wide range of desires. The fuselage is a traditional 4130 steel tube frame that's covered with Stits Poly-fiber. The two-piece wing is made of Sitka spruce spars, ribs formed with 1/2" x 1/2" spruce caps and covering is again Stits Poly-fiber. Wing span is 27'-3 1/2", length is 18'5" and empty weight is 685 pounds with a useful load factor of 385 pounds. Using a C-85 on the prototype, cruise speed is 90 mph. Info packs on the Pober Super Ace are \$8.00, plans are \$125.00 and can be ordered through **Acro Sport, Inc., Box 462, Hales Corners, WI 53130. Request a free brochure on the Super Ace from Acro Sport. Order your Pober Super Ace materials kits form Aircraft Spruce, the approved materials supplier. Free kit list on request.**

**For more information on the S-18 contact
 Classic Sport Aircraft:**

**19426 Campbell Creek Dr., Springville, CA 93265
 Phone/Fax: (559) 539-2755 • E-mail: s18mike@ocsnet.net**

AIRCRAFT KITS

POBER (CORBEN) JUNIOR ACE TWO-PLACE



This is the famous aircraft that launched an industry as well as the Experimental Aircraft Association when plans for it were published in Popular Mechanics in the early 50's. It is lightweight, easy to build, fun to fly and requires minimal maintenance. It has been modified from the original Corben

Baby Ace so that it can utilize aircraft engines. The fuselage has also been widened, the horizontal stabilizer was modified for easier construction and modern aircraft wheels and brakes are now called for. With nearly a 34' wingspan and Clark Y airfoil, the Pober Junior Ace, designed by EAA founding president Paul Poberezny, is docile in stall and landing patterns. Airframe is 4130 steel tubing, wings are all wood and the recommended powerplant is a Continental C-85. Empty weight of the Junior Ace is 750 pounds and gross capacity is 1,320 pounds. Free brochure available from **Acro Sport. Plans can be ordered from Acro Sport, Inc., Box 462, Hales Corners, WI 53130.** Order your Junior Ace materials kits from Aircraft Spruce, the approved materials supplier. Free kit list.

VULCAN C100



Vulcan C100 is a real Sport Pilot aircraft available both fixed and retractile landing gear. Designed for Italian ultralight aviators it is a very beautiful aircraft inspired to Frati's Falco line. All metal construction it can support engines from 80 hp to 150

hp. Suggested engine Rotax 912 series. **Dimensions and characteristics:** Length - 21.45 feet (6.50 m), Height - 7.59 feet (2.30 m), Wing span - 26.40 feet (8 m), Wing surface - 114.14 sq feet (10.61 sp m), Cross wheel distance - 8.25 feet (2.50 m)

Electric actuated Flaps, Retractable landing gear, pneumatic actuated Stabilizer Trim, electric actuated Engine, ROTAX 912 ULS, Propeller-Carbon composite Three blade, On round pitch variable Empty weight - 621 Pounds (282 Kg), Tanks capacity - 24.96 US gallons (96 litres)

Performances: Max horizontal speed - 140 Kts (260 Km/h), Cruise speed (75% setting) - 124 Kts (230 Km/h), Stall speed (Flaps down) - 34 Kts (62 Km/h), Climb rate - 1200 ft/min (6 m/sec), Take off run - 726 feet (220 m), Landing run - 462 feet (140 m), Max. range - 653 nm (1210 Km) (5h30' with 30' reserve), Max efficiency - 12

CORIVI AVIATION

Via Puglia, 70/D - 95125 Catania - CT (Italy)
Email: corivi@corivi.com • Website: www.corivi.com
Phone/Fax: (0039) 095 330915



SONERAI I & II

Sonerai series aircraft are mid and low winged sport aircraft. The Sonerai I was designed by John Monnett. It was designed to meet all Professional Race Pilots

Assn. and Formula Vee Racing requirements for 1600 cc Volkswagen powered aircraft. Fuselage construction is 4130 steel tubing with a fabric covering. The aircraft has folding wings made of 2024T3 aluminum. The Sonerai has an excellent reputation for strength, speed, and agility. 6 versions of the aircraft are available including the Sonerai II, two place tandem versions and LS stretch versions. For more information on the Sonerai series of aircraft contact **Great Plains Aircraft, P.O. Box 545, Boys Town, NE. 68010. Phone (402) 493-6507, Fax (402) 333-7750.**



NEXAER LS1

The Nexaer LS1, a 2-seat composite airplane that meets Light Sport Aircraft classifications under the new FAA Sport Pilot rule and is being promoted and marketed by Sportplanes.com The LS1, manufactured by Nexaer in Colorado Springs,

Colorado, features a 54" wide cockpit, a cruise speed of 120 knots and a useful load in excess of 600 lbs. The prototype of the LS1 was unveiled at AirVenture 2005.

For further info contact Nexaer at:

7890 Cessna Drive, Meadow Lake Airport, Peyton, CO 80831
Ph: (719) 683-5060 • Fax: (719) 683-5190
www.Nexaer.com • e-mail: info@nexaer.com

NESMITH COUGAR - TWO-PLACE



The Cougar, designed by Bob Nesmith dates back to the mid fifties. It shows an obvious influence by Steve Wittman's Tailwind, featuring wide short wings (20' 6") and a one-piece steel tube landing gear. The design was modified by Leonard Eaves for an EAA design contest in 1963, principally for the purpose of including folding wings. The aircraft can be towed to and from the airport on its own landing gear. With a redline speed of 195 mph, the Cougar maintains a brisk cruise of 120 to 165 mph, depending on choice of engine which can range from 65 hp to 125 hp. Landing approach is done at 80 mph and touchdown is around 70. The Cougar is an outstanding cross country machine that utilizes traditional steel tube fuselage, Sitka wings and fabric covering. Hundreds of copies of this versatile design have been completed. Cougar info packs are available for \$10.50 and plans for \$125.00 from **Acro Sport, Inc., 462, Hales Corners, WI 53130.**

PITTS MODEL 12



The latest biplane designed by Curtis Pitts. The Pitts Model 12 is a 2 place fully aerobatic biplane designed specifically around the 360 HP (400hp) Russian built Vedeneyev M-14P (PF) radial. Stressed to +9 -7.5g at full gross weight of 2250lb with 750lb useful load. It has a 239 MPH Vne, 175 MPH Cruise @70% Power, and 64 MPH Stall Speed. 3200+ Feet per Minute Climb Rate, 300+ Deg. per Sec. Roll Rate. Aerobatic in design, the Pitts model 12 is an excellent cross country airplane with a 520 Mile Range. Aircraft Spruce is a prime supplier for Pitts Model 12 kits.

Jim Kimball Enterprises, Inc.
5354 Cemetery Rd., Zellwood, FL 32798
Ph 407-889-3451 • Fax 407-889-7168
email: info@jimkimballenterprises.com
website: www.jimkimballenterprises.com

CORBY STARLET CJ-1



The Corby Starlet is an all wood single seat, low wing cantilever monoplane. It is a very practical cross-country machine as well as being an aerobatic aircraft. The design was drawn around the use of VW powerplants up to 75 hp and 160 lbs. max. The Starlet has been awarded a Type certificate issued by the Australian Aviation Authority. For more info contact:

Corby Starlet, 1335 Robinhood Lane S., Lakeland, FL 33813
ph: (863) 644-8426

corbystarlet@juno.com • www.CorbyStarlet.com

Spruce Kit (minus spars).....P/N 02-04300
2 P.c. Spar Kit.....P/N 02-09000
Plywood Kit.....P/N 01-00381

AIRCRAFT KITS

ROTORWAY EXEC 162 F



The Exec 162F provides style, speed, comfort, safety, reliability, proven performance and an award-winning design. The Exec 162F is produced by RotorWay International, the world's oldest and largest kit helicopter company. This piston-powered rotorcraft utilizes the most sophisticated technology

available with a FADEC (Fully Automated Digital Electronic Control) system controlling and monitoring engine functions of the RI 162F fuel-injected power plant. Requiring as little as 300 hours to assemble, this comprehensive kit comes complete with everything but the paint and avionics. Also available to owners are detailed construction and maintenance video series as well as a flight-transitional training program. Tours and demonstration flights are available by appointment to interested buyers by calling the factory.

For more information contact Rotorway International:

4140 W. Mercury Way • Chandler, AZ 85226
Phone: (480) 961-1001 • Fax: (480) 961-1514
email: rotorway@primenet.com

SAFARI



Designed for the ruggedness and reliability crucial for flying in remote areas, the Safari is powered by a Lycoming 160 Hp aircraft engine, maintaining

the highly trustworthy flying abilities of this classic design. Formed from 4130 Chromoly aircraft steel tubing, pre-welded at the factory; featuring the maximum viewing characteristics of the certified Bell 47 bubble, this system is driven by gear and shaft, giving maximum performance. The main and tail rotor shafts are made from Titanium. Cruising speed is 80 mph with climb rate of 1,000 fpm & an operating ceiling of 10,000ft. Max. speed is 100mph.

For more information contact Canadian Home Rotors:

P.O. Box 370 • 4 Roy Street • Ear Falls, Ontario, POV ITO, Canada
phone: (807) 222-2474
e-mail: info@acehelicopter.com • www.acehelicopter.com

RAF 2000



The performance specs of the RAF 2000, competitive price and one of the lowest operational costs (\$20-30 per hour) make it one of the most popular auto-gyros available today. The 2-place rotorcraft is available in kit form and comes in two versions, standard and GTX SE versions. The GTX SE includes a variety of performance enhancing options. Standard engine on both models is a 130 hp four cycle Subaru EJ22. Fuel Capacity for the RAF 2000 is 23 US gallons and fuel consumption is 6 gph at 80%. Engine, propeller and instrument packages

are included in RAF kits. The RAF 2000 has a dry weight of 760 lbs. Performance specs for single occupant: Min. speed: 10-12 mph; Max. speed: 100 mph; Cruise: 80 mph; Take Off Roll: 0-75 ft.; Landing Roll: 0-10 ft.; Rate of Climb: 1200 fpm.

For further information contact Rotary AF Rotorcraft:

Box 1236 1107-9th St. W., Kindersley, SK, Canada S0L 1S0
Phone: (306) 463-6030 • Fax: (306) 463-6032
raf2000@sk.sympatico.ca • www.raf2000.com

AQUAJET-X



The new AQUAJET X, inspired by forthcoming warbirds F22 Raptor and X35 Joint Strike Fighter, provides the next level of flying excitement and realism between the AquaJet and a real airplane.

To accomplish this we added an electric leaf blower to provide vectored thrust via rudder pedals while creating the jet engine sound, and employed a more sophisticated suspension. Thus, the AquaJet X can climb at 30 deg., dive at 15 deg., bank, turn and spin up to three revolutions under full control of the pilot. A throttle actuates the lift cylinder - controlling takeoff, climb and descent so the stick can control pitch and landing flare.

For more information visit our website at www.aircraftspruce.com
AquaJet X Plans..... P/N 01-00962.....
AquaJet X Materials Kit..... P/N 01-00964.....

HUMMINGBIRD 260L



In 1991 the helicopter kit build industry was revolutionized by the introduction of the Hummingbird 260L, the world's first FAA certified helicopter to be sold in kit form. By utilizing the design from a FAA certified helicopter we are able to implement safety, reliability, and

performance from years of proven flight time. The Hummingbird is a single engine, single three-bladed main rotor type helicopter, with a two blade tail rotor. The fuselage is made of aluminum and composites. The Hummingbird is powered by a FAA approved Lycoming aircraft engine that boasts some very impressive performance numbers.

Consider these quality Hummingbird features: Comfortable four-place cabin, approximate 375 mile range, 950 pound payload, smooth fully articulated rotor head, electric flight control trim system, all aluminum construction with composite components, no welding, rotor brake, wheels for taxiing with hydraulic brakes and shock absorbing struts, main rotor blades are quickly removable for maintenance, trailer transport or storage. It's as easy to assemble as it is to fly.

For Further Information Contact: Vertical Aviation Technologies, Inc
1609 Hangar Road, Orlando-Sanford International Airport

Sanford, Florida 32773

Phone: 407-322-9488 Fax: 407-330-2647

www.Vertical-Aviation.com E-Mail: Sales@Vertical-Aviation.com

VOLMER VJ-22 AMPHIBIAN



The Volmer VJ-22 "Sportsman" is a two-place, side by side, closed cabin, highwing monoplane, amphibious flying boat. The original Sportsman was completed December 1958. The rigid, corrosion proof hull is

made of 1/16 inch and 3/32 inch aircraft mahogany plywood with 1/4 inch plywood at the step for maximum strength and covered with fiberglass for added protection. Numerous testing from calm water to five foot swells in the open sea have proven the design to be both extremely airworthy and seaworthy. Wings are wood spar and ribs, fabric covered. It takes off from water at sea level in about 20 seconds. The VJ-22 is powered by a Continental C-85, starter and gen. It has a cruising speed 85 mph and stalls at 45 mph

Volmer Club of America - Attn: Robert Albrecht

536 Oak Ave., Bridge City, LA. 70094 - Ph: 504-436-6248

rjaflys@aol.com • www.volmeraircraft.com

VJ-22 Spruce Kit P/N 02-06000

LIGHTNING



| Engine | Lightning Jabiru 3300 | Lightning Sport 3300 Jabiru 3300 |
|----------------------------|-----------------------|----------------------------------|
| HP | 120 | 120 |
| Maximum Speed | 190 mph | 150 mph |
| Cruise Speed | 175 mph | 138 mph |
| Vne | 208 mph | |
| Stall (Full Flap) | 45 mph | 40 mph |
| Stall Clean | 56 mph | 51 mph |
| Glide Ratio | 17:1 | |
| Take Off Roll | 315 ft. | 275 ft. |
| Landing Roll (with brakes) | 500 ft. | 350 ft. |
| Climb Rate (at gross) | 1200 ft./min. | 1800 ft./min. |
| Turn Rate 45/45° | <1 second | |
| Maneuvering Speed | 140 mph | |
| Endurance | 4 hr | 5 hr |
| Range w/ reserve | 700 sm | 700 sm |

For further information on Lightning Aircraft contact

LIGHTNING WEST, Gregg Hobbs

18750 West Avra Valley Rd., Marana, AZ 85635

Phone: (520) 405-6868 • hobbs28@aol.com

www.lightningaircraftwest.com

AIRCRAFT KITS

SUPER CRUISER



The Super Cruiser is a 4-place aircraft with a cruise speed of 190 mph and a stall speed of 59 mph. The aircraft has a length of 25.46 ft. and wing span of 29 ft. It has a gross weight of 2500 lbs. and a useful load of 1100 lbs. The prototype is powered by

a Cont. IO-360ES. Lycoming engines from 160-200 HP are recommended and build time is 1200-1500 hours. Aircraft Spruce is a prime supplier for materials used in Super Cruiser kits. For further information contact:

Pulsar Aircraft Corp. S.A. de C.V.
Colonia Campestre, Pasaje 2 Casa 4
San Salvador, El Salvador
Ph: (503) 2263-8840 • Fax: (503) 2263-8863
Noth American Inquires please call 1-305-395-3698
Email: info@pulsaraircraft.com

CELERITY



The Celerity is a high performance, 2-place side-by-side airplane with fully retractable landing gear, including the tail wheel. It can also be built as the "Marathon" with fixed tricycle gear. Designed for builders with average skills, both aircraft are constructed from wood with fiberglass covering. Six construction videos are available. Celerity cruises in the 200 mph range on 150 to 200 hp and has an operating range of more than 750 miles with fuel reserve. The wing span is 25 feet and it is just under 22 feet. Complete Celerity materials kits are available from Aircraft Spruce. Request free kit list. For more information on plans and kits contact:

Mirage Aircraft, Inc. ,
8702 N Silver Moon Way, Tucson, AZ 85743
Phone: (520) 665-9341
Webpage: www.mirage-aircraft.com
Email: mirage@copper.net

VELOCITY



A recent addition to the Velocity line of high performance aircraft is the Elite XL. The XL – for "extra large" – combines all the great flying qualities of the canard type airplane with the largest cabin of all kit aircraft. Larger, in face, than almost all the general aviation aircraft, including most twins

– shoulder to shoulder width of 47.5. Compare this to a Mooney at 42.5", the Bonanza/Baron at 42", or the popular Cessna 182 which measures 44". Longer length also allows for full size luggage in the aft baggage compartment. A larger engine is also used in the XL to provide even more performance. Expect a 200 kt cruise (230mph) on the popular and easy-to-find Lycoming IO 540, 260HP engine. Fuel burn on this engine at 65% power will yield a range of over 1300nm (1500sm), with a 30 minute reserve, using the optional 100 gallon fuel capacity (standard fuel capacity on the Elite XL is 70 gal). The XL kit, like the standard Elite & Elite LW, is available with fixed or retractgear. Two large gull wing doors are standard.

For further information contact Velocity Aircraft:
200 W. Airport Drive • Sebastian, FL 32958
Ph: (772) 589-1860
info@velocityaircraft.com • www.velocityaircraft.com

KR-1 AND KR-2



The KR-1 (single place) and KR-2 (two place) were designed in the early 1970's by the late Ken Rand. These popular aircraft combine composite and wood construction to produce fast, efficient aircraft that remain good sellers year after year.

Contact: Rand Robinson Engineering

7071 Warner Ave. #F, Huntington Beach, CA 92647
Ph: (714) 898-3811

www.fly-kr.com • e-mail: pilot@beegroup.com

KR-1 Complete Spruce Kit..... P/N 02-05400
 KR-2 Complete Spruce Kit..... P/N 02-05500
 KR-2S Complete Spruce Kit..... P/N 02-05510

SKYBOLT



The Skybolt is a 2 place fully aerobatic biplane which is also an excellent cross country aircraft. It is larger and easier to handle than smaller biplanes, and construction can be completed with hand tools by first time builders. Aircraft Spruce has provided materials for many Skybolt

builders around the world for over 20 years.

Contact: Steen Aero Lab, 1451 Clearmont St NE, Palm Bay, FL 32905 • Ph (321) 725-4160 • Fax (321) 725-3058

Complete Spruce Kit..... P/N 02-05700.....
 Spruce Spar Kit..... P/N 02-07900.....
 4130 Steel Kit..... P/N 03-15500.....

CULP SPECIAL



Everything about the Culp Special was meant to bring about that 1930's airshow airplane feeling. Working with Hale Wallace of Steen Aerolab, Steve Culp redesigned the Skybolt and developed the modifications necessary for this round engine aircraft. The Culp

Special is a fully aerobatic bi-plane using a 360 hp 9-cylinder Russian M-14P radial engine, the same engine used in the Sukhoi and Yak series aircraft. The aircraft is built using tube, wood and fabric construction materials. The two seat aircraft has an empty weight of 1480 lbs., a cruise speed of 150 mph and range of 600 sm. Aircraft Spruce is a major supplier of materials for the Culp Special. For more information on plans and kits contact:

Culp Specialties, 1530 Airport Dr #3, Shreveport, LA. 71107.
Phone: (318) 222-0850
culpspecial@yahoo.com • www.culpspecialties.com

HONEY BEE & H-3 PEGASUS



The H-2 Honey Bee is a lightweight aerobatic biplane first flown in 1986. With the H-2, designer Bert Howland introduced the technique of TIG-welding the fuselage from square 6061-T6 aluminum tubing, yielding a strong and

rugged fuselage frame that weighs only 24 pounds. The airfoil on the 4 equal span wings is 6-1/2" thick and features 7 aluminum-capped foam ribs per panel with a D-cell leading edge spar and a C-section rear spar. Design load factor is +8g to -6g. Two or four aileron options are offered in the plans. With the 4 aileron option, an engine of at least 65 hp, and an inverted fuel system, the H-2 is suitable for competition aerobatics up to the IAC intermediate level. The aircraft has been powered with engines from 40 to 95 hp. Homebuilder plans cost \$250 and consist of 40 engineering drawings and designer construction notes.



The H-3 Pegasus is a low-wing, open cockpit monoplane by noted lightweight sportplane designer Bert Howland. It features a lightweight fuselage, based on TIG-welded, square aluminum tubing, that weighs only 18 pounds. The internal

construction of the wings features a cantilevered design that eliminates struts and cables. Powerplant range is 28 hp to 55 hp. The prototype H-3 first flew in 1988 and won the "The Most Innovative Unltralight" award at Sun 'N Fun 1989. The design was also designated "Best Commercial Ultralight" at the 1990 event. The H-3 is not an ultralight vehicle as defined in FAR Part 103. Gross weight of the Pegasus is between 500 and 595 lbs. Pegasus plans cost \$250 and are available from Classic Aero Enterprises. Call Aircraft Spruce to obtain a complete kit list of construction materials. For more information on plans and kits contact:

Classic Aero Enterprises
343 Wrexham court #101D, Hampton, VA 23669
Phone (757) 851-2856
Visit Classic Aero Enterprises

AIRCRAFT KITS

GP-4



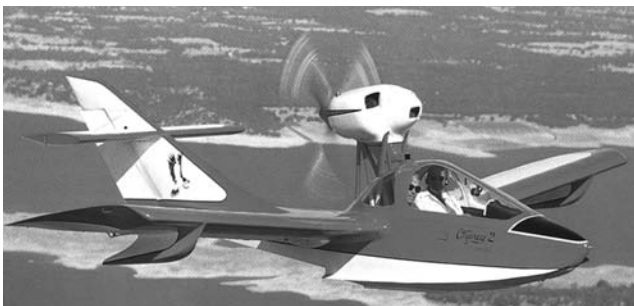
Designed by George Pereira, the GP-4 is a high performance two place side-by-side kit aircraft which is a fast, efficient cross country performer. Construction is primarily of wood and steel. The GP-4 is becoming the choice of many builders seeking a solid, traditionally constructed scratch built aircraft.

Complete Spruce Kit P/N 02-25200
 4130 Steel Kit P/N 02-25210
 Plywood Kit P/N 02-00078

Osprey Aircraft

3741 El Ricon Way, Sacramento, CA 95825
 info@ospreyaircraft.com
 www.ospreyaircraft.com

OSPREY



The Osprey is a 2-place amphibian aircraft with fully retractable landing gear. The Osprey utilizes wood and steel construction and is ideal for the first time builder seeking well presented plans, ease of construction, and the versatility of an amphibian aircraft.

Complete Spruce Kit P/N 02-05100
 Osprey Clear Canopy P/N 05-01162
 Osprey Tinted Canopy P/N 05-01163
 Picture Decal Left Black P/N 09-43813

Osprey Aircraft

3741 El Ricon Way
 Sacramento, CA 95825
 Info@ospreyaircraft.com • www.ospreyaircraft.com

Wing and Aileron spars are furnished to net dimensions, not beveled.

BREEZY



Designed by Carl Unger the Breezy was first introduced in 1965, and hailed as one of the most distinctive and unusual homebuilt designs to ever attend an EAA Fly-in. Though there have been a lot of other designs, particularly homebuilts, that embody the open cockpit which trademarks a Breezy, nothing can surpass it for the view and fresh air feeling. The original Breezy was designed and built to accept a set of PA-12 wings. For that reason, there are no wing drawings with the plans. It is possible to substitute PA-14, PA-18, or J-3,4, or 5 wings. It's also possible to order wing kits that replicate a J-3 wing. Power for the prototype, which now hangs in the EAA Aviation Museum in Oshkosh, WI, is a Continental C-90. The Breezy will carry a pilot and two passengers. Contact Aircraft Spruce for FREE Kit List.

Carl Unger, 8751 S. Kilbourn, Oak Lawn, IL 60456 PH: (708) 636-5774

Misc Hdwe kit P/N 01-30010
 Breezy Steel Kit P/N 01-30020
 Breezy Aluminum Kit P/N 01-30030

AVIAT

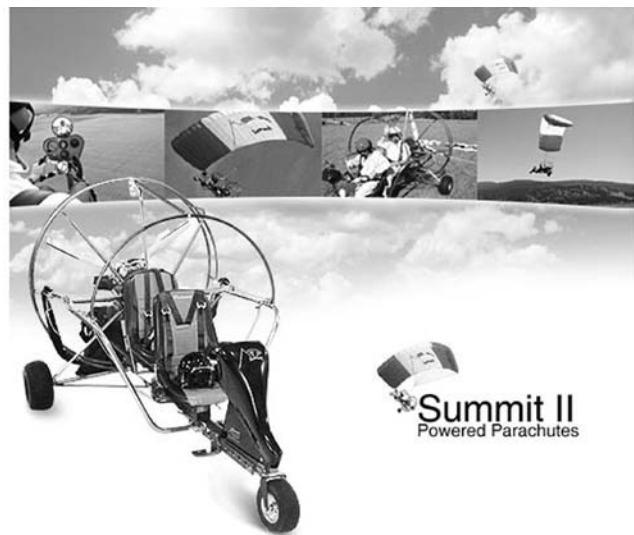


Aviat offers an outstanding line of aircraft including the Husky A-1 and Pitts Special. The Husky A-1 is an exceptional STOL aircraft and the Pitts Special is one of the most successful and popular aerobatic biplanes in the history of aviation. Aircraft Spruce is a prime supplier of components used in Aviat's production.

Aviat, Inc., 672 S. Wahington St.
 P.O. Box 1149, Afton, WY 83110
 Phone (307) 886-3151

aviat@aviataircraft.com • www.aviataircraft.com

SUMMIT II



The SUMMIT II, the very first SLSA registered powered parachute in North America has some very unique features that make this design extremely strong and very stable. The Summit Powered Parachute has the 4 point canopy pick up to eliminate the pendulum effect, the tire placement to protect the propeller cage from damaging the prop, the unique true 2 seat placement for very comfortable seating and the innovative fuel seat tank. The Summit II also has exclusive foot steering and the anodized airframe which is a process that totally immerses each part, inside and out with a protective coating, contributes further to the uniqueness of this design. The Summit is an easy bolt together and economical kit that affords customers choice of both 2 stroke or 4 stroke engine including Rotax 503, Rotax 582, Rotax 912 and the HKS 700E. Each Summit II comes complete with your engine choice, engine accessories, GSC 3 blade GA propeller, Taskem EIS unit, Azusa tires and rims, full suspension with front brake and the S-Series Mustang square canopy. A list of options also allows you even more choices to tailor your kit to your tastes. Canopy color choices, engine choices, airframe color choices, option choices are made easy by viewing our website.

For more details on our Summit II and accessories, please contact:

Aircraft Sales and Parts Ltd
 6255 Okanagan Landing Road, Vernon, BC V1H 1M5
 Ph: 250-503-1033 (Mon - Fri, 8-5 PST),
 Fax: 250-549-3769
 info@summitppc.com www.summitppc.com

AIRCRAFT KITS

MURPHY REBEL



The Murphy Rebel is an all-metal, 3 seat, high wing aircraft constructed using semi-monocoque construction techniques. Built for strength and longevity, the Rebel is designed to endure tough bush plane-like conditions with low maintenance costs. Designed by Darryl Murphy, the Rebel was designed to accommodate a variety of powerplants including the Rotax 912, Lycoming O-235 and Lycoming O-320. The Rebel is easily stored or trailered due to its removable wings and folding tailfeathers. The cabin is a comfortable 44" wide and provides a large wrap around instrument panel, skylights, and large doors. Pre-aligned punched holes make eliminate the need for jigs & special tools, making the Rebel a simple aircraft to build. The Rebel is at home on floats and skis as on standard wheels. Aircraft Spruce is a prime supplier of materials and components used in Rebel kits.

For further information contact **Murphy Aircraft Mfg. Ltd., Unit #18155 Aitken Rd., Chilliwack, British Columbia, Canada V2R 4H5. Ph: (604) 792-5855.**

RAN'S S-16 SHEKARI



The S-16 Shekari is a kit aircraft with the quick build built in. Features an unusual blend of construction concepts to both enhance performance and shorten build time. The S-16 is based around a welded steel tube "cockpit cage" with composite fuselage shells. The vertical and horizontal stabilizer surfaces are molded into the fuselage shells with internal aluminum ribs and spars. The wings are conventional aluminum construction and come with holes matched drilled between ribs and skins. The result is nearly jigless construction. The fuselage comes with all key holes located. The S-16 exhibits excellent performance and handling using a variety of engines. The original flew on the Rotax 912 HP producing a 145mph cruise. The 912 was dropped in favor of the Lycoming IO-320.

For further information contact **RANS: 4600 Highway 183 Alternate • Hays, KS 67601 Phone: (785) 625-6346 • www.rans.com**

BARRACUDA



The Barracuda, made entirely of spruce and plywood, is a fast, high performance, side by side two-place with retractable, tricycle gear. Rated for limited acrobatics, it has a 200 MPH cruise speed and 2,100 FPM rate of climb with a Lycoming 0540 Engine. Designed by RAF pilot, Geoff Siers, to fly like a fighter, power may vary from 200 to 300 horsepower. A stall speed of 62 makes landing easy. The comfortable 40 inch wide cockpit, with the sound deadening properties of wood, makes it a wonderful cross-country tourer. The structure is elegant and simple, like a model airplane, with no complex jiggling. The Barracuda won the "most outstanding new design" at Oshkosh. Aircraft Spruce & Specialty Co. is the distributor for materials kits and component parts. For further information and plans, contact

Siers Flight Systems, Inc., 20613 36th Place West Lynnwood, WA 98036

Phone: (425) 478-3655 • barracuda@siersflight.com
Plywood Kit..... P/N 01-00577
Spruce Spar Kit P/N 01-00617

STALLION



The Stallion will carry 6 people and or/cargo (1,600 lbs. useful load) over a long distance and at an operating and fuel cost that no other kit or factory can match. Not even a twin engined aircraft. And this for an acquisition price 1/3rd that of a factory airplane. Compare the specs of the Stallion to any other aircraft and see why everyone agrees that it is the aircraft for the next century and beyond. With a cruise speed of 200+ knots at 9,000 feet, the Stallion burns 13.8 gph of fuel for 16.7 miles/gallon. with 180 gallons the Stallion has a coast range. For loading, a large 74 inch by 36 inch removable panel is located on the right side. Normal access is achieved from the left side, clamshell door. The pilots seat is moved forward to allow easy access to the back seats and it is moved back to allow access to the pilot and copilot seat. The top of the left door hinges up to allow taxing with the left door open and the bottom door hinges down and provides a step for both the back and front seats All seats are attached with quick release pins and can be removed in seconds for carrying cargo. The high wing allows excellent visibility of the ground from the air. Some of the other features of the high wing include reduced aerodynamic drag compared to low and mid wing aircraft and gravity fuel feed. Information Package \$12.00. Video \$30.00 Both \$40.00. Aircraft Spruce is a prime supplier of materials & components used in the Stallion kits.

Contact Aircraft Designs, Inc.: 5 Harris Ct. Bldg. S., Monterey, CA 93940 • Phone: (831) 621-8760 • Fax: (831) 621-7376 Email: jets@mbay.net

FLY BABY



This plane is a structurally simple and easy-to-fly airplane designed to the requirements of the Experimental aircraft Association for home construction and storage in a space 7' x 8' x 20', which is equivalent to the standard home garage. Great emphasis has been placed upon safe flight characteristics and good low speed performance for takeoff and landing at some sacrifice of high speed. The

structure has been designed for standard airplane engines from 65 to 85 horsepower and the aerodynamic features are of sizes and proportions suited to obtaining the best all-around performance in this power range. Because of this, there is not enough advantage to be gained from using engines of significantly higher power to offset the cost and weight penalties. Increasing the power to increase the aerobatic capability is not recommended. FLY BABY will do simple recreational aerobatics very well but is not intended for rough air show or competition maneuvers.

Fly Baby Spruce Kit.....P/N 01-00977
Fly Baby Plywood KitP/N 01-00974
Fly Baby Metals KitP/N 01-00976
Fly Baby Hardware KitP/N 01-00975

Contact David R. Bowers:

**13730 Burke Road, Los Altos Hills, CA 94022-3549
ph: (605) 948-3229 • [Http://www.bowersflybaby.com](http://www.bowersflybaby.com)**

BAKENG DEUCE



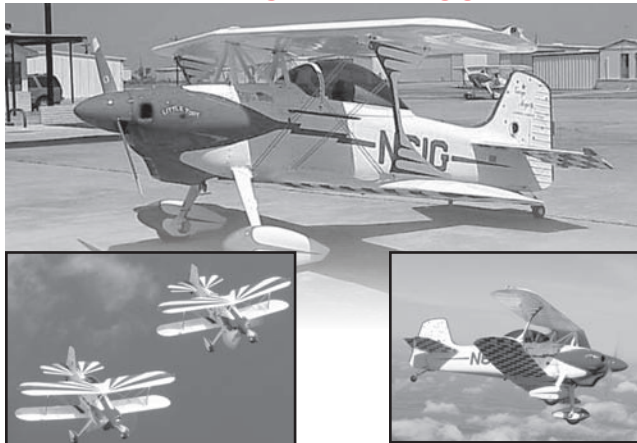
The Bakeng Deuce is a two place parasol that is great for plain every day or weekend flying. It is of a basic aircraft design utilizing a steel tube fuselage. The structure is faired with plywood and aluminum formers which support spruce stingers. Wings are of basic wooden construction with solid spruce spars. The Deuce is a very easy aircraft to build with an excellent set of plans. It has a max. speed of 140 mph, cruises at 110-120 mph with a stall speed of 35-40 mph.

**Bakeng Deuce Airplane Factory
9850 52nd Street, Kenosha, WI 53144**

Ph: (262) 658-9286 • e-mail: acole@interaccess.com
Spruce Spar Kit P/N 02-06800

AIRCRAFT KITS

MEYER'S / LITTLE TOOT



Designed by George Meyer, the Little Toot was first flown in 1957 and in the same year took the top award from mechanics. It also won the Paul H. Poberezny Award in 1999 & 2000. Illustrated for "Outstanding Achievement in a Homebuilt Aircraft" at the 1957 EAA convention in Milwaukee. Today the aircraft is still popular in appearance and functionality. Little Toot is a Single Seat, Sports Biplane.

The fuselage is an all-metal structure with metal-covered steel tube construction from rear of cockpit forward, and metal monocoque rear of tubular fuselage cockpit forward section. The plans also include an alternate tube and fabric fuselage construction. It features all wood wings, two 1" thick spar structure with fabric covering. Fabric covered all metal full-length ailerons on lower wings only. No Flaps. Little Toot has super strong structure stressed to 10- and 10+ G's. Power Plant options include 4-cylinder engines of up to 200 hp and six cylinders up to IO-540 250 horse power.

The Little Toot full sized Plans P/N 01-01049
The Little Toot 11X17 Booklet..... P/N 01-01050

For more info and plans contact Tommy Meyer:
170 Park Lane, Lewisville, Texas 75077
Phone: (817) 269-9292
trmeyer@airmail.org • www.littletootbiplane.com

CRIQUET STORCH



The Criquet Storch is a light sport aircraft single engine, wings individually braced to lower fuselage longer on by paired V-struts. The struts are braced to wings by N-support braces, wings are provided with fowler flaperons, fixed slats along at the entire wings span The fuselage is a reticular structure, made of welded tubular steel, fixed gear with tail wheel configuration "free wheel".

Two seats in tandem configuration, flight controls for both pilots, moreover just the frontal seat has flight instruments. The pilot's cockpit is covered with lexan sheets; accessible only through a single door at the right side, with a step on the landing gear main tube

The primary fuselage structure consists of a welded steel tubular framework and warren truss-type shear bracing, including the fixed vertical tail. Wing attachments, ruder attachments, landing gear attachments, and engine mount are welded or part of fuselage structure. Almost all the fuselage is fabric covered except the engine cowling and the frontal sides of the cockpit. The cockpit enclosure is manufactured of a steel channel framework welded to the fuselage structure. The framework is covered with Plexiglas and fabric.

The wing consists of an externally-braced high wing monoplane structure incorporating two aluminum spars. The wing panels are fabric covered however the leading edge and slats are alloy aluminum covered. The fabric is attached to the ribs by conventional rib stitching. The wing incorporates fowler flaperons.

The vertical tail consists of steel tubular leading edge and a conventional spar-ribs structure joined to the fuselage through two hinge, the structure is covered with fabric.

The horizontal tail consists of conventional aluminum spar-ribs structure joined to the fuselage through a series of bolts and the trim group, externally-braced structure.

The main landing gear incorporates individually sprung. The shock absorbing struts consist of steel tubes incorporating shock absorbing, hydraulic brake system on each wheel for easy ground maneuvering. Heel-type brake pedals are mounted on each side of the cockpit.

For more information please contact:
Criquet Aviation, Pablo Valencia Iragorri
Ph: +557(1)6764254 • Fax: +557(1)6764216
Miami, Florida 305-7260488

WHISPER MOTORGLIDER



The Whisper was designed for the homebuilder. Every component has been optimized to ease the task of the homebuilder, yet the final result is a highly efficient and extremely strong airframe that will provide for many years of trouble free operation.

The aircraft can be built from a "basic package" or from a "fast build package" depending on how many hours the builder wishes to spend on the project. Components not supplied in these packages can be manufactured by the builder or ordered from the factory. All hardware is ordered directly from Aircraft Spruce & Specialty by the builder.

Specifications: The Whisper can be built with a wingspan of 16m (52.5') or 12m (39.4') to suit individual requirements. With the longer wing the aircraft has a glide ratio of 28:1 and a minimum sink rate of 200fpm which makes it a very capable glider. The 21USG fuel tank and the 115MPG cruise speed also make the aircraft capable of very long powered flights. The 4'2" wide cabin allows for very comfortable side by side seating. The aircraft can be built with conventional or nose wheel undercarriage. The aircraft structure is fiberglass and the wing has been tested to an ultimate load of 10.6g. Engine options are VW2100, Jabiru 2200/3300, Rotax 912/S

Further details can be obtained from the website: www.whisperaircraft.com or by emailing info@whisperaircraft.com. The website has a forum where builders post details of their projects and exchange information.

TUNDRA



The TUNDRA is a four place kit plane with performance levels that put it easily in the STOL aircraft category (Short Takeoff and Landing) with a useful load comparable to bigger airplanes in the Cessna Skylane category. This airplane kit allows you to build an aircraft which will carry four adults, their luggage and enough fuel for a trip of several hours, even in floatplane configuration. This experimental aircraft is a true four place airplane.

With the looks and capabilities of a bush plane, the TUNDRA is offered in either a tail dragger or a tricycle gear configuration.

For Further Information Contact:

Dream Aircraft Inc.
565 Maisonneuve, Granby, Quebec, Canada, J2G 3H5
Tel : 866 500 9929 # 28, Fax : 450 372 8122
www.dreamaircraft.com

COMPOSITE MATERIALS

CM

INTRODUCTION

The use of composite materials in home built aircraft construction got its start back in 1970 when Ken Rand introduced his KR-1 and KR-2 kits. At the same time, a young designer named Burt Rutan was completing the design of his VariViggen which was awarded the Stan Dzik trophy for design contribution at Oshkosh in 1972. Although this aircraft featured some composite construction materials, it was fairly labor intensive to build and interest was modest. Taking the canard design concept a step further and simplifying construction through the use of the moldless composite technique, Burt educated thousands of builders and future designers through his plans, construction manuals, and many seminars and convinced aircraft enthusiasts worldwide that composites were indeed the future for aviation construction. Rutan Aircraft Factory followed the tremendous success of the VariEze kit program with plans for new designs such as the Long-EZ, Defiant, and Solitaire. At the same time, SCALED, Burt's new company specializing in design and prototype construction, was busy building proof-of concept aircraft such as the AD-1, Grizzly, and Beech Starship. Burt continues to operate SCALED today and remains active in designing and building the aircraft of tomorrow. We hope he will someday return to the homebuilt aircraft market, and arena that allowed him endless freedom to pursue aircraft design innovation.

During the 1980's many new designers entered the homebuilt aircraft market including Nat Puffer who introduced the popular Cozy, a side-by-side version of the Long-EZ. Aircraft Spruce & Specialty Co. became the distributor of Cozy kits as it had been for the Rutan designs since 1976. Hundreds of kits were shipped worldwide, and Aircraft Spruce grew as quickly as the composite movement. At the same time, Aircraft Spruce began supplying kits and materials to designers marketing their own new designs using the new "fast-build" pre-fabricated kit concept. This type of kit program was pioneered by Tom Jewett and Gene Sheehan of Quickie Aircraft and Tom Hamilton of Glasair fame. Many new designs followed, including Lance Niebauer's Lancair, Ken Wheeler's Express, the Cirrus and White Lightning. Aircraft Spruce has been a supplier of materials for all of these kit programs, and looks forward to working with the designers of new composite aircraft on their kit programs in the years to come. The design sophistication and ease of construction that are offered in composite aircraft kits today have provided a way for many aviation enthusiasts to build and fly higher performance aircraft at affordable prices. What an exciting time to be involved in sport aviation!

ADVANCED COMPOSITE FABRICS

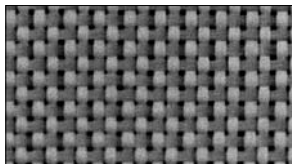
Advanced composite fabrics are those materials which have been used for a number of years in aerospace applications, replacing standard fiberglass fabrics. Today's materials - Kevlar, graphite, S glass and ceramics - are now making the transition from aerospace to homebuilt aircraft. Kevlar is an organic fiber which is yellow in color and soft to touch. It is extremely strong and tough and about the lightest structural fabric on the market today. Kevlar is highly resistant to impact but it is rather difficult to work with for hand layup applications and its compressive strength is considered poor. Graphite fibers are created by extreme stretching and heating of rayon fibers to change their molecular structure. Graphite has very low density (weight/unit volume), is very stiff (high modulus) and very strong (high tensile). S glass uses a different chemical formulation from standard E glass fabrics, and is stronger, tougher and stiffer than E glass. One ply of S glass can replace several plies of E glass, which can result in a stronger and considerably lighter aircraft component. Ceramic fabrics are the latest innovation in advanced composites. These fabrics produce laminates approaching the qualities of S glass plus they can withstand temperatures of almost 3000° F. Ceramic cloth can produce a very lightweight and effective firewall laminate, although at this time the cost is high. These advanced composite materials are currently being used in the production of such items as aerospace components, high-performance boats and race cars, and many revolutionary homebuilt aircraft such as the Long-EZ, Solitaire, Sea Hawk and Q200. The performance of future homebuilt aircraft will most certainly be incredible with the availability of these innovative new composite materials.

| | Best ← → Worst | | | | |
|--------------------------|----------------|----------|---------|----------|----------|
| Cost | E Glass | S Glass | Kevlar | Graphite | Ceramic |
| Weight (Density) | Kevlar | Graphite | S Glass | E Glass | Ceramic |
| Stiffness | Graphite | Kevlar | S Glass | Ceramic | E Glass |
| Heat | Ceramic | S Glass | E Glass | Kevlar | Graphite |
| Toughness | Kevlar | S Glass | E Glass | Ceramic | Graphite |
| Impact Resistance | Kevlar | S Glass | E Glass | Ceramic | Graphite |

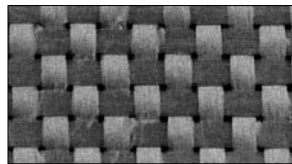
WHICH ONE DO YOU CHOOSE?

Often the choice of the materials to use for a laminate is difficult because of the required properties. One must consider the advantages of one material over another and its anticipated performance. S glass is about 30% stronger and 15% stiffer than E glass. It has 20-25% of the stiffness of graphite and is as strong, but it is also 30% heavier. S glass though, has only half the strength and stiffness of Kevlar and twice the weight. Kevlar on the other hand, is 40% stronger and 25% lighter than graphite but has only half the stiffness of graphite. Sometimes, blending different advanced composite fabrics in a laminate can achieve the proper balance of stiffness, strength and weight. Use the following six parameters listed here, from a best to a worst case, to help you decide which advanced composite fabric(s) is best for your application.

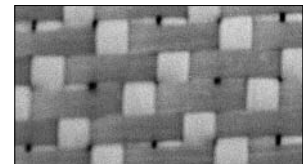
KEVLAR FABRIC STYLES



120-PLAIN-34x34

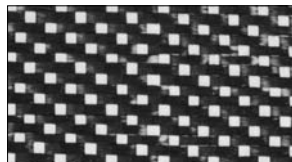


281-PLAIN-17x17

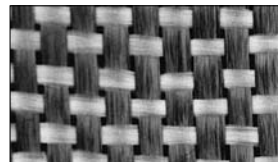


285-CROW FOOT-17x17

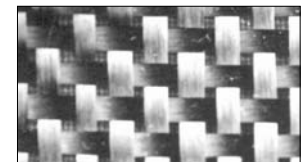
GRAPHITE FABRIC STYLES



AS4-HS4

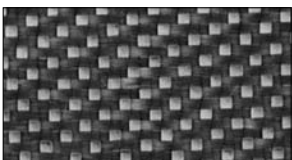


F3T282-PLAIN-12.5x12.5



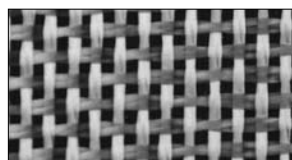
F3C716-PLAIN-16x24

CERAMIC FABRIC



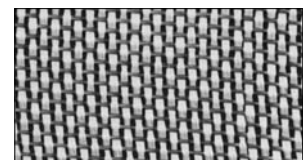
XC568-5H5-48X47

E-GLASS



7500-PLAIN-16X14

S-GLASS



4533-PLAIN-18X18

COMPOSITE MATERIALS

HELPFUL HINTS AND PRECAUTIONS

CM

It is important to have the entire work area including tables, foam, tools and working materials thoroughly warm before commencing. This may take 3-4 hours. An electric hair dryer may be used to warm local areas, being careful not to overheat the part or epoxy. When, due to cool temperatures, a part is slow to wet out, a few quick passes with a hair dryer will greatly speed the layup time. Do not use a hair dryer to heat a cup of epoxy. This can give local hot spots and ruin pot life.

The epoxy system components should be stored at room temperature. Never keep resin or hardeners in a cold place, even for long-term storage. If the resin appears to crystallize and settle out it should be returned to its normal state as soon as possible, even if prompt usage is not anticipated. Placing the container of resin in hot (160-190°F.) water for several hours will usually decrystallize it and return it to a clear state. Mild agitation will accelerate the process. Leaving the resin hot for 3-5 hours after it clears will reduce its susceptibility to recrystallize. Securely close containers after use.

Never attempt any layup below 70°F. since the higher viscosity of the resin will make it more difficult to wet out the cloth. Ideal working temperature is 85°F. Keep epoxy at 75° to 85°F. Never work outside in sunlight. It's acceptable to work in a shop with radiant heaters, as long as:

- 1.) The heat is diffused and the heat source does not become much hotter than the ambient.
- 2.) The heat is not provided by a source that generates particulates or aerosol hydrocarbons.

Never make a glass layup over a core that is not straight and smooth. The glass panel cannot take the loads if it has bumps or depressions in excess of the allowable values. A wrinkle, depression or bump in a layup which is greater than 1/16" high or low and which is more than 20% of the chord length or 20% of the spar chord is not acceptable and requires repair. A depression can usually be repaired by filling with floc to level and laying over the entire depression the amount of glass that is underneath, lapping outside the depression a distance equal to one inch per ply. Care should be taken not to lay up a depression or bump in the thick main spar caps. The transition of the spar caps into the wing fittings must be smooth and without joggles. These precautions apply only to the flying surfaces. The fuselage and fuel tanks can have relatively large depressions or bumps without affecting structural safety. Care should be taken in the finishing process not to sand through more than one ply on the structure.

Joining foam blocks - (1) Paint a coat of epoxy (no micro) on the joining surfaces. (2) Trowel a wedge of dry micro on the center of one surface. (3) Squeeze the joining surfaces together, wiggling them back and forth to obtain a thin micro joint less than 1/16" thick. It is desirable to have the micro about 3/8" low in the joint (not squeezed out). The low joint is filled with micro before glass is laid over the joint allowing a wet bond between the micro and the glass. If some does squeeze out, wipe the joint low with a mixing stick. Do not try to fill large voids with micro, as there is a possibility of exotherm damage. For a void larger than about 0.1", fill with a sliver of foam with micro on each side.

- A paper cutter is excellent for measuring and cutting the many little squares of glass cloth.
- Epoxy should be removed from metal tools or parts with acetone, MEK or soap and water before it cures.
- Micro slurry should not be applied to glass surfaces being bonded. This weakens the joint.
- Do not use Bondo on styrofoam, it has a polyester base which will dissolve the foam. Bondo will not attack urethane or PVC.

Precaution - Be sure layups are not dry, with air present (small flecks of white). Inspect thoroughly before leaving a wet layup. A cured layup that is too dry must be rejected.

Make sure that ample micro slurry is applied over the foam, particularly the urethane. Inadequate slurry allows air to remain under the first ply, decreasing laminate peel strength and surface durability.

Hot wire cutting - A good method to use for judging wire temperatures is the appearance of the cut foam surface. A cratered or rutted surface indicates the wire is too hot. A very light "hair" of plastic strands on the surface is just right. Always adjust the temperature so that the wire will cut one inch in 4 to 6 seconds with light pressure.

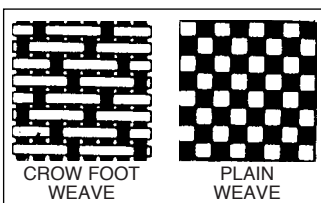
Exotherm foam damage - Care must be taken to avoid heavy buildups of epoxy/micro down inside a joint that is insulated by foam, such as the assembly of the wing cores. The gap to be filled by micro when assembling any foam cores should not be thicker than 1/16". In filling a gap greater than 0.1", excessive weight is added and, more importantly, the large mass of epoxy/micro insulated by the foam can exotherm. Heat resulting from the exotherm can be as high as 450°F., which will melt away the foam locally and destroy the joint. White is the recommended color for composite aircraft since it absorbs very little of the sun's heat (10%) while a black surface will heat up tremendously (95% absorption). Trim colors in noncritical areas are acceptable. Any good quality automotive enamel, lacquer, acrylic or polyurethane is acceptable. A primer-surfacer with an ultra-violet radiation barrier is recommended as an undercoating.

Caution: Do not ever wipe paint thinners on any part of the structure. Minute pin holes in the epoxy/glass skin can allow the thinners to penetrate down to the styrofoam, which dissolves in thinners.

QUALITY CONTROL

One of the unique features of the glass-foam-glass composite construction technique is the ability to visually inspect the structure from the outside. The transparency of the glass/epoxy material makes it possible to see all the way through the skins and even through the spar caps. Defects in the layup take four basic forms: (1) resin lean areas, (2) delaminations, (3) wrinkles or bumps in the fibers and (4) damage due to sanding structure away in finishing. Resin lean areas are white in appearance due to incomplete wetting of the glass cloth with epoxy during layup. The presence of minor white (lean) areas up to about 2 inches in diameter is not cause for rejection of the piece. Delaminations in a new layup may be due to small air bubbles trapped between plies during the layup. Small delaminations or bubbles up to 2" diameter may be filled by drilling a small hole into the bubble and filling the void with epoxy. Major wrinkles or bumps along more than 2" of chord are cause for rejection in the wings, canard and winglet on the VE, particularly on the top. In most cases the rejected part can be repaired by following the basic rule: Remove the damaged area and fair back the area at a slope of at least one inch per ply with a sanding block in all directions. Count the number of plies removed while sanding and replace with same, plus one more ply of BID over the entire patch.

WEAVE PATTERNS



The weave pattern describes the manner in which the warp yarns and the filling yarns are interlaced in the fabric. Plain Weave consists of one warp end woven over and under one filling pick. Plain weave is generally characterized by fabric stability with minimum pliability except at low fabric counts.

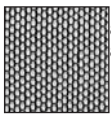
Crowfoot Weaves are constructed with one warp end weaving over three and under one filling pick. It is characterized as being more pliable than either plain or basket weaves, having conformability to complex or compound curved surfaces and making possible the weaving of higher counts than plain or basket weaves.

COMPOSITE MATERIALS

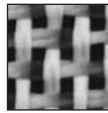
CM

STANDARD E-GLASS FIBERGLASS CLOTH

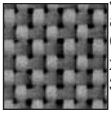
Fiberglass cloth is exactly what the name says - glass. Fine fibers are spun from molten glass marbles, gathered into yarn and woven into a strong, supple glass fabric. It can be folded, rolled or draped, like any other loosely woven fabric - but it can be chemically transformed into solid sheets of tremendous strength. All the fiberglass fabrics listed below are vulcanized for maximum strength and resistance to moisture and abrasion. They feature a weave that is tight enough for high strength, yet open enough for thorough wetting by resins.



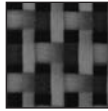
1.45 oz./sq. yd. Lightweight Industrial Cloth used in Osprey and other designs. Widely used by model builders, known as "Deck Cloth", Thread Count 60 x 47.
#1080 (P/N 1080-50) 50" Width..... yd



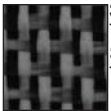
Weave. Thread Count 18 x 18. Breaking Strength 250 x 250 lb./in. Finished Weight 5.64 oz./sq. yd. Thickness .009" as used on KR Aircraft.
#7533 (P/N 7533-60) 60" /Width..... yd



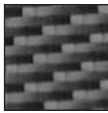
3.16 oz./sq. yd. Lightweight Industrial Cloth with aerospace applications. Excellent for model building. Only .004" thick. Crowfoot weave, which contours nicely. Thread Count 60 x 58. Breaking Strength 125 x 120 lb./in. Finished Weight 3.08 oz./sq. yd.
#120 (P/N 120-38) 38" Width..... yd



8.5 oz./sq. yd. Lightweight boat or tooling cloth. Threads per inch: 18L x 18W. Used in Osprey aircraft and other homebuilts.
#7520 (P/N 7520-50) 50" width yd



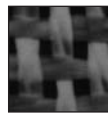
3.74 oz./sq. yd. Light weight Boat or Tooling Cloth. Tight plain weave. Thread Count 24 x 22. Breaking Strength. 160 x 135 lb./in. Finished Weight 3.60 oz./sq. yd. Thickness .0055"
#1522 (P/N 1522-50) 50" Width..... yd



8.95 oz./yd² Medium Weight Standard Industrial Cloth. 8 Harness Satin. Thread Count 57 x 54. Breaking Strength 350 x 330 lb./in. Finished Weight 8.95 oz./yd² Thickness 9.0 mils. Sold by the yard.
#7781 50" Width (P/N 7781-50) yd
#7781 60" Width (P/N 7781-60)..... yd

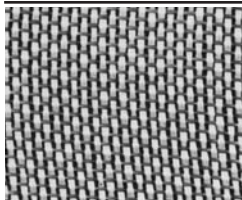


5.79 oz./sq. yd. Lightweight Boat Cloth. Flat weave, not twisted. Thread Count 18 x 18. Breaking Strength 250 x 225 lb./in. Finished Weight 5.85 oz./sq. yd. Thickness .010".
#3733 (P/N 3733-60) 60" Width..... yd



9.66 oz./sq. yd. Heavy Weight Boat or Tooling Cloth. Plain Weave. Thread Count 16 x 14. Breaking Strength 450 x 410 lb./in. Finished Weight 9.40 oz./sq. yd. Thickness .014".
#7500 (P/N 7500-60) 60" Width..... yd

5.85 oz./sq. yd. Lightweight Boat or Tooling Cloth. Plain

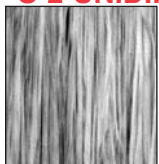


S-GLASS

The chemical formulation of S-glass differs from that of standard E-glass. Examples of E-glass are found in the Standard Fiberglass Cloth section of this catalog. S-glass is 30% stronger and 15% stiffer than E-glass and retains these properties up to 1500° F. S-glass is also considerably tougher than an equivalent E-glass. Other styles are available on request. Specify S-glass style when ordering. Sold by the yard.

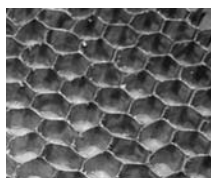
| Style | Part No. | Weight oz./Sq.Yd. | Width | Thick-ness | W x F | Weave | Price Per Lineal Yd. |
|-------|----------|-------------------|-------|------------|---------|-------|----------------------|
| 4533 | 4533-60 | 5.8 | 60" | .009" | 18 x 18 | Plain | . |

S-2 UNIDIRECTIONAL FIBERGLASS TAPES



A unidirectional fabric constructed with Owens-Corning Fiberglass S-2 Glass offering outstanding strength-to-weight ratio, superb glass-resin ratio control to minimize probability of resin-rich and/or resin-dry areas, handleability without distortion and exceptionally high impact resistance. The integrity of the S-500 is maintained through very fine, adhesive coated fill yarns that are bonded to but not interwoven with the unidirectional fibers of the S-2 Glass. The fill yarns are spaced approximately 1.5 inches apart. The use of short-nap paint rollers is suggested, rolling under pressure, always parallel to the fibers. Use with epoxies, vinyl esters and polyesters. Weight of fabric - 0.56 Lbs. per Sq. Yd. Tensile Strength (hand layup in polyester, air cured) - 128,000 PSI. Thickness .016". Sold by the foot.
11" Wide..... P/N 01-00336..... Ft

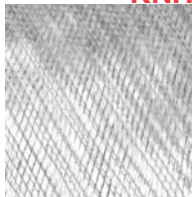
NOMEX HONEYCOMB



AHN 7800 is an Commercial Grade Nomex honeycomb particularly suited for use where resistance to corrosive attack and moisture are important. This material exhibits good strength characteristics and is fire resistant. It is available in a variety of cell sizes and densities to suit most purposes. Typical applications include lightweight non-structural bulkheads for ships, joiner panels, shelters, antennas, and auto body panels. This material is not intended for aircraft or aerospace applications. This material also exhibits good thermal insulation properties and also has good dielectric properties. This honeycomb is easily machined, formed, and shaped and well suited to adhesive bonding.

| Description | Part No. | Price |
|-------------------------------------|----------|-------|
| HONEYCOMB 1/8" THICK, 1/8" CELL 4X8 | 01-00487 | . |
| HONEYCOMB 1/8" THICK, 1/8" CELL 4X4 | 01-00489 | . |
| HONEYCOMB 1/4" THICK, 1/8" CELL | 01-01052 | . |

KNITTED E-GLASS FABRIC



Knitted fabrics are a relatively new format in composites. The performance of the glass is greatly enhanced by removing the interstices of the woven fabric and the crimped condition. E-glass in woven goods normally has 22,000 psi tensile strength. Layered non-woven goods give 27,000 psi which is about a 20% improvement. Knitted glass offers greater ease of fabric orientation and saves time over multi-layered wet lay-ups.

| Part No. | Weight/sq yd | Width | Ply Thickness | Price/yd |
|-------------------------------------|--------------|-------|---------------|----------|
| Biaxial - Double Bias +/-45° | | | | |
| 01-00640 | 17.6 oz | 50" | 17.0 mil | . |
| Uni-Directional | | | | |
| 01-00650 | 1.5 oz | 50" | | . |



GLASS MAT

100% Fiberglass in a non-woven state. It is used for bulk "build-up" in molding and fabricating components. Also useful for filling holes and badly damaged parts. 1.5 Oz. Weight. 38" Width.
P/N 01-06500...../Yd



GRADE B COTTON FABRIC

Grade "B" cotton is manufactured to the specification of Grade "A" cotton - with the same thread count, burst strength and shrink characteristics - but has either not been tested for compliance with MIL-C-5646 or has failed the test in the some aspect. Consequently we do not recommend that it be used for covering anything but a static display.
P/N 09-01730.....

COMPOSITE MATERIALS

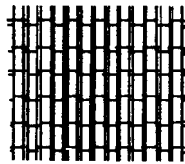
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RUTAN FIBERGLASS CLOTHS

The most basic structural material in building a composite aircraft is glass cloth. The use of glass in aircraft structures, particularly structural sandwich composites, is a recent development. Glass cloth is available commercially in hundreds of different weights, weaves, strengths and working properties. Very few of these, however, are compatible with aircraft requirements for high strength and light weight. Even fewer are suitable for the hand-layup techniques developed by Burt Rutan for the homebuilder. The glass cloth featured here has been specifically selected for the optimum combination of workability, strength and weight. Two types of glass cloth, a bi-directional cloth (RA7725BID) and a uni-directional cloth (RA7715 UND) are used. BID cloth has half of the fibers woven parallel to the selvage edge of the cloth and the other half at right angles to the selvage, giving the cloth the same strength in both directions. UND cloth has 95% of the glass fibers woven parallel to the selvage, giving exceptional strength in that direction and very little at right angles to it. BID is generally used for pieces which are cut at a 45° angle to the selvage, a bias cut, which enables the builder to lay BID into contours with very little effort and provides the needed shear and torsion stiffness for flying surfaces. UND is used in areas where the primary loads are in one direction, such as wing skins and spar caps. Multiple layers of glass cloth are laminated together to form the aircraft structure. Each layer of cloth is called a "ply".

UNIDIRECTIONAL P/N RA7715
7 Oz. 38" Width Threads per inch:
80L x 18W .Lineal Yd.

Small Cross Fibers



Selvage Edge

Major Fiber Bundles

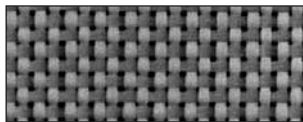


Selvage Edge

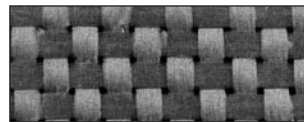
BIDIRECTIONAL P/N RA7725
8.8 Oz. 38" Width Threads/inch:
54L x 48W . Lineal Yd.

Quantity Discount: 15% on 500 Yds or more. Yardage must be on one fabric for discount, not combined. Discount on larger quantities quoted on request

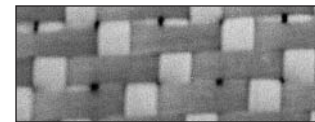
BIDIRECTIONAL WOVEN KEVLAR



STYLE 120



STYLE 281



STYLE 285

"Kevlar" 49 aramid fiber was introduced commercially in 1972 and is the Du Pont registered trademark for its new high strength, high modulus organic fiber. It combines high tensile strength (43,000 PSI) and high modulus (19 million PSI) with light weight and toughness superior to other reinforcing fibers for plastics. It is available in yarns and rovings which meet all FAA requirements for flammability. It shows no degradation in jet fuel, lubricating oils, water, salt water or high humidity. At cryogenic temperatures (-320°F.) performance is excellent with essentially no embrittlement or degradation of fiber properties. Kevlar 49 can offer both a significant weight saving and improved stiffness versus glass in addition to superior vibration damping and good impact resistance. A kayak made with Kevlar 49, for example, weighs about 18 pounds while the weight of a comparable boat made with glass would be over 30 pounds. The advantages over glass in small aircraft are similar - weight savings and improved impact resistance. Kevlar 49 is used in a number of parts on the Lockheed L-1011 because of weight savings of up to 30% compared to similar parts made of glass. One unusual benefit of Kevlar is its "quietness". A cowling made of Kevlar will be quieter and less sensitive to engine vibrations than its glass or graphite counterpart. Although all of the processes used in combining resins with glass fiber are adaptable to Kevlar 49 with little or no modification. The vinyl estertype system is compatible, but the use of polyesters is not recommended because of poor bonding with Kevlar. The epoxy resin systems featured in this catalog are compatible with Kevlar 49 and have good wetting characteristics.

Kevlar 49 is stocked in three different fabric styles. Kevlar #120 is a very lightweight fabric, while #281 and #285 are identical except for the weaving pattern. Other weights and weaves of Kevlar are available on a special order basis. Be sure to specify the Kevlar style when ordering.

| Style | Part No. | Oz./ Sq.Yd | Weight Width | Thickness | W x F | Weave | Breaking Strength Lbs/Inch | | Price Per Lineal Yd |
|-------|----------|------------|--------------|-----------|---------|-------|----------------------------|------|---------------------|
| | | | | | | | Warp | Fill | |
| 120 | 01-38100 | 1.8 | 38" | .0035" | 34 x 34 | Plain | 260 | 250 | . |
| 281 | 281-38 | 5.0 | 38" | .010" | 17 x 17 | Plain | 625 | 650 | . |
| 285 | 285-38 | 5.0 | 38" | .010" | 17 x 17 | Crow | 630 | 650 | . |

Quantity Discount: 10% on 25-50 Yds. %; 15% on 50-100 Yds.; 20% on over 100 Yds.

UNIDIRECTIONAL KEVLAR



KS-400 is a unique unidirectional reinforcing material combining the benefits of Kevlar 49 with Owens-Corning Fiberglass S-2 Glass. Designed for use in laminates which must have high modulus or stiffness and tensile strength combined with low weight or density. Specifically constructed to enhance properties of wet-out behavior, bondability and impact strength in a hand laid-up composite. As compared with woven fabrics of pure Kevlar, KS-400 should produce laminates with better fiber-resin ratios and superior stiffness. The integrity of KS-400 is maintained through very fine, adhesive coated Dacron fill yarns that are bonded to, but not interwoven with, the unidirectional fibers. Only vinyl esters or epoxies should be used as impregnating resins. The presence of the S-2 Glass enables the fabricator to determine visually when the material is properly wet out. Resin bond is far superior to the glass than to the Kevlar. This means increased resistance to delamination. Also the presence of the S-2 Glass even in such a relatively small amount increases the impact strength of the laminate significantly. In application, it is important that the fabricator does not confuse the appearance of the cross-direction adhesive binder with air bubbles. The impregnating resin will soften this adhesive and it will flow slightly. The adhesive shows up as milky areas on both sides of the fabric within the finished laminate. A gel coat or paint covers these areas effectively. 12" Wide P/N 01-00340 Ft

10% Discount on 50 ft. (4 lbs) • 20% Discount on full roll, 300 ft. (24 lbs)

OFFSET KEVLAR CUTTING SHEARS



Although Kevlar has many advantages over conventional fiberglass weaves, it is very difficult to cut. Special scissors have been developed to facilitate cutting. These scissors have a wear-resistant coating which is metallurgically bonded

to the steel substrate. The coating will not chip or peel off and can be sharpened.

Model WR-10E-4 Shears P/N 01-00341

Quantity Discount: 10% on 6, 15% on 10

INDUSTRIAL FABRIC SHEARS



Wiss No. 20W heavy-duty shears, ideal for cutting fiberglass cloth and all fabrics. Hot drop-forged steel.

Right Hand Shears..... P/N 01-00397
Left Hand Shears..... P/N 01-00398

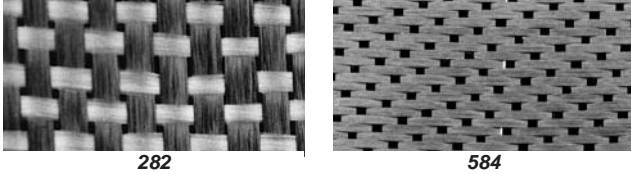
ECONOMY KEVLAR SCISSORS - GINGER® Scissors cut Kevlar exceptionally well. Lightweight, extremely sharp and comfortable, these 2 1/2 oz. scissors are perfect for use during the lay-up. Soak in acetone for easy clean-up. We recommend saving one pair for only cutting Kevlar®, and keep ing a second pair for general use.

P/N 01-00342.....

CARBON GRAPHITE

CM

BIDIRECTIONAL WOVEN CARBON GRAPHITE



Woven graphite is a fabric introduced in recent years which has become an excellent alternative to fiberglass and Kevlar - only mills thick with great strength. In addition to its great strength, graphite fabric also has very low density and is very stiff. Although it is quite costly, the material saving is appreciable since only one course of graphite is required for 3 or 4 of fiberglass. It cuts considerably easier than Kevlar. Graphite "Prepregs", which are standard graphite weaves impregnated with either polyester or epoxy resins, have been used by major manufacturers to cut production time on composite parts. The required equipment and precise production controls for proper cure of prepregs make them difficult to adapt to homebuilt applications. The excellent qualities of the graphite fabric itself give it an immediate waiting market in the aircraft building field.

Graphite fabric is stocked in the three different styles shown below. Other weights and weaves of graphite are available on a special order basis. Be sure to specify the graphite style when ordering. These carbon graphite cloths are not pre-preg fabrics. * **Warning folding for shipment can damage the filaments in the fabric. Folding will be done at customers risk and request only.**

| CARBON FIBER | | | | | | | | |
|--------------|----------|-------------------|-------|------------|-----------|-------|-------------------|------------|
| Style | Part No. | Weight Oz./Sq Yd. | Width | Thick-ness | W x F | Weave | Breaking Strength | Price /yd. |
| 282 | 01-00970 | 5.8 | 39" | .007" | 12.5x12.5 | Plain | 300/300 | . |
| 282 | 01-00971 | 5.8 | 50" | .007" | 12.5x12.5 | Plain | 300/300 | . |
| 282 | 01-28260 | 5.8 | 60" | .007" | 12.5x12.5 | Plain | 300/300 | . |

| TWILL 2 X 2 WEAVE | | | | | | | | |
|-------------------|----------|-------------------|-------|------------|---------|-----------|-------------------|------------|
| Style | Part No. | Weight Oz./Sq Yd. | Width | Thick-ness | W x F | Weave | Breaking Strength | Price /yd. |
| 284 | 01-00972 | 5.8 | 50" | .007" | 12 x 12 | 2x2 Twill | n/a | n/a |
| 284 | 01-00602 | 5.7 | 50" | .007" | 12X12 | 2/2 Twill | n/a | n/a |

| 8HS WEAVE | | | | | | | | |
|-----------|----------|-------------------|-------|------------|-------|-------|--------------------|------------|
| Style | Part No. | Weight Oz./Sq Yd. | Width | Thick-ness | W x F | Weave | Break-ing Strength | Price /yd. |
| 584 | 01-00626 | 11 | 42" | .013" | 24x24 | 8HS | 650/650 | . |

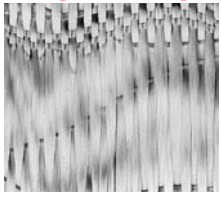


STANDARD E-GLASS & FIBERGLASS TAPES

Tapes are woven from 8.7 oz./sq. yd. fiberglass cloth, .012" thick, into narrow widths with non-raveling selvage. Perfect for glassing seams, corners, edges fan for repair jobs. Sold in 50 yd. rolls.

| | | |
|-------------------------------|--------------|------|
| 1" Width 26 Warp, 17 Fill | P/N 01-06610 | Roll |
| 1-1/2" Width 32 Warp, 17 Fill | P/N 01-06615 | Roll |
| 2" Width 40 Warp, 17 Fill | P/N 01-06600 | Roll |
| 3" Width 58 Warp, 17 Fill | P/N 01-06700 | Roll |
| 4" Width 76 Warp, 17 Fill | P/N 01-06705 | Roll |
| 6" Width 106 Warp, 17 Fill | P/N 01-06710 | Roll |
| 12" Width 218 Warp, 17 Fill | P/N 01-06720 | Roll |

UNIDIRECTIONAL FIBERGLASS TAPE



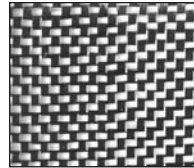
This is a fibrous glass reinforcement designed to furnish exceptionally high directional strength. Manufactured from parallel strands of glass roving which are held together by a fine woven cross thread. The placement of the cross thread is such that the parallel rovings do not wander or have a tendency to cross over each other. This 100% unidirectional tape can be used instead of unidirectional fabric for spar caps, wings and elevators. Contours well and cuts building time considerably. Wt. 22 oz./sq. yd., 0.025" thick. May be used with either polyester or epoxy systems. Used on Polliwagen. Long-EZ, Cozy. Adventure and applicable to all composites.

3" Wide P/N 01-06800..... Yd.

UNIDIRECTIONAL CARBON GRAPHITE

Construction is such that the fibers are oriented in a straight or linear manner with no twist and are able to be maintained in that condition while being impregnated by hand. The fabric is formed from rovings or "tows" of fibers similar to that used in making woven fabric. These fibers are locked into position by very fine fill (or cross machine direction) fibers which are encapsulated with an adhesive which is compatible with common impregnating resins. These fill fibers and the encapsulating adhesive will be visible in any clear resin. The resulting "pattern" is normal and should not be interpreted as poor wet-out of the reinforcing fibers. For hand lay-ups, resin may be applied by spray, brush or by pouring action. A short napped paint roller is recommended for spreading the resin. Excess resin should always be rolled out in a direction parallel to the graphite fibers. The final or external layer should be applied with the fill yarns facing down (unexposed). Satisfactory for use with epoxies, polyesters, vinyl esters and other resins. The fabric is rolled with a polyethylene interliner to maintain cleanliness. Care and cleanliness should be practiced when working with Graphite materials. Unattached graphite fibers are easily airborne. A filter mask should be worn when cutting and fabricating. Itching & irritation caused by broken filaments becoming imbedded in the skin can result from filament breakage during handling.

This graphite fabric is similar to the bidirectional woven graphite described above but is a unidirectional weave using standard 3000 tow graphite warp and 75-1/0 fiberglass fill .

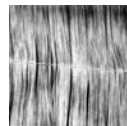


UNIDIRECTIONAL GRAPHITE FULL WIDTH ROLLS

Sold by the yard.

| Style | Part No. | Weight Oz. Sq.Yd. | Width | Thick-ness | W x F | Weave | Tensile Strength Lbs./Inch Warp Fill | Price per Lin. Yd. |
|-------|----------|-------------------|-------|------------|---------|-------|--------------------------------------|--------------------|
| 716 | 716-38 | 4.7 | 38" | .006" | 16 x 24 | Plain | 550 125 | . |

Qty. Discount: 10% on 25-50 Yds.; 15% on 50-100 Yds. 15%; 20% over 100 Yds



GRAPHITE FIBER TAPES

- **Tensile Strength** - 54,000 PSI/in. width
- **Weight** - 0.033 Lb./Sq.Ft.
- **Thickness** - 0.012" Laminated

5" Wide P/N 01-06200..... /Foot

25% Discount on full roll of 250 ft.

12" Wide P/N 01-06300..... /Foot

15% Discount on 12"W x 50' Roll & 25%

Discount on 12"W x 300' Roll



UNIDIRECTIONAL CARBON TAPES

These carbon fiber tapes are used to add stiffness and tensile strength in one direction without adding significant thickness or weight. These West System tapes have 12 carbon fiber bundles per inch of tape width. The bundles are held together with a polyester fill thread making the tape easy to handle. These tapes are compatible with epoxies but not with vinylester or polyester resins. #702 tape is 1.5" wide and #703 tape is 3" wide.

| Style No. | Width (in.) | Length | Part No. | Price/roll |
|-----------|-------------|------------|----------|------------|
| 702 | 1.5" | 12 ft.roll | 01-00238 | . |
| 702 | 1.5" | 50 ft.roll | 01-00239 | . |
| 703 | 3" | 12 ft.roll | 01-00240 | . |
| 703 | 3" | 50 ft.roll | 01-00241 | . |

CARBON FIBER TUBING



Aircraft Spruce offers structural tubing and structural torsion tubing, engineered and built to meet your exact specifications and tolerances. Structural Torsion Tubing, in continuous lengths up to 40', is manufactured with the computer-controlled, fully-automated Helical Winding Process. We offer a broad array of Fiber Options and tubing wall thickness and diameter is determined on a case-by-case basis to suit your application. **Special Order Sold in 10 ft. lengths only (can cut for UPS shipment).**

| D of Tube | Wall Thickness | Length | Part No. | Price |
|-----------|----------------|--------|----------|-------|
| 0.5" | .100 | 10' | 03-00171 | . |
| 0.75" | .100 | 10' | 03-00172 | . |
| 1.00" | .120" | 10' | 03-00173 | . |
| 1.25" | .120" | 10' | 03-00174 | . |
| 1.5" | .120" | 10' | 03-00175 | . |
| 1.75" | .120" | 10' | 03-00176 | . |
| 2" | .120" | 10' | 03-00177 | . |
| 2.5" | .120" | 10' | 03-00178 | . |
| 3" | .120" | 10' | 03-00179 | . |

GRAPHITE – LAMINATING EPOXIES

CM

CARBON GRAPHITE YARN TOW



High strength (470,000 PSI) carbon fibers are used as reinforcement in high performance structural composites for aircraft applications, recreational and industrial products. Carbon fiber filaments are finer than a human hair. These filaments are bundled

together to make a fiber of 3,000, 6,000 or 12,000 filaments which is called a "tow". The tow is sized with an epoxy compatible material to improve the handling characteristics. It is then wound on a cardboard core holding from 4 to 6 pounds of fiber. 1 Lb. spool.

| Actual Size | Part No. | Approx. Yield | Roll Size | Price/Spool |
|-------------|----------|---------------|-----------|-------------|
| 3K Tow | 01-00343 | 2470 Yd./Lb. | 4 Lb. | . |
| 6K Tow | 01-00307 | 1229 Yd./Lb. | 1 Lb. | . |
| 6K Tow | 01-00955 | 1229 Yd./Lb. | 1.5 Lb. | . |
| 12K Tow | 01-00345 | 621 Yd./Lb. | 4 Lb. | . |

It appears that the 6K tow will prove most practical for homebuilding applications. This size will be available in the small units shown. The 3K and 12K sizes are offered in full spools only. The 3K tow is used primarily by weavers. The 12K is difficult to wet out but can be done by diligent brushing.



S-GLASS ROVING FILAMENTS

This is the S-Glass Strand (roving) used by Rutan Aircraft Factory on the Defiant homebuilt kits. Also applicable to other homebuilt aircraft applications. Defiant requires four 15lb. rolls of S-Glass Strand.

One 15 Lb. Roll P/N 01-06400

KEVLAR 49 ROVING



Unidirectional Aramid fiber roving. Type 968, 7100 denier, comprised of five strands of 1420 denier. Used in the popular geodesic dacron kayaks and boats by Platt Monfort, this roving has a wide variety of applications.

300 Ft. Roll P/N 968

FOUR-MINUTE EPOXY



Epoite 9935 is a clear, 2 component room temperature curing easy-to-mix liquid epoxy system with a four minute gel time. It is an excellent adhesive for composite and wood applications, has very low shrinkage, and provides excellent machinability. Shelf life: 1 year.

P/N 01-07700

SYSTEM THREE QUIKFAIR EPOXY FAIRING PUTTY



Lightweight, micro ballooned filled, fast curing 2-part epoxy fairing putty with excellent moisture resistance. Use on both fiberglass and wood epoxy structures above or below the waterline. At 70° F it is sufficiently cured to be hand sanded in 3 hours or machine sanded in 4 hours. This allows you to apply 3 coats in a standard 8 hour shift or 6 in a round the clock basis. Complete a fairing or filleting job in a day rather than 3 or 4 days. NOTE: QuikFairs warm butter-like consistency makes it easy to measure by weight. Use care when measuring by volume as QuikFair does not self-level and may trap air pockets. As QuikFair is fast curing the working time is short. Mix no more than can be applied within 10 minutes.

24 oz. Kit P/N 01-00404

1-1/2 qt. Kit P/N 01-00405

EPOXY PREMIUM PIGMENTS



These Premium Pigments are a paste to tint polyester, vinyl ester, epoxy resin, and polyurethane. Add about 6% to 8% of pigment by weight or 1/2 pint of pigment per gal. of resin.

White - 1 oz. P/N 01-45308

White - 8 oz. P/N 01-45501

Black - 1 oz. P/N 01-45319

Black - 8 oz. P/N 01-45512

JEFFCO EPOXY LAMINATING SYSTEM



1307 Low Viscosity Resin / 3102 Fast Hardener - 100% solids 2-component epoxy laminating system with excellent wet out, low viscosity and high strength. Very low odor and toxicity. Easy to use, 4:1 weight or volumetric mixing, safe, fast curing products for a variety of use applications. Used for fast curing, penetrating wood coatings, adhesives and sealers, fiberglass laminating and microsphere filled fairing compounds. Excellent cold temperature cures down to 40°F. No solvents or VOC's. Non-hazardous, non-corrosive hardener.

3176 30-minute Medium R/T Epoxy Hardener - Fast setting, even in thin films. Good low temperature cure. Fast wetting of fiberglass reinforcements. Easy to use 4:1 mix ratio. High HDT at room temp, increasing with post cure. Low toxicity, very low odor. Non-hazmat.

Low Viscosity Laminating Resin

1307 LV, Pail (40 lbs) P/N 01-07917

1307 LV, Gallon (8 lbs) P/N 01-07914

Fast Hardener

3102, Pail (40 lbs) P/N 01-07920

3102, Gallon (8 lbs) P/N 01-07918

3102, Quart (2 lbs) P/N 01-07915

Medium Hardener

3176, Pail (40 lbs) P/N 01-07921

3176, Gallon (8 lbs) P/N 01-07922

3176, Quart (2 lbs) P/N 01-07923

KITS - Jeffco Epoxy, 1 gal. kit, fast P/N 01-07916

Jeffco Epoxy, 5 gal. kit, fast P/N 01-07919

Jeffco Epoxy, 1 gal. kit, medium P/N 01-07924

Jeffco Epoxy, 5 gal. kit, medium P/N 01-07925

AEROPOXY LIGHT PATCHING/FILLER COMPOUND



Aeropoxy Light, a modification of the ES6279 adhesive system, is a 2-component paste epoxy patching and filler compound for foam, wood, fiberglass and other surfaces. The mixed consistency of this system is very smooth and creamy, so it spreads easily, and can be spliced to a feather edge without separation. It is a thixotropic, non-sag material that will remain in place in thick sections, even when applied upside down! The resin and hardener of this system are color coded for easy mixing.

The resin is white and the hardener is brown, giving a good visual indication of complete mixing with a uniform tan color free of streaks. AEROPOXY LIGHT has special low density fillers incorporated into it that provide very distinct benefits. It is a very light material (4 pounds per gallon), and therefore contributes minimal added weight to the filled or repaired structure. Also, the cured material is very easy to sand, making the finished patch undetectable when covered or painted. There are no volatile ingredients in AEROPOXY LIGHT, so the cured material will not outgas, which could cause a loss of adhesion of paint or coverings. Sold in kits of part A & B.

1-1/2 lb. Kit P/N 02-30006

6 lb. Kit P/N 02-30007

IMPACT RESISTANT LAMINATING EPOXY



DLRH-3212 is an unfilled, clean epoxy resin system with a long pot life. DLRH-3212 is a tough, strong, impact resistant resin with chemical resistance. It has excellent wetting quality on kevlar, carbon graphite and fiberglass cloth. Used extensively in construction of aircraft, race cars, motorcycles, helmets and sports equipment. Mixing Ratio by Wt: 100:30; Pot Life (200 Gm MASS) 60 Min; Tensile Strength @ 25 C 12,500; Flexural Modulus @ 25 C 40,900; Heat Deflection 325 F; Thermal Shock 72°F-125°F; Shore "D": 80, Density: Resin: 9.7, Hardener: 7.9, Mixed: 9.1; Shelf Life: Resin/ Hardener 1 Year.

Qt Kit P/N 01-00430

Gal Kit P/N 01-00431

5 Gal Kit P/N 01-00432

EPOXY LAMINATING SYSTEMS

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POLY EPOXY STRUCTURAL EPOXY SYSTEM

Poly Epoxy is a true high-performance epoxy resin with unmatched tensile, compressive, and flex strengths. It also has unbeatable peel, shear, and fatigue resistance, as well as impact strength and fracture behavior. It's great for wings, canards, fuselages, tail feathers, and landing gear. Use it in molds or moldless construction. It parts easily and works beautifully in vacuum bagging. (Avoid silicone-treated peel ply.) It has TWO cure phases, while all other resins—epoxy, polyester, or vinylster—have just one. The two phases occur all by themselves during the curing process. The resulting bond is tougher and stronger than any other.

Poly Epoxy Kit, quart P/N 01-07905
Poly Epoxy Kit, gallon..... P/N 01-07906

POLY EPOXY TECHNICAL DATA

| Mechanical Properties: | w/Post Cure | w/o Post Cure |
|--|-------------|---------------|
| Tensile Strength, psi | 9600 | 8800 |
| Elongation at Break, % | 7.5 | 3.6 |
| Tensile Modulus, psi | 470,000 | 460,000 |
| Flexural Strength, psi | 19,000 | 14,500 |
| Flexural Modulus, psi | 515,000 | 500,000 |
| Compressive Strength, psi | 32,000 | 33,000 |
| Shore D Hardness | 82 | 70 |
| Glass Transition Temp., °C | 72 | 62 |
| Heat Distortion Temp., °C | 64 | 50 |
| Water Immersion Weight Gain, % (140 °F, 30 days) | 2.8 | 2.9 |

Rheology: Mixing Ratio:3 parts Resin to 1 part Converter by Weight 10 parts Resin to 4 parts Converter by Volume

Kinetics:

Pot Life, 100 grams 105 mins 1 quart.....75 mins
Mold Open Time.....3-4 hrs Tack Free Time.....5-6 hrs

AVAILABLE EXCLUSIVELY FROM AIRCRAFT SPRUCE



ALPHA POXY NON-STRUCTURAL EPOXY SYSTEM

AlphaPoxy is a low-cost flexible epoxy system that is ideal for laying up non-structural parts like wheel pants, or fairings. Because it is flexible, we don't recommend it for structural applications, such as fabricating load-bearing structural aircraft parts. Use PolyEpoxy for these applications. This is a low-viscosity system specifically formulated for filling with microballoons, cotton floc, or milled glass fibers to make slurries. It was designed for maximum sandibility; when cured, it is soft enough to be easily cut with sandpaper smoothing a breeze. AlphaPoxy

is also excellent when used as a final filler resin over structural parts when an epoxy gel coat is called for. You can use it in place of polyester resins for a much more durable part at a very attractive price. AlphaPoxy uses a non-MDA hardener that allows us to ship it as non-hazardous material.

AlphaPoxy Kit, 1-1/4 gallon P/N 01-07911
AlphaPoxy Hardener, gallon..... P/N 01-07909.....
AlphaPoxy Resin, 7/8 gallon P/N 01-07912.....
AlphaPoxy Hardener, 5 gal. pail..... P/N 01-07910.....

AlphaPoxy Hardener, 3/8 gallon P/N 01-07908.....
AlphaPoxy Resin, 5 gal. pail P/N 01-07913.....
Rheology: Mixing Ratio:

2 parts Resin to 1 part Hardener by Weight

AVAILABLE EXCLUSIVELY FROM AIRCRAFT SPRUCE



E-Z POXY EPOXY LAMINATING SYSTEMS

In early 1996, Composite Design Co. developed E-Z Poxy to provide a replacement epoxy system for Epolite (Safe-T-Poxy) which is no longer produced by Hexcel. The E-Z Poxy series of laminating systems utilizes one resin and your choice of three hardeners for varying pot life and viscosity requirements. The E-Z Poxy systems offer the same handling and physical properties as the discontinued Epolite systems including ease of use, long pot life, rapid cure for demold or process continuation, and superior room temperature curing properties. Excellent for use in sport aviation, marine, and industrial applications. E-Z 83 hardener is equivalent to Safe-T-Poxy standard hardener, E-Z 84 is equivalent to Safe-T-Poxy II hardener, and E-Z 87 is equivalent to Safe-T-Poxy slow hardener. E-Z Poxy products should not be mixed with materials produced by other epoxy manufacturers.

E-Z POXY PRICE LIST

| Description | Part No. | Price |
|---------------------------------|----------|-------|
| E-Z Poxy 1-1/2 gal. kit* | 01-07850 | . |
| E-Z Poxy 5 gal. kit** | 01-07950 | . |
| E-Z Poxy 1-1/2 qt. kit | 01-08050 | . |
| E-Z Poxy II 1-1/2 gal. kit* | 01-08850 | . |
| E-Z Poxy II 5 gal. kit** | 01-08950 | . |
| E-Z Poxy 1 gal. resin | 01-00245 | . |
| E-Z Poxy 5 gal. resin | 01-00246 | . |
| E-Z Poxy 1/2 gal. hardener | 01-00247 | . |
| E-Z Poxy II 1/2 gal. hardener | 01-00248 | . |
| E-Z Poxy 2-1/2 gal. hardener | 01-00249 | . |
| E-Z Poxy II 2-1/2 gal. hardener | 01-00250 | . |
| E-Z Poxy 5 gal. hardener | 01-00251 | . |
| E-Z Poxy II 5 gal. hardener | 01-00252 | . |
| E-Z Poxy slow 1/2 gal. hardener | 01-00253 | . |

* 8 lbs. resin, 3.5 lbs hardener ** 40 lbs. resin, 18 lbs. hardener

E-Z POXY TECHNICAL DATA

E-Z POXY RESIN SYSTEMS FROM COMPOSITE POLYMER DESIGN

| E-Z 10 Epoxy Resin Hardener | E-Z 84 Aromatic Amine Hardener | | |
|---|-----------------------------------|-----------------------------|--------|
| | E-Z 83 Aromatic Amine Hardener | E-Z Aromatic Amine Hardener | |
| E-Z 10 Resin (Viscosity* 1500 cps @ 77F with: | | | |
| Hardener | EZ 83 | EZ 84 | EZ 87 |
| Mixed Properties: | | | |
| Mixed Viscosity cps @ 77F* | 1300 | 800 | 1500 |
| Viscosity Hardener cps @ 77F* | 410 | 140 | 830 |
| Pot Life @ 77F | 2 hrs. | 2 hrs. | 5 hrs. |
| Tack Free @ 77F | 4 hrs. | 8 hrs. | 8 hrs. |
| Cure Time @ 77F | 24 hrs. | 3 days | 3 days |
| Mix Ratio by Volume | 100/47 | 100/47 | 100/47 |
| Mix Ratio by Weight | 100/44 | 100/44 | 100/44 |
| Physical Properties Tg (F): | | | |
| R/T | 151 | 151 | 142 |
| P/C* | 196 | 196 | 196 |
| Elongation % | 3.5 | 3.5 | 3.9 |
| Specific Gravity | 1.14 | 1.13 | 1.14 |
| Linear Shrinkage @ 23C (4 days %) | .10 | .10 | .10 |
| Tensile Strength PSI | | | |
| R/T | 8,200 | 8,100 | 8,400 |
| P/C | 10,000 | 10,000 | 10,000 |
| Tensile Modulus (PSI x 10 -5) | | | |
| | 4.8 | 4.2 | 4.0 |
| * Viscosity may vary +/- 10% | | | |
| *Post Cure for 2 hrs. @ 150F | | | |

E-Z Poxy systems provide excellent room temperature curing systems for hand layup of composite parts and tooling. The systems are designed to provide ample working time with the varied pot life options while providing a rapid finish cure. Post curing these systems will increase their physical properties as designated in the above data, however, post cure is not required.

POLYESTER GEL COATS



These polyester gel coats can be used as the surface of new fiberglass parts layed up in molds or used in the repair of gel coat surfaces on fiberglass parts. On surface repairs, the gel coat must be sealed to fully cure. PVA can be used to seal the gel coat.

| Color | Size | P/N | Price | Color | Size | P/N | Price | Color | Size | P/N | Price |
|-------|--------|----------|-------|-----------|--------|----------|-------|-------|--------|----------|-------|
| Black | Pint | 09-01668 | . | Dark Blue | Pint | 09-01670 | . | Clear | Pint | 09-02159 | . |
| | Quart | 09-01666 | . | | Quart | 09-01671 | . | | Quart | 09-02160 | . |
| | Gallon | 09-01667 | . | | Gallon | 09-01672 | . | | Gallon | 09-02161 | . |
| White | Pint | 09-01669 | . | Red | Pint | 09-01673 | . | | | | |
| | Quart | 09-01664 | . | | Quart | 09-01674 | . | | | | |
| | Gallon | 09-01665 | . | | Gallon | 09-01675 | . | | | | |

EPOXY LAMINATING SYSTEMS

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POLYESTER RESINS



Polyester resins are hygroscopic (they draw moisture from the air). There are two types of resin, and one or both types may be required, depending on the application. Type "A" resin has a small amount of wax in it, which comes to the surface and forms a barrier against the moisture. This permits the resin to cure completely and the surface is hard and easily sanded. Bond Coat "B" resin does not have any wax content. As a result the surface stays a little tacky, as the surface cure is being inhibited by moisture. This tacky surface provides excellent adhesion between coats. Bond Coat resin is therefore recommended for the first coat

of resin to fill the weave of the glass cloth, for bonding fiberglass cloth to plywood or other surfaces and for multi-layers of glass cloth.

TYPE "A" RESIN

#1520-5 is a general purpose ortho surfacing resin intended for the finishing coat applied over the Bond Coat #1063-5, or for single coat application. A second coat may be applied after full cure and thorough sanding but is not recommended.

| | |
|---|--------------------|
| Polyester Resin #692 Quart | P/N 01-00346 |
| 1 Gal. #1520-5 with 1 Oz. Catalyst | P/N 01-00347 |
| 5 Gal. #1520-5 with 4 Oz. Catalyst | P/N 01-00348 |
| Additional catalyst may be required. 1 Oz. | P/N 01-06900 |
| 4 Oz. | P/N 01-07325 |

TYPE "B" RESIN

#L253T-20 is a general purpose bond coat ortho resin for use in making multi laminates. It will not cure to a high gloss finish. Use 1520-5 for finish coat to obtain smooth, hard gloss finish. Replaces #1063-5.

| | |
|--|--------------------|
| 1 Gal. #L253T-20 with 1 Oz. Catalyst | P/N 01-00349 |
| 5 Gal. #L253T-20 with 4 Oz. Catalyst | P/N 01-00350 |

Additional catalyst may be required.

Same catalyst used for #1520-5 and #L253T-20.

Note: Use #1520-5 finish coating over #L253T-20 but never use #L253T-20 over #1520-5.

Above resins are not for use in making fuel tanks. For fuel tanks (except those for gasohol) use #6060-5 Isophthalic Resin.*

| | |
|--|--------------------|
| 1 Gal. #6060-5 with 1 Oz. Catalyst | P/N 01-00351 |
| 5 Gal. #6060-5 with 4 Oz. Catalyst | P/N 01-00352 |

Additional catalyst may be required.

Catalyst same as for resins listed above.

* Iso Resin is highly flexible. Has excellent adhesion to metal, wood, concrete, fiberglass and other "hard-to-adhere" surfaces. Compatible with most fuels. Iso is a wax-free resin and must be over-coated with Type "A" Surfacing Resin to obtain a surface cure.

SURFACE CURING AGENT is used in polyester resin to improve sanding properties. Added to #1063-5 Bond Coat or #6060-5 Isophthalic, it will provide same sanding properties as in Type "A" Surfacing Resin. Use in proportions of 2 oz. per gallon of resin. Surface Curing Agent is used in addition to catalyst.

| | |
|--|--------------------|
| 4 Oz. in Polyethylene Dispenser Bottle | P/N 01-07100 |
| Pint (16 Oz.) in Polyethylene Dispenser Bottle | P/N 01-07200 |
| Gallon (128 Oz.) | P/N 01-07300 |

VINYL ESTER RESIN



Dow Chemical's Derakane 411-350 PA Vinyl Ester Resin is an epoxy-based Vinyl ester designed to provide superior toughness and high corrosion resistance. Many leading kit aircraft manufacturers use vinyl ester resins extensively due to its quality and ease of fabrication. We furnish medium "promoted" vinyl ester 411-350 PA resin which includes CONAP, DMA the resin is cured by adding the MEKP which is furnished with the kit. Gel times vary according to the amount of MEKP added and the ambient temperature. Shelf life of promoted vinyl ester resin is short at only a few months.

MEDIUM PROMOTED: Includes CONAP, DMA and other additives. Add MEKP for complete cure:

| | |
|---|--------------------|
| Quart | P/N 01-01076 |
| Gallon | P/N 01-07350 |
| MEKP NORAC Catalyst Only (4 oz.) | P/N 01-07325 |
| Vinyl Ester Resin 411-350PA - 1oz. | P/N 01-01109 |
| Vinyl Ester 1-Gal. Kit (Resin & Catalyst) | P/N 01-07355 |
| Vinyl Ester Resin 411 55 Gallon | P/N 01-01057 |

RESIN: Color may vary by manufacturer.

CATALYST LARGE QUANTITY CHART

| Catalyst Concentration | Resin Quantity | | |
|------------------------|----------------|-----------|-----------|
| | Quart | Gallon | 5 Gallon |
| 1/2% | 1/16 oz. | 2/3 oz. | 1-1/3 oz. |
| 3/4% | 1/4 oz. | 1 oz. | 5 oz. |
| 1% | 1/3 oz. | 1-1/3 oz. | 6-2/3 oz. |
| 1-1/2% | 1/2 oz. | 2 oz. | 10 oz. |

WARNING: Mekp Catalyst is very dangerous to the eyes. Always wear full goggle protection and have running water at hand when working with Mekp.

MGS EPOXY RESINS



MGS epoxy resins are approved for the production of certificated aircraft parts. The 335 and 285 systems are especially suited for homebuilders because of their long shelf lives, excellent workability, physiological friendliness, adjustable cure rates and excellent static and dynamic strength characteristics. The 285 system is available with fast and slow hardeners which can be blended with each other in any proportion to provide the desired working life and cure cycle. Pot lives and working times can be adjusted from fifteen minutes, using the fast hardeners, to six hours, when the slow hardeners are employed. Once the hardeners have been blended, the specified resin to hardener mixing ratio must be maintained. The 335 System is available only with fast hardener. Components of the 335 system should not be mixed with those of the 285 system. With both systems, if only the slowest hardener is used, the cure times should be extended to a few days, otherwise some brittleness may be noted. While room temperature curing results in good properties when the faster hardener combinations are used, some curing at elevated temperatures or post curing will result in the highest achievable strength and Tg, with the slower blends. Even unfavorable low temperature and high humidity conditions in the work environment will not effect the quality of the product and high gloss, uncontaminated, tack free surfaces are achievable every time. The resins do not contain any unreactive dilutants which with many systems result in de-gassing and bubbling of the painted finish. The MGS resins do NOT contain aromatic amines. While proper processing practices should be maintained, the physiological friendliness of these systems have been demonstrated by many years of production experience. The 285 system has slightly higher physicals than the 335 and will also achieve a higher maximum Tg after post curing. While the 335 is more viscous than the 285, after mixing with the appropriate hardeners, their viscosities are comparable. MGS systems are used in the construction of the Cozy, Diamond, Cirrus and other aircraft.

| System 285 (Max. Tg 105 C - 110 C; 195 F - 230 F) | | |
|---|-----------------|---------------------|
| Mixing ratio Resin:Hdnr | Pot life | Mixed Viscosity@20C |
| 100:50 by volume | H285-F 40 min | 300-500 cp |
| 100:40 by weight | H287-S 4 hours | |
| | H285 : H287 | |
| | 40 : 60 2 hours | |

System 285 Prices

| | |
|--------------------------------------|--------------------|
| L285 Resin (1 Gal.) | P/N 01-41000 |
| H285F Hardener (.25 gal/1 qt.) | P/N 01-41005 |
| H287S Hardener (.25 gal/1 qt.) | P/N 01-41006 |

| System 335 (Max. Tg 75 C - 80 C; 160 F - 180 F) | | |
|---|-------------------|---------------------|
| Mixing ratio Resin:Hdnr | Pot life | Mixed Viscosity@20C |
| 100:45 by volume | H335-F 15 min | 800 cp |
| 100:38 by weight | H340-S 6 hours | 400 cp |
| | H335 : H340 | |
| | 50 : 50 1.5 hours | |
| | 20 : 80 4 hours | |

System 335 Prices

| | |
|---|--------------------|
| L335 Resin (Gal.) | P/N 01-41100 |
| H335F Hardener (.225 gal/0.9 qt.) | P/N 01-41105 |
| H340S Hardener (Slow) | P/N 01-41106 |

Two units of hardener are required for each gallon of resin

Typical room-temperature properties of clear castings made with DERAKANE 411 resins

| Property | DERAKANE 411-350PA |
|-------------------------------------|--------------------|
| Tensile Strength, psi | 11-12,000 |
| Tensile Modulus, units 105 psi | 4.9 |
| Elongation, % | 5-6 |
| (DERAKANE 411-350) | (7-8) |
| Flexural Strength, psi | 16-18,000 |
| Flexural Modulus, units 105 psi | 4.5 |
| Compressive Strength, psi | 16-17,000 |
| Compressive Modulus, units 105 psi | 3.5 |
| Compressive Deformation at Yield, % | 6.5-7.8 |
| Specific Gravity | 1.12 |
| Heat Distortion Temp., °F | 210-220 |
| Barcol Hardness | 35 |

CATALYST SMALL QUANTITY CHART

(20 - 30 minute pot life at 2% mix ratio)

| Catalyst Concentration | Resin Quantity - 30 drops = 1 cc | | | | |
|------------------------|----------------------------------|----------|----------|---------|--------|
| | 2 oz. | 4 oz. | 8 oz. | 12 oz. | 16 oz. |
| 1/2% | 9 drops | 18 drops | 36 drops | 1.8 cc | 2.5 cc |
| 3/4% | 14 drops | 27 drops | 2 cc | 3 cc | 4 cc |
| 1% | 18 drops | 36 drops | 2.5 cc | 3.75 cc | 5 cc |
| 1-1/2% | 27 drops | 2 cc | 4 cc | 6 cc | 8 cc |
| 2% | 36 drops | 2.5 cc | 5 cc | 7.5 cc | 10 cc |

EPOXY LAMINATING SYSTEMS

CM

AEROPOXY FROM PTM&W INDUSTRIES



PR2032 is a medium viscosity, unfilled, light amber laminating resin that is designed for structural production applications. 3 hardeners are available for use with PR2032. PH3660, has a 1-hour pot life. When used with either of these hardeners, the system gives excellent wet-out of fiberglass, carbon and aramid fibers. Special additives have been incorporated into this system to promote chemical adhesion to fabrics made with these fibers. The AEROPOXY systems will cure completely at room temperature, or can be given an elevated temperature cure. AEROPOXY contains

no MDA (a known liver toxin and carcinogen) and meets or exceeds current OSHA requirements for safe use. Hardener PH3665 has a longer pot life than PH3660, 2 hours, that is useful for vacuum bagging larger parts before the resin has gelled. Hardener PH3630 is intended for smaller laminates, fast repairs or additions to a primary structure. PH3630 pot life is 30 min.

| Part No. | Description | Wt. (lbs.) | Price |
|----------|--------------------------------|------------|-------|
| 01-42125 | 1 quart PR2032 Resin | 2.25 | . |
| 01-42130 | 1 pint PH3660 Hardener | .66 | . |
| 01-42135 | Aeropoxy QUART KIT | 2.91 | . |
| 01-42140 | 3/4 gallon PR2032 Resin | 7.5 | . |
| 01-42145 | 1 quart PH3660 Hardener | 2.0 | . |
| 01-42150 | Aeropoxy GALLON KIT | 9.5 | . |
| 01-42155 | 5 gallon PR2032 Resin | 48 | . |
| 01-42160 | 2 gallon PH3660 Hardener | 13 | . |
| 01-42165 | Aeropoxy PAIL KIT | 61 | . |
| 01-00160 | 1 pint PH3630 Hardener (fast) | -- | . |
| 01-00161 | 1 quart PH3630 Hardener (fast) | -- | . |
| 01-00162 | 1 pint PH3665 Hardener (slow) | -- | . |
| 01-00163 | 1 quart PH3665 Hardener (slow) | -- | . |

Aeropoxy mixing ratio — 100:27 by weight, 3:1 by volume.

WEST SYSTEM EPOXY



WEST SYSTEM brand resins and hardeners, form a two-part epoxy system developed by Gougeon Brothers specifically for wood and composite boat construction. Rutan Aircraft Factory now recommends WEST SYSTEM epoxy for certain homebuilt aircraft applications, particularly where a moisture resistant epoxy is desired. 105 Resin is the base material on which all of the WEST SYSTEM epoxy systems are built. The resin is a clear, light amber, low-viscosity liquid. It is designed specifically to wet out wood fiber. With roller applications, it possesses excellent thin film characteristics in flowing out and is self-leveling without fish-eyeing. Its relatively high flash point makes it safer to work with than polyesters. It can be cured in a wide temperature range, then sanded and shaped. It cures quite clear so that the natural finish shines through. 205 Fast Hardener, when mixed with the 105 Resin in a ratio of 5 parts Resin to 1 part Hardener, yields a high-strength, rigid solid with excellent cohesive properties and provides an excellent moisture vapor barrier. The 105 Resin/205 Fast Hardener has a pot life of 10-15 minutes at 70°F. It is also recommended in coating applications where natural finishing is desired. Partial cure time at 70°F is 5-7 hours. 206 Slow Hardener is a low-viscosity mixture of polyamines. The 105 Resin/206 Slow Hardener has a pot life of 30-40 minutes at 70°F. It is normally used when extended time is needed for large coating and bonding applications. It is especially well suited to working in warmer climates. Partial cure time is 9 hours at 70°F.

WEST EPOXY KITS

WEST COMPONENTS

| Kit No. | Kit Size | Part No. | Hardener | | | Kit Price | Resin | | Fast Hardener | | Slow Hardener | |
|---------|----------|----------|------------|-----------|-----------|-----------|----------|-------|---------------|-------|---------------|-------|
| | | | #105 Resin | #205 Fast | #206 Slow | | Part No. | Price | Part No. | Price | Part No. | Price |
| A-1 | 1.2 Qt | 01-08100 | 32 Oz | 7 Oz | ----- | . | 01-00353 | . | 01-00356 | . | 01-00359 | . |
| A-2 | 1.2 Qt | 01-08200 | 32 Oz | ----- | 7 Oz | . | 32 Oz | ----- | 7 Oz | ----- | 7 Oz | ----- |
| B-1 | 1.2 Gal | 01-08300 | 126 Oz | 27 Oz | ----- | . | 01-00354 | . | 01-00357 | . | 01-00360 | . |
| B-2 | 1.2 Gal | 01-08400 | 126 Oz | ----- | 27 Oz | . | 126 Oz | ----- | 27 Oz | ----- | 27 Oz | ----- |
| C-1 | 5.25 Gal | 01-08500 | 4.35 Gal | 121 Oz | ----- | . | 01-00355 | . | 01-00358 | . | 01-00361 | . |
| C-2 | 5.25 Gal | 01-08600 | 4.35 Gal | ----- | 121 Oz | . | 4.35 Gal | ----- | 121 Oz | ----- | 121Oz | ----- |

ORDER 301/303 PUMP PACKS SEPERATELY.

207 SPECIAL COATING HARDENER

This hardener is used where a very clear, moisture resistant natural wood finish is needed. Can be used to laminate veneers where joints will be subjected to sunlight. Improves sun resistance. Pot life: 20 min., cure solid in 9-12 hours, and maximum strength within 7 days.

- .66 pint.....P/N 207-SA
- .33 gal.....P/N 207-SB
- 1.45 gal.....P/N 207-SC

209 TROPICAL HARDENER

This hardener is used for bonding applications in warm or humid weather or when extended working time is needed. Provides twice the working time as 206 hardener. Forms a clear, amber solid when cured. Pot life is 40 minutes, solid state in 24 hours, and maximum strength in 5-9 days.

- .66 pint.....P/N 01-00362
- .33 gallon.....P/N 01-00364
- 1.45 gal.....P/N 01-00363

PRO-SET 125 RESIN & 229 HARDENER

Mixing: 125 Resin: 229 Hardener - By weight, 100:30 & By volume, 100:35. Pot life: 65°-83 min, 72°-77 min, 85°-27 min.

For PROFESSIONAL use only.

| Physical Property | Test Method | Room Temp (2 wks.) |
|----------------------------|-------------|--------------------|
| Compression Yield (psi) | ASTM-D-695 | 14,500 |
| Tensile Strength (psi) | ASTM-D-638 | 7,550 |
| Annular Shear | GBI Method | 11,641 |
| Fatigue(lb)@100,000 cycles | | |

- GAL.#125 Resin P/N 125-0.....
- GAL.#229 Hardener P/N 229-0.....

WEST SYSTEM ACCESSORY PRODUCTS

- West System User Manual..... P/N 01-08750**FREE**
- West System 101 Handy Repair Pack - Contains 105 resin & 205 hardener plus accessories needed for small repairs
P/N 01-08760
- West System #101-6 Maxi Repair Kit - incl. materials to make 6 individual repairs using 105 resin and 205 hardener.
P/N 01-08770
- West System 501 White Pigment - use this epoxy based pigment to provide a neutral white base for the final coloring system. Mix at ratio of 1 teaspoon to 8 oz. of epoxy. 8 oz. can..... P/N 01-08775
- West System 410 Microlight an excellent filler which provides easy workability for a variety of applications. Easy to sand and cures to a neutral tan color.
1.7 oz., 01-08780 4.3 oz., 01-08785.....

423 GRAPHITE POWDER

423 Graphite Powder can be mixed with WEST SYSTEM epoxy to produce a low friction coating with increased scuff resistance and durability. 423 is often used as a bearing surface, and as a coating on the bottoms of racing craft that are dry sailed.
P/N 09-00315.....



301/303 PUMP PACK

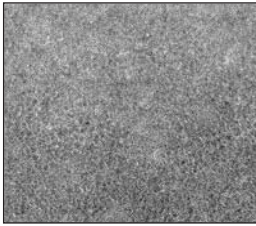
Using Mini Pumps helps ensure accurate metering of resin/hardener mixture. Pumps mount directly on resin and hardener containers. One stroke from each pump delivers proper ratio of resin to hardener. Kit consists of 3 pumps for A, B, and C epoxy kits. P/N 01-00318.....



FOAM

CM

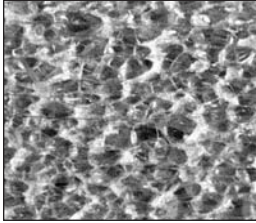
STYROFOAM – SMALL CELL



STYROFOAM FB – Low density (2 lb./ft³). Tight closed cell structure leaves no voids between the cells. The result is high compressive strength and unequalled resistance to water penetration. Has excellent resistance to bases, salts, alcohols and most acids but not to petroleum based solvents. Cuts smoothly with a hot wire for airfoil shapes.

| Foam Type | Density | Thickness | Sheet Size | Part No. | Price/Sheet |
|--------------------------------|----------------------|-----------|------------|----------|-------------|
| Styrofoam (Blue) Small Cell | 2 Lb/Ft ³ | 5/8" | 24" x 48" | 01-09400 | . |
| | | 5/8" | 24" x 96" | 01-09500 | . |
| | | 3/4" | 24" x 96" | 01-09600 | . |
| | | 1" | 24" x 48" | 01-09700 | . |
| | | 1" | 24" x 96" | 01-09800 | . |
| | | 1-1/2" | 24" x 96" | 01-09900 | . |
| | | 2" | 24" x 48" | 01-10000 | . |
| | | 2" | 24" x 96" | 01-10100 | . |
| | | 4" | 24" x 48" | 01-10200 | . |

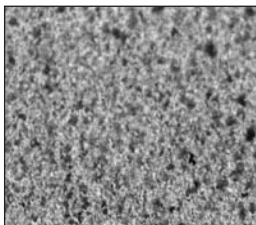
POLYSTYRENE – LARGE CELL



POLYSTYRENE – LARGE CELL This blue large cell expanded foam is 2 lb. density and cuts easily using a hot wire to airfoil shapes. Compatible with most adhesives, but should be used only with epoxies, not polyester resins. Will dissolve in fuels and solvents.

| Foam Type | Density | Thickness | Sheet Size | Part No. | Price/Sheet |
|-----------------------------------|----------------------|-----------|------------|----------|-------------|
| Styrofoam FB (Blue) Large Cell | | 8" | 16" x 4" | 01-37600 | . |
| | | 8" | 16" x 42" | 01-10600 | . |
| | | 8" | 16" x 67" | 01-10800 | . |
| | | 8" | 16" x 109" | 01-10900 | . |
| | | 10" | 20" x 96" | 01-11100 | . |
| Polystyrene (Round Corners) | 2 Lb/Ft ³ | 10" | 24" x 96" | 01-11200 | . |
| | | 10" | 24" x 96" | 01-11200 | . |

POLYURETHANE FOAM



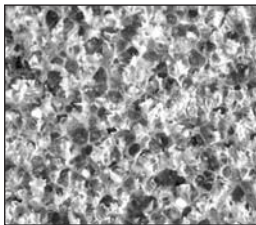
URETHANE – This foam is easily contoured using a large knife, and then sands well to final form. Excellent for producing the fuselage, wing tips, and other curved parts. It is fuel resistant and can be used for fuel cells. Compatible with most adhesives. Do not hot wire polyurethane foam. Color: tan or green.

| Foam Type | Density | Thickness | Sheet Size | Part No. | Price/Sheet |
|-------------------------|----------------------|-----------|------------|----------|-------------|
| Urethane (Tan or Green) | 2 Lb/Ft ³ | 1/2" | 24" x 48" | 01-11300 | . |
| | | 1/2" | 48" x 48" | 01-11400 | . |
| | | 3/4" | 24" x 48" | 01-12150 | . |
| | | 3/4" | 24" x 96" | 01-12160 | . |
| | | 1" | 24" x 48" | 01-11500 | . |
| | | 1" | 24" x 96" | 01-11600 | . |
| | | 1" | 48" x 96" | 01-11700 | . |
| | | 2" | 24" x 48" | 01-11900 | . |
| | | 2" | 24" x 96" | 01-12000 | . |
| | | 2" | 48" x 96" | 01-12100 | . |
| | | 2" | 48" x 96" | 01-12100 | . |

CAUTION

DO NOT USE HOT WIRE!

DIVINYCELL FOAM



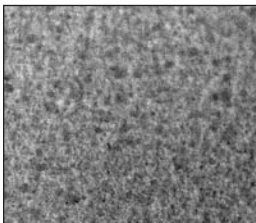
DIVINYCELL – A closed cell medium to high density foam which has high compression strength, durability, and excellent fire resistance. Can be vacuum formed to compound shapes and can be bent using heat. Compatible with polyester, vinylester, and epoxy resins.

| Foam Type | Density | Thickness | Sheet Size | Part No. | Price/Sheet | | |
|-----------------------------------|--------------------------|-----------|----------------|----------|-------------|----------|---|
| Divinycell PVC (Blue) Type H45 | 3 Lb/Ft ³ | 1/4" | 32" x 48" | 01-12300 | . | | |
| | | 3/8" | 32" x 48" | 01-12400 | . | | |
| | | 5/8" | 24" x 47" | 01-12500 | . | | |
| | | 3/4" | 15" x 26" | 01-12600 | . | | |
| | | 3/4" | 32" x 48" | 01-12700 | . | | |
| | | 1" | 32" x 48" | 01-12800 | . | | |
| | | 1-3/4" | 32" x 48" | 01-12900 | . | | |
| | | Eracer | Eracer | 2" | 48" x 96" | 01-12920 | . |
| | | | | 2" | 24" x 48" | 01-12910 | . |
| 3" | 48" x 96" | | | 01-12940 | . | | |
| 3" | 24" x 48" | | | 01-12930 | . | | |
| Divinycell PVC (Tan) Type H100 | 6 Lb/Ft ³ | 1/4" | 37" x 37.5" | 01-13000 | . | | |
| | | 1" | 6" x 10" | 01-13100 | . | | |
| | | 1" | 10" x 12" | 01-13200 | . | | |
| Divinycell PVC | 15.6 Lb./Ft ³ | 1/4" | 24.8" x 27.75" | 01-13300 | . | | |

CAUTION

DO NOT USE HOT WIRE!

LAST-A-FOAM



LAST-A-FOAM – Rigid, Polyether Polyurethane foam with fine closed-cell structure, light cream-yellow color. LAST-A-FOAM® is wonderfully versatile for sandwich-core applications. It cuts and shapes easily with common woodworking tools, and bonds to itself and other materials with most epoxy, polyester, or urethane-type adhesives. LAST-A-FOAM® is unaffected by water, fuels and most solvents, and paint finishes are easily applied. It is frequently used in regular molds after the gel-coat and first two layers of glass are installed; the LAST-A-FOAM® is added and another layer of glass applied for a strong, light-weight sandwich.

| Foam Type | Density | Thickness | Sheet Size | Part No. | Price/Sheet |
|---|----------------|-----------|------------|----------|-------------|
| Last-A-Foam Urethane/Polyester (Yellow) 275° F | 4.5 Lb/Cu. Ft. | 10mm | 24" x 96" | 01-13400 | . |
| | | 1/4" | 24" x 48" | 01-13550 | . |
| | | 1/4" | 24" x 96" | 01-13500 | . |
| | | 3/8" | 24" x 96" | 01-13600 | . |
| | | 1/2" | 24" x 96" | 01-13700 | . |
| Last-A-Foam Urethane/Polyester (Yellow) 275° F | 6Lb/Cu. Ft. | 3/4" | 24" x 96" | 01-14000 | . |
| | | 1/4" | 24" x 48" | 01-14100 | . |
| | | 3/8" | 24" x 48" | 01-14200 | . |
| Last-A-Foam Urethane/Polyester (Yellow) 275° F | 8 Lb/Cu. Ft. | 3/4" | 24" x 48" | 01-14250 | . |
| | | 1" | 16" x 24" | 01-01048 | . |
| Last-A-Foam Urethane/Polyester (Yellow) 275° F | 18 Lb/Cu. Ft. | 0.200" | 12" x 48" | 01-14400 | . |
| | | 1/4" | 12" x 48" | 01-14500 | . |

CAUTION

DO NOT USE HOT WIRE!

FOAM — REPAIR KITS — SEAT FOAM

CM



LIQUID "X-30" FOAM (TWO-COMPONENT POLYURETHANE FOAM)

This system consists of two components - "X-30" Resin and "X-30" Catalyst. When the resin and catalyst are mixed in equal volumes they expand into a rigid closed-cell foam of 2 pound density. Thorough mixing of the two components is essential. "X-30" Foam expands approximately 40 times its liquid volume. Small-batch mixes are recommended. Cured foams can be easily trimmed, cut and shaped with common woodworking tools. Use toluene or MEK for cleanup. "X-30" Foam contains a highly reactive agent and is classified as a toxic material. It is combustible, a strong skin sensitizer and eye irritant. Avoid contact with the skin. Use rubber gloves when handling. Used for: Flotation, thermal and acoustical insulation reinforcement and miscellaneous void filling. Most small pleasure boats can be made "sink-proof" with approximately two gallons of "X-30". Data sheet available. "X-30" Foam contains a volatile fluorocarbon and should be stored at 70°F. or lower. "X-30" is used on the Osprey II bottom hull, canopy, nose cone, etc., requiring about four gallons of material (2 gallons of each). Shelf life at least 6 months. Users have reported "more than 2 years shelf life".

| Kit Size | Part No. | Approx. Foamed Vol. (Cu.Ft.) | Weight Lbs. | Price/Kit |
|------------------------------------|----------|------------------------------|-------------|-----------|
| 1 Quart Kit (1 Pt. ea component) | 01-08800 | 1-1/4 | 3 | . |
| 2 Quart Kit (1 Qt. ea component) | 01-08900 | 2-1/2 | 6 | . |
| 2 Gallon Kit (1 Gal. ea component) | 01-09000 | 10 | 22 | . |
| 10 Gallon Kit (5 Gal ea component) | 01-09100 | 50 | 110 | . |

X-30 is the original polyurethane foam. Do not accept substitutes!

POLYFIX COMPOSITE REPAIR KITS



Polyfix is a 3-part system that uses chemical reaction to heat the repair to 140°F, fusing it to the parent part. This system repairs ABS, PVC, CVPC, SMC, acrylic, vinyl, graphite, Kevlar, plexiglass, nylon, fiberglass, and many other materials. The system combines cyanoacrylate glue, a catalytic filler, and an accelerator. May be used on speed fairings, wing tips, cowlings, glareshields, and more. Kits include polyfix chemicals, Polydust, gloves, mixing tools, and an easy to follow instruction manual.

| Description | Size | Part No. | Price |
|--|---------|----------|-------|
| Polyfix Plastic Repair Kit | - | 01-01045 | . |
| Polyfix Plastic Repair Kit | Small | 01-00235 | . |
| Polyfix Plastic Repair Kit | Medium | 01-00236 | . |
| Polyfix Plastic Repair Kit | Large | 01-00237 | . |
| Non-Clog Cyanoacrylate Applicator reg. Tip | 6" Long | 01-01006 | . |
| Non-Clog Cyanoacrylate Applicator Fine Tip | 6" Long | 01-01007 | . |
| Polyfix Thin Cyanoacrylate | 1/2 OZ | 01-01008 | . |
| Polyfix Thin Cyanoacrylate | 1 OZ | 01-01009 | . |
| Polyfix Thin Cyanoacrylate | 2 OZ | 01-01010 | . |
| Polyfix Thin Cyanoacrylate | 8 OZ | 01-01011 | . |
| Polyfix 9000 Extra Thick | 1/2 OZ | 01-01012 | . |
| Polyfix 9000 Extra Thick | 1 OZ | 01-01013 | . |
| Polyfix 9000 Extra Thick | 2 OZ | 01-01014 | . |
| Polyfix 9000 Extra Thick | 8 OZ | 01-01015 | . |
| Polyfix 11000 Gap Fill | 1/2 OZ | 01-01016 | . |
| Polyfix 11000 Gap Fill | 1 OZ | 01-01017 | . |
| Polyfix 11000 Gap Fill | 2 OZ | 01-01018 | . |
| Polyfix 11000 Gap Fill | 8 OZ | 01-01019 | . |
| Polyfix Industrial 4000 Flexible Thin | 1 OZ | 01-01020 | . |
| Polyfix 3000 Rubber Fill | 1 OZ | 01-01021 | . |
| Polyfix 3000 Rubber Fill | 2 OZ | 01-01022 | . |
| Polyfix 17000 Industrial Odorless Gap Fill | 1/2 OZ | 01-01023 | . |
| Polyfix 17000 Industrial Odorless Gap Fill | 1 OZ | 01-01024 | . |
| Polyfix 17000 Industrial Odorless Gap Fill | 2 OZ | 01-01025 | . |
| Polyfix 17500 Industrial Odorless Gap Fill | 1/2OZ | 01-01026 | . |
| Polyfix 17500 Industrial Odorless Gap Fill | 1 OZ | 01-01027 | . |
| Polyfix 17500 Industrial Odorless Gap Fill | 2 OZ | 01-01028 | . |
| Polyfix 64000 Carbon Gap | 1/2OZ | 01-01029 | . |
| Polyfix 64000 Carbon Gap | 1 OZ | 01-01030 | . |
| Polyfix 64000 Carbon Gap | 16 OZ | 01-01031 | . |
| Polyfix PLYDT Catalytic | 10M/MG | 01-01032 | . |
| Polyfix PLYDT Catalytic | 1/2 PT | 01-01033 | . |
| Polyfix PLYDT Catalytic | 1 PT | 01-01034 | . |
| Polyfix 10000 Accelerator | 2 OZ | 01-01035 | . |
| Polyfix 10000 Accel | 8OZ | 01-01036 | . |
| Polyfix 6000 Debonder | 1 OZ | 01-01037 | . |

COMPOSITE MATERIALS PRACTICE KIT



All designers highly recommend that builders who are considering a composite project purchase this practice kit. It contains the excellent 26 page 11" x 17" manual by Burt Rutan entitled MOLDLESS COMPOSITE SANDWICH HOMEUILT/ AIRCRAFT CONSTRUCTION (\$14.50) plus the assorted foams, epoxy, fiberglass, filler materials and supplies with which to work. Everything needed to practice the technique of composite building before venturing into a complete aircraft project.

Practice Kit with Manual..... P/N 01-15000.....
Practice Kit without Manual..... P/N 01-15100.....
International Practice Kit with Manual..... P/N 01-15050.....
Same as Practice kit with the manual, but excludes the epoxy for International shipping.

BACKSAVER FOAM

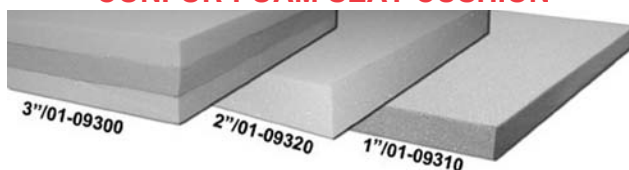


Backsaver foam is temperature sensitive, softening when it comes in contact with a warm surface; Thus, in a seat cushion, the foam softens and conforms to the person's body. This provides even pressure distribution and unconstricted blood circulation, significantly reducing discomfort, even over long periods. In addition, Backsaver foam has excellent energy absorption properties, which have made it excellent for use in the U. S. space shuttle program and in military aircraft and helicopters. Pilots find that Backsaver cushions reduce

their discomfort and fatigue, even on missions of 8 hours or more. Aircraft Spruce now makes Backsaver foam available to the homebuilt and general aviation market.

17" x 18" sheet P/N 01-09325 ea.
48" x 72" sheet P/N 01-09330 ea.

CONFOR FOAM SEAT CUSHION



Confor Form (formerly called Temperfoam) is the conforming foam cushion that was developed for the "Astronaut's Couch" back in the Apollo space program. Confor Foam has the capability of absorbing a tremendous amount of impact shock compared to common polyfoam and it is flame resistant. It is an excellent product that will give your seats enduring comfort that you never thought possible. Adapts to you for pressure point-free comfort that is really incredible. The best universal cushion for aircraft use is a 3" CF42/CF45/CF47 laminate. Confor Foam meets FAR 25.853, FAR 25.855, and CAL 117 burn specifications making it excellent for certified aircraft or homebuilts. Some special sizes in 1", 2", or 3" thicknesses are available on special request.

1" x 16" x 18" P/N 01-09310 ea.
2" x 16" x 18" P/N 01-09320 ea.
3" x 16" x 18" P/N 01-09300 ea.

INFLATABLE LUMBAR SUPPORT



This inflatable air pillow can be installed just under the seat material and will give you the customized support just where you need it. A convenient palm-size pump and a release valve control the firmness of the lumbar support. The In-Flight Back Support is made of a heavy duty self-extinguishing neoprene rubber, specially designed to pass FAR 23.853 flame-test requirements.

One inflatable lumbar support P/N 13-01501
Two Inflatable lumbar supports P/N 13-01821



POLY-CEL 100 POLYURETHANE FOAM

New one-component polyurethane foam that requires no mixing. Dispenses like shaving cream from an aerosol can, then sets up to a rigid closed-cell foam. Adheres permanently to almost any surface - does not shrink, dry out or become brittle with age. 12 oz. aerosol can.

P/N 01-09200

VACUUM BAGGING SUPPLIES

VACUUM BAGGING TECHNIQUES BOOK - P/N 01-14803 /Jea.

VACUUM BAGGING FILM - #7400 film is a high grade nylon 6 film. It is transparent green in color and heat stabilized for long term, 350°F cures. Film is soft & pliable and ideal for high temperature composites, metal-bond, and any function requiring heat & pressure. Width: 54".

P/N 01-14805 /Yd.

4.5 OZ. BREATHER/BLEEDER PLY - #3450 is a 4.5 oz./sq. yd. non-woven polyester breather system used for even volatile evacuation from vacuum bags. It can be used at pressures up to 85 psi (5.8 bars). Multi-directional conformability make it a very efficient breather. This breather does not contain any binders which could seal the air flow. Width: 60".

P/N 01-14810 /Lin.Yd.

STRETCHLON VACUUM BAG FILM 60" - Modified urethan film with incredibly high elongation, which allows anyone to vacuum bag easily. This film has memory and can be reused. .0015 x 60" x 200 ft (38m x 1.52m x 62m) approx shipping weight 18lbs per roll (8.1 kg) Not affected by low humidity, always stays soft with no cracking. Elongation up to 600%, one with elastic memory. Use temperatures up to 400°F (204°C). Can be heat sealed to custom shapes reducing labor costs. Fewer pleats necessary, conforming to autoclave pressures

P/N 01-01080 /Lin.Yd.

10 OZ. BREATHER/BLEEDER PLY - #3100 is a 10 oz./sq. yd. non-woven polyester breather system used for even volatile evacuation from vacuum bags. It can be used at pressures up to 200 PSI (13.8 bars). Multi-directional conformability makes it a very efficient breather. This breather does not contain any binders which could cause seal-off of air flow. Width: 60".

P/N 01-14815 /Lin.Yd.

2 OZ. NYLON RELEASE PLY - #5201 SRB is a smooth nylon fabric which has been scoured and heat set so that it is contaminate free and will not shrink during the laminate cure cycle. It is then coated with a special release blend. The peel ply may be used for composite manufacturing and metal bonding, but is not recommended for use with resin systems containing phenolic. Thickness: .005". Color: Blue. Width 60".

P/N 01-14820 /Lin.Yd.

3 OZ. POLYESTER RELEASE PLY - #5252SRB is a medium coarse weave polyester peel ply that leaves a surface with a rougher texture. It has been scoured and heat set to eliminate shrinkage during use and then coated with a special release blend. It can be used on all composite and metal bonding systems and is not affected by resin systems containing phenolic. #5252 provides protection of the laminate surface between primary & secondary processing. Thickness: .006". Color: Blue. Width: 60".

P/N 01-14825 /Lin.Yd.

RELEASE FILM - #2410 material is the most economical release film available that can be used at temperatures over 350° F. The film has handling qualities similar to the lowest priced halohydrocarbon film. Thickness: .002". Color: Clear. Width: 54".

P/N 01-14830 /Lin.Yd.

POROUS TEFLON COATED RELEASE FILM - #7025 is used where a medium weight porous release fabric is required on the surface of a part. During the cure of the assembly it will allow excess resin and all of the air and volatiles to pass into the bleed/breather ply (CFM Airflow 70). At completion of the cure the fabric will release cleanly from the assembly. Color: Brown. Width: 37.5". 10 yard min. order.

P/N 01-14835 /Lin.Yd.

NON-POROUS TEFLON COATED RELEASE FABRIC - #7039 is a light weight extra smooth TFE coated glass fabric. It will leave little or no fabric imprint on most composite lay-ups. It is used as a release fabric where there is no requirement for bleeding or breathing resin or volatiles from the composite lay-up. It is mainly used for protecting caul sheets from resin contamination and as a release media on tool surfaces. Thickness: .003". Color: Brown. Width: 37.5".

P/N 01-14840 /Lin.Yd.

FLASH TAPE - #6045-02 is a polyester backing film with a fully cured silicone adhesive. This tape is very tough and ideal for resin or adhesive flash removal. Color: Blue. Thickness: .002". Roll size: 1" wide x 72 yds.

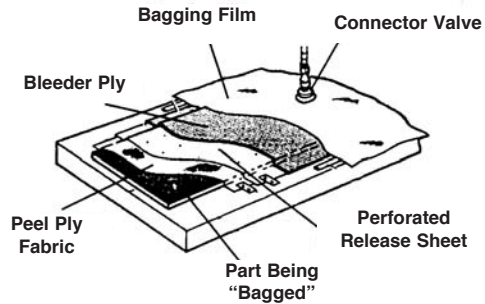
P/N 01-14845 /roll

400° F RESISTANT SEALANT TAPE - #4401 is a grey vacuum bag sealant tape that removes cleanly from the tool surface at the completion of the cure cycle. It can be used at any temperature up to 400° F. It can be used on any tool surface now in use and has been a standard of the industry for many years. It has high initial tack and is very easy to apply to prevent leaks between the bag and tool. It works well for composites, metalbond, or any function that requires temperature and/or pressure up to 400° F. Color: Grey. Size: 1/8" x 1/2" x 25 ft.

P/N 01-14850 /roll

SEALANT TAPE ROLLER - #9050 is a plastic roller designed to assist in applying sealant tape between the bag and the tool. It assists the operator in applying maximum pressure to make a leak-proof, smooth seal. The unit is lightweight and easy to use, and the plastic roller helps prevent damage to the film. Roller width: 1-3/16". Roller Diameter: 1-3/8".

P/N 01-14875 /Jea.



VACUUM VALVE - TWO PIECE - #8112 is a two-piece vacuum valve which requires one quarter turn to lock in place. Service temperature to 500° F. This valve is an industry standard The base is anodized and is red in color. Inside Diameter: 1/4" standard. Threads: 1/4" NPT.

P/N 01-14855 /Jea.

OVEN VACUUM HOSE - #8020 is a thick walled, flexible silicone hose. It is normally used for debulking and oven cures using vacuum only. Furnished in standard 10 foot lengths. Other lengths available on special order. Hose size: 1/4" ID.

P/N 01-14860 /Jea.

HIGH TEMPERATURE QUICK DISCONNECT SET - #8432 is a two-piece quick disconnect both male and female for use to 500° F at pressures up to 200 psi (13.8 bars). Sold as a set of male & female components.

P/N 01-14865 /set

SHRINK TAPE - #9010 is an oriented polyester film designed to shrink as the laminate approaches cure temperature. The applied pressure is maintained during cure. It is used extensively where the shape of the assembly makes conventional bagging too labor-intensive. If excess resin needs to be released during cure, perforating the shrink tape after the assembly has been wrapped with a porcupine roller will reduce the resin content as well as permitting air and volatiles to escape. Thickness: .002". Width: 1-1/4", Roll length: 100 yds.

P/N 01-14870 /roll

GREENFLOW 75 - Greenflow 75 is designed to efficiently distribute resin with little waste due to the low profile, tight construction. Greenflow 75 can be used with polyester vinylster and epoxy resins. Color: Green. Thickness: .035±.003 (.89mm±75µm). Melt Point (Method:DSC): 230°F (161°C). Configuration of Net: Rhombic

P/N 01-01081 /Lin. Yd.

PORCUPINE ROLLER - #9060 is a steel roller with a wood handle designed to perforate films to allow air, volatiles, and some resin to flow through the film. The amount of resin flow can be controlled by the depth of the pin penetration. Also useful on foam to give the bonding adhesive a better grip on the foam surface.

P/N 01-14880 /Jea.

VACUUM GAUGE - a dial faced vacuum gauge capable of displaying vacuum from 0" to 30" Hg. It is 2" in diameter and can be used on the vacuum pump line, holding tank, or with a vacuum valve to determine vacuum in specific areas of a bagged assembly. Fitting size: 1/4" NPT.

P/N 01-14885 /Jea.

VACUUM PUMP - Standard vacuum pump ideal for small shop vacuum bagging operations.

P/N 01-14891 /Jea.

VACUUM PUMP KIT - Includes vacuum pump, gauge, valve, fittings, and hose.

P/N 01-00164 /

VACUUM RELIEF VALVE - P/N 52763 /

BAGGING SUPPLIES STARTER KIT - Includes 10 yards of Vacuum Bagging Film #7400, 10 yards of 4.5oz. Breather Bleeder #3, 1 roll 400° resistant Sealant Tape (25 yards/roll), 10 yards Dacron Fabric 1.8oz.x 60", & 10 yards 60" x .001 Perforated Release Sheet.

P/N 01-14894 /

PERFORATED RELEASE SHEETS - 60" width, .001 thickness. Sold by the yard.

P/N 01-14895 /yd.

ECONOMY VACUUM GENERATOR - a low cost and reliable method of generating a vacuum for those who already own an air compressor. The generator will create 27" of Hg vacuum/pressure when coupled in-line to an air compressor capable of producing 2.2 cfm. Larger air compressors are advisable for continuous use applications. Suitable for parts up to 80 ft².

P/N 12-11148 /

VACUUM FORMING MACHINE CONSTRUCTION PLANS - Finally, an affordable solution for builders that need vacuum forming capability. This 106 page illustrated assembly manual includes wiring diagrams, parts lines, parts sources, full size cut-away drawings of an assembled machine, 27 dimensioned assembly and parts drawings, and much more. All details of construction of the machine are covered and photos and diagrams will guide you through it.

P/N 01-14896 /

CM

AIRCRAFT PLASTIC REPAIR

CM

A complete line of plastic repair and refinishing products, as well as instructional materials, which make plastic repair easy and effective. Why spend a lot of money on aftermarket aircraft parts, when quality repairs can easily be made on the originals? The materials listed below are specifically engineered to be used on plastics and can be used to repair and refinish the following: Cracked or broken instrument panels, wingtips, fairings, yokes, wheel pants, all types of plastic fairings, strut and landing gear fillets, headset housings, antenna housings, stripped threads and cracked mounting holes in plastic components and more! These materials can also be used to fabricate missing sections of your existing component or to create small parts.



1000-A SUPER CLEAN PLASTIC CLEANER (19 FL.OZ.)

Before doing any sort of plastic repair, use Super Clean plastic cleaner to maximize the durability of your repair. Super Clean removes mold release agents, wax, grease, silicone, tar, bugs, sealers and other contaminants from painted or unpainted plastic or metal surfaces. It's simple to use, just spray it on and wipe it off with a clean, lint-free cloth.

P/N 01-00533.....

2020-T SMC HARD-SET FILLER (2-5OZ. TUBES)

SMC Hard-set Filler is a 2-part epoxy system that is very rigid when fully cured. It works on ABS, SMC, fiberglass, polycarbonate and on any other repair application that requires a rigid, high impact resistant repair material. It has a working time of 3 to 4 minutes and is ready to sand in 15 minutes.

P/N 01-00534.....



2045W STAINLESS STEEL REINFORCING MESH (50 SQ.IN.-5"X10")

Reinforcing Wire Mesh is designed to be used to reinforce any repair made with an airless plastic welder. We recommend that the mesh be used to when a tear goes to the edge of the plastic. Since it is stainless steel, it is 5 times stronger than aluminum wire screen and is virtually impervious to oxidation under normal conditions. You can also use the mesh to fabricate tabs, fill holes and provide reinforcement in any meltable plastic.

P/N 01-00536.....



2100-1 SMALL INSTA-WELD KIT

Each Insta-Weld Kit comes with Insta-Weld 1, Insta-Weld 2, Activator, and Weld Compound. A complete set of instructions is included with each kit. This kit is designed to repair SMC, fiberglass, hard plastics, metals, rubber and other materials too numerous to mention. It does not work on polypropylene, polyethylene or TPO substrates. The small Insta-Weld Kit comes with a 1 oz. bottle of both the Insta-Weld 1, Insta-Weld 2 & 2 oz. bottle of Activator & weld compound.

P/N 01-00538.....

2200-1 INSTA-WELD 1 (THIN)

Insta-Weld 1 is our "thin" adhesive and is to be used when you have a clean break with no gap to fill. It has the consistency of water. To use, spray the broken area with 2303 Activator, clamp the parts together then apply a small amount of Insta-Weld 1. The adhesive will wick into the crack and create an instant repair. It does not work on polypropylene, polyethylene or TPO substrates.

P/N 01-00539.....



2250-1 INSTA-WELD 2 (THICK)

Insta-Weld 2 is our "thick" adhesive and is to be used when it is necessary to fill a gap. Insta-Weld 2 is about the consistency of 30 weight oil. To use, spray one side of the break with 2303 Activator, apply Insta-Weld 2 to the other side, then clamp together. It does not work on polypropylene, polyethylene, or TPO substrates.

P/N 01-00540.....



2303-3 INSTA-WELD ACTIVATOR (2FL. OZ. W/SPRAYER)

Our quick spray Activator causes instant curing of all Insta-Weld adhesives. Activator may be used before or after adhesive is applied. Come in plastic bottles and include sprayer.

P/N 01-00541.....



PLASTIFIX REPAIR KITS

PlastiFix repairs virtually any rigid plastic and works exceptionally well on ABS. Repair cracks, fill gaps, reinforce repairs, rebuild broken tabs, fix stripped threads, and more. PlastiFix's most unique feature is the FlexMold molding bar which allows you to create a mold and cast missing pieces. No other plastic repair is more versatile. The 30 gram kits are enough to complete approximately 24" of cracked plastic repair. The large kits will do about 24 feet. **Kit Includes:** 253X PlastiFix Powder 30G, 2520 PlastiFix Liquid 50ML, 2542 Dropper Bottle Assembly, 2543 Power Application Cup, 2548 Transfer Pipette, 2550 Applicator Needle Qty: 2, 2560 Flexmold Molding Bar 10CC.

2501-PlastiFix Repair Kit (30g, white)..... P/N 01-00542
2503-PlastiFix Repair Kit (30g, black)..... P/N 01-00543
2504-PlastiFix Repair Kit (30g, clear)..... P/N 01-00544
2502-**Large Kit includes:** 2531-L PlastiFix Power 150G (WHITE), 2532-L PlastiFix Power 150G (BLACK), 2520 PlastiFix Liquid 250ML, 2542 Dropper Bottle Assembly QTY 2, 2543 Power Application Cup QTY 2, 2548 Large Transfer Pipette, 2550 Applicator Needle QTY 4

P/N 01-00545.....

3800-4 FLEX-TEX FLEXIBLE TEXTURE MATERIAL (QUART)

Flex-Tex is a unique blend of materials designed to be used for re-texturing repaired areas on instrument panels, consoles, etc. A wide variety of pebble-grained textures can be achieved with this product by varying the air pressure, distance from work, and speed of pass. Apply with a regular spray gun or a PreVal sprayer. Dries flat black. Must be top-coated with color for durability and appearance.

P/N 01-00546.....



MICRO-WELD 100
Micro Weld 100 is a versatile and economical tool for repairing many type of plastics. Airless welding provides the do-it-yourself-er and professional alike a way to economically repair many of the items that would normally be thrown away. Excellent for repair of plastic aircraft parts. **FEATURES:** • 100 Watt heating element with built in temperature control unit • 2045W Stainless Steel Reinforcing Mesh • 5027HT Welding Tip • Welder Stand • Carry Case • Instruction Booklet • 15ft of 6 different welding rods

P/N 01-00766.....

BUMPER & CLADDING COAT (PINT)

Permanently recolor faded, scuffed, marred, or discolored plastics. Sticks to plastic without adhesion promoter or primer. Just clean the plastic with Super Clean Plastic Cleaner & spray the paint. No mixing required! Gives satiny, OEM look when dry.

Black (pint)..... P/N 01-00548
3502-4 White (quart)..... P/N 01-00551
3601-4 Light Gray (quart)..... P/N 01-00552
3602-4 Dark Gray (quart)..... P/N 01-00553



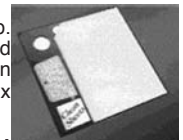
6481-2 2" ALUMINUM BODY TAPE
Can be used to hold broken parts together, create dams and simple molds when repairing plastic parts with PlastiFix or when welding.

P/N 01-00549.....

CS100 CLEAN SHEETS

Clean Sheets are great to have around the shop. They allow you to keep your epoxy mixes clean and smooth while saving time by always having a clean surface to mix on. No more cutting cardboard to mix epoxy. 100 sheets per board.

P/N 01-00550.....



2043-U UNI-CLOTH FIBERGLASS CLOTH (9 SQ.FT.)

Uni-Cloth is a quality fiberglass cloth that is well suited for reinforcing plastic repairs as well as any other application requiring fiberglass reinforcement.

P/N 01-00535.....

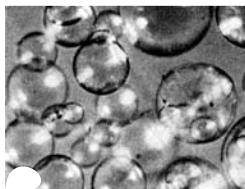


Plastics Repair Instructional Book - P/N 01-00554.....
Plastics Repair Instructional DVD - P/N 01-00555.....

FILLERS

CM

GLASS BUBBLES



These bubbles are actually hollow glass spheres. Because the high-quality glass is very crush resistant, the foam is much stronger, stiffer and water-resistant than any foam made by chemical foaming. These foams displace 4-6 times their weight in most resins and improve the handling characteristics of the base resin. They have a low bulk density and are nontoxic. Mix resin and hardener as directed, then fold in the glass bubbles. Upon cure, a strong, low-density product results which is easy to sand and file. May be shaped to form compound angles and curves. The term "micro" was applied to the mixture of microspheres and epoxy early in the development of composite structures. Although microspheres have been replaced by glass bubbles the word "micro" is still commonly used to reference the mixture. "Micro" is used to fill voids and low areas, to glue foam blocks together and as a bond between foams and glass cloth. Micro is used in three consistencies - (1) a "slurry" which is a one-to-one by volume mix of epoxy and glass bubbles, (2) "wet micro" which is about two to four parts glass bubbles by volume to one part epoxy, and (3) "dry micro" which is a mix of epoxy with enough glass bubbles to obtain a paste which will not sag or run (about five parts to one by volume). In all instances glass bubbles are added to completely mixed epoxy resin and hardener. Wet micro is used to join foam blocks and is much thicker than slurry (it has the consistency of honey) but can be brushed. Dry micro is used to fill low spots and voids and is mixed so that it is a dry paste and will not sag. Apply with a putty knife. Never use micro between glass layers.

CAUTION - When mixing epoxy and glass bubbles, wear a dust mask and keep your face away from the balloons that may float up into the air. Although glass balloons are inert, they can lodge in your eyes or in your lungs and cause problems. Handle with care.

One Pound Bag (Approx. 1 Gal.)..... P/N 01-14600.....

Five Pound Bag (Approx. 5 Gal.)..... P/N 01-14700.....

DISPOSABLE ICING BAGS



These 12" disposable icing bags are ideal for applying beads of any size of micro epoxy or flox epoxy to all surfaces. Great for close-outs and are real time savers. Simply fill, cut end to desired bead size and squeeze. Never breaks down from epoxy. Sold in packs of 100 icing bags.

Pack of 100 bags..... P/N 01-14710.....



CAB-O-SIL

Cab-O-Sil is a fumed lightweight silica thickener used to reduce the flow of epoxies on vertical surfaces, as well as filling pinholes with its smooth texture.

1 gallon bag P/N 01-04711.....

FLOCKED COTTON FIBER



A structural resin filler. The mixture of cotton fiber and epoxy is referred to as "flox". The mixture is used in structural joints and in areas where a very hard, durable buildup is required. Flox is mixed in much the same way as dry micro but only about two parts flock to one part epoxy is required. Mix in just enough flock to make the mixture stand up. If "wet flox" is called out, mix it so it will sag or run. Flox is often used to reinforce a sharp corner. Paint a light coat of pure epoxy inside the corner, trowel flox in to make a triangular support. The flox corner is done just before one glass surface is applied for a wet bond to one surface.

1 Lb. Bag P/N 01-14800.....

5 Lb. Bag P/N 01-14900.....

triangular support. The flox corner is done just before one glass surface is applied for a wet bond to one surface.



MILLED GLASS FIBERS

As the name implies, this material is made by milling fiberglass into a very thin consistency. This material is used in preparing a structural filler. This material is used in fillets that require structural integrity. Milled fiber fillers have higher strength than cotton flock but have fine particles of fiberglass that can penetrate the skin.

1 Lb..... P/N 01-14780.....

PELOUZE PE 5 ELECTRONIC SCALE



Weights up to 5 lbs. in grams or ounces. Ounces weighed in 1/10 oz. increments. Greatly increases accuracy of mixing resins. Allows the user to use different resin systems with varying mix ratios, yielding better physical properties of the cured resin.

P/N 12-01580.....

BONDO



Automotive body filler, used extensively in composite construction to hold jig blocks in place, and for other temporary fastening jobs. Hardens quickly and can be chipped off without damaging the fiberglass. The color of the mixture is used to judge how fast it will set. As more hardener is added, the brighter in color the mixture becomes and the faster it hardens.

#261 Pint (1-1/2 Lb.)..... P/N 01-00365.....

#262 Quart (3 Lb.)..... P/N 01-00366.....

#265 Gallon (12 Lb.)..... P/N 01-00367.....

BONDO MIXING BOARD



A handy, rigid polypropylene sheet, 6"W x 8-1/2"L. Ideal surface for mixing Bondo. Will not stick. When job is finished, let residue dry, flex board and excess Bondo will pop off, leaving board clean.

#359 P/N 359.....

DYNALITE



A formulation of polyester resin, talcs and Microspheres used as a lightweight filler on metal and fiberglass. Works easily, sands faster. Only 7.5 lbs. per gallon as compared to 12 lbs. per gallon for conventional fillers.

494 GallonP/N 01-00368.....

492 QuartP/N 01-01072.....

FIX-IT



A universal repair compound. It is excellent for rebuilding or fabricating parts and as an all purpose adhesive for wood, metals, ceramic, glass, and many plastics. Fix-it can be tapped or drilled, sanded, filed or painted. Patch holes and cracks and seals leaks. Sets rock hard overnight. Fix-It Metal is the same as standard Fix-It except it is loaded with aluminum metal to match the strength, weight, and use for each project. Fix-It is non-toxic, non-hazardous, and impervious to fuels and liquids.

Fit-It 1/4 Lb kit..... P/N 01-14770.....

Fit-It 1 Lb kit..... P/N 01-14775.....

Fit-It Metal 1/4 Lb kit..... P/N 01-14790.....

Fit-It Metal 1 Lb kit..... P/N 01-14795.....

3M™ #77 SPRAY ADHESIVE



This aerosol spray adhesive works well to laminate styrofoam sheets together. Laminations cut well with a hot wire. Net wt. 16.75 oz.

24 fl. oz. Aerosol Spray Can..... P/N 09-28330.....

FOR OTHER 3M™ PRODUCTS SEE PAGES 345-352

PUTTY FLEX FILLER



Urethane Supply Company's 1047 Putty Flex is a premium polyester finishing glaze that provides superior adhesion with excellent flexibility on plastics. Putty Flex produces excellent feather edge results on plastic, metal, SMC, fiberglass, cured primer and paint. Use to fill pinholes, dings, scrapes, sanding scratches and more! Putty Flex sands easily and resists clogging sandpaper.

P/N 01-00961.....

FILLERS – PRIMERS

CM

SUPERFIL BY POLY-FIBER



An ultra-light, corrosion-inhibiting filler for aircraft, marine and automotive use. Adheres to composites, bare aluminum, steel and bare or varnished wood. Easy to mix & apply; mix 2 parts A:1 part B by weight; apply with squeegee; let dry overnight. Excellent sanding qualities. More consistent than hand-mixed micros. Wt: less than 5 lbs/gal. Ships Non-Hazmat.

1 Quart Kit (20oz. Resin/12oz Hdnr)P/N 09-28250
3 Gal Kit (2 gal.Resin/1 gal. Hdnr).....P/N 09-28260

UV SMOOTH PRIME FILLER/PRIMER



By Poly-Fiber - A waterborne linear polyurethane formulated to fill pinholes, protect against ultraviolet rays, and prime composite surfaces prior to applying epoxy primer and Poly-Fiber Aero-Thane or any polyurethane top coat paint. Apply approximately 6 coats without sanding between coats. Recommend rolling on first 3 coats and either rolling or spraying final 3 coats. Dry sand when dry.

1 qt. w/16 ccCrosslinkerP/N 09-28280
1 gal. w/64 ccCrosslinkerP/N 09-28290

FEATHER FILL



A sprayable polyester filler/primer used for filling of minor surface irregularities such as scratches, blemishes and exposed fiberglass threads before final sanding and painting. It adheres to bare metal, plastic filler and fiberglass with minimal surface preparation. Cures ready to sand and paint in 45 - 60 minutes. Any type of finish - lacquer, enamel, acrylics - can be applied over Feather Fill with excellent adhesion. Quart kit includes catalyst and instructions. Approximately six quarts are required for finishing a Vari-Eze.

DO NOT WET SAND.

#401 (1 Qt.).....P/N 01-00369
#391 (1 Gal.).....P/N 01-00370

RUST DEFENDER SANDABLE FILLER



Rust Defender is a one step finishing material from bare metal, body filler plastic, wood, aluminum, or fiberglass to a surface ready to accept any type of paint without concern about penetration of solvents or moisture. Provides fast build-up and fill, is non-shrinking, easy sanding, wet sandable and waterproof, and self-etching. Rust Defender can be sprayed or brushed on and can be built up like Bondo or Featherfill. can be be wet sanded and then is ready to sand in one hour, and it does not clog up your sandpaper. Pot life and cure time are

about one hour at 70 degrees Fahrenheit. Rust Defender is a versatile polyester filler which can save the homebuilder a lot of elbow work!

Quart.....P/N 01-00558
Gallon.....P/N 01-00559

HI BUILD POLYESTER SANDING PRIMERS



- * Quick Build Primer
- * Quickly fills uneven surfaces, and major imperfections
- * Easy sanding prep for surface primer, top coats
- * Low VOC product
- * Perfect Primer for prestec topcoats or any other surface coatings desired
- * Fairly Hi-Build to 120mils

| Color | Size | Part No. | Price | Color | Size | Part No. | Price |
|-------|-------|----------|-------|-------|--------|----------|-------|
| Gray | Quart | 09-02162 | . | Gray | Gallon | 09-02163 | . |
| Black | Quart | 09-02164 | . | Black | Gallon | 09-02165 | . |
| White | Quart | 09-02166 | . | White | Gallon | 09-02167 | . |

AEROPOXY LIGHT FILLER



AEROPOXY Light is a two-component, lightweight epoxy patching and filler paste for foam, wood, and composite surfaces. It mixes easily, applies smoothly, bonds strongly and sands quickly to make the hard job of surface filling much easier.

| Color | AEROPOXY Light Reddish Tan | Test Method Visual |
|-----------------------------|---|-----------------------|
| Mix Ratio | 2 to 1 by weight or Volume 2-3 hrs. To Shape | Calculated |
| Gel Time, 100 gms @ 77°F | 5-6 hrs. To Sand 24 hrs. Full Cure | ASTM D2471 |
| Specific Gravity | .49 | ASTM D792 |
| Cured Hardness | 53 Shore D | ASTM D2240 |
| Compressive Strength | 2156 psi | ASTM D695 |

AEROPOXY LIGHT 1/2 LB KIT - P/N 02-30006
AEROPOXY LIGHT 6 LB KIT - P/N 02-30007

HYSOL EPOXY PATCH KITS



EPL0151 is a clear two part resin / hardener which is ideal for bonding fiberglass, PVC, and graphite. Cure time is 6-8 hours. EPK1C is a white 2-part resin / hardener epoxy system which is used to bond aluminum and ceramics.

EPK0151 Kit, 3.35 oz. (fiberglass)
P/N 01-15875.....
EPK1C Kit 4.0 oz kit (aluminum)
P/N 01-15880.....

LITE WEIGHT FILLER



Lite Weight autobody filler is a very versatile filler which is excellent for holding jig blocks in place during composite construction. Applies evenly and allows sanding within minutes. Cures well even in humid climates. Creme hardener is included.

Quart.....P/N 01-00243.....
Gallon.....P/N 01-00244.....

WEST SYSTEM 410 MICROLIGHT



An excellent filler which provides easy workability for a variety of applications. Easy to sand and cures to a neutral tan color.

1.7 OzP/N 01-08780.....
4.3 Oz.P/N 01-08785.....

EPOXY SURFACE COAT



#1099 is a white, thickened epoxy material used to create the durable surface coat on room temperature epoxy molds. This surface coat can be brushed on as thick as 1/8" at a time without developing runs or sags. It is specially formulated to provide strong interlaminar bonds with the reinforcing materials, even if it is left unsupported overnight. #1099 readily accepts all our pigments, resists chipping and cracking, and retains its high gloss.

Mix Ratio by Weight - 100:11.

3.33 lb. Quart kit P/N 09-01099.....
Case.....P/N 09-01099-1

PRIME COAT PRIMER / FILLER



Prime Coat is a sandable, quick-drying aerosol primer which fills pin holes and scratches caused by sanding on fiberglass, wood, metals and many plastics. Prime Coat will prepare the surface of materials for the finish coat and provides an effective corrosion barrier as well. Prime Coat is zinc chromate yellow and can be used under lacquer, enamel, acrylic or epoxy finish coats. 11 oz. can.

P/N 01-00305

PEEL PLY – PRIMERS – PAINTS

CM



PEEL PLY

A layer of 2.7 oz. Dacron fabric strips or tape laminated into a layup as if it were an extra ply of glass. The peel coat wets out with epoxy like glass cloth and cures along with the rest of the layup. However, the Dacron does not adhere structurally to the glass and when peeled away it leaves a surface ready for glass-to-glass bonding without sanding.

PEEL PLY TAPES

Requirements for Small Aircraft:

- 3 Rolls of 1" x 50 Yds. Tape.....P/N 09-15000 /roll
- 2 Rolls of 2" x 50 Yds. Tape.....P/N 09-15100 /roll
- 1 Roll of 3" x 50 Yds. TapeP/N 09-15200 /roll
- 1 Roll of 4" x 50 Yds. TapeP/N 09-15300 /roll

Quantity Discount: **10% on 12 Rolls; 15% on 25 Rolls(assorted).**



DACRON FABRIC FOR HOMBUILT AIRCRAFT

Easily controlled shrinkage by the application of heat by either a conventional steam iron or other heat source assures a professional covering job even on the first attempt. May be coated with aircraft dope, epoxies or other finishes as acceptable to the FAA. Dacron is available in many weights and weaves but three types have been selected as being most suitable as an aircraft covering material. The tensile strength of Grade A and Irish Linen aircraft fabrics is 80 lbs. which may be used as a comparable standard in selecting the proper Dacron fabric weight for a specific application. 1.8 oz. lightweight material which is generally used on gliders and over plywood. 2.7 oz. fabric is comparable in strength to Grade A. The finer weave assures an ultra-smooth texture-free finish. The 3.7 oz. material is a heavy duty fabric for extraordinary service. Sold by the yard. NOT for use on certified aircraft.

- 1.8 OZ X 60", 611.....P/N 09-00100
- 2.7OZ, 62 W #604.....P/N 09-00300
- 605 2.97 OZ X 66.....P/N 09-00500

MOLD RELEASE AGENTS

POL-EASE® 2300 MOLD RELEASE

Provides superior release with minimum buildup on mold surfaces for casting urethane elastomers, epoxy, polyester, and rubber compounds. Molded parts are easily cleaned for finishing operations. It is effective on aluminum, steel, epoxy, polyester, and elastomeric molds; it does not distort intricate patterns. P/N 01-31749



MAXIMUM MOLD RELEASE WAX

Meguiar's® Mold Release Wax is a blend of imported waxes specially formulated to provide a maximum number of releases per application. P/N 01-09415.....



MOLD RELEASE WAX

High-temperature paste wax. 14 oz. P/N 01-00177



FIBERGLASS MOLD RELEASE

Plastlease 512B, a film-forming, water soluble parting agent, assures clean release of fiberglass parts from molds. For application by brush or spray. P/N 01-30600..... /qt.



LPS MRX SILICONE MOLD RELEASE

Excellent for releasing molded parts in high temperature and extreme pressure environments. MRX Silicone Spray Mold Release provides maximum releases and superior value for the end-user. This non-staining, non-corrosive mold release is heat stable up to 500°F. It is a nonflammable product and contains no class I or II ozone depleting chemicals. Like all LPS MR-series mold releases, MRX Silicone Spray Mold Release doesn't use Methylene Chloride. 16 oz. aerosol can.....P/N 09-00271 /qt



PVA RELEASE FILM

PVA (Polyvinyl Alcohol) should be used with #1016 Wax to aid in the release of parts from a mold. It should be applied in 3 thin mist coats over nonporous, waxed mold surfaces. After the final wax coat has dried, begin by spraying a light tack coat of PVA. Typically, within 5 mins. the final heavier coats can be added. The PVA dries to form a smooth, glassy film. After part release, the residual film can be removed with water. We recommend using an inexpensive automotive siphon spray gun and 70-90 psi for application, although airbrushes will work on hobby size projects. PVA can also be sprayed over any polyester repair to provide an airless tack-free cure. For use with epoxies. P/N 01-14813A..... /qt



ZOLATONE COCKPIT PAINT

Used to paint cockpit interiors, excellent on fiberglass. Gives a coarse, durable, professional finish. 1 gallon required for Long-EZ cockpit. Primer not required when used on fiberglass. Color chart available on request.

| Color | Use Primer | Part No. | Price |
|-----------------|------------|----------|----------|
| White/White | White | 20-02 | \$99.75 |
| Black/Black | Black | 20-06 | \$99.75 |
| Apollo Gray | - | 20-11 | \$99.75 |
| Hamlet Black | - | 20-42 | \$99.75 |
| Camille White | White | 20-54 | \$99.75 |
| Lilith Charcoal | Black | 20-59 | \$99.75 |
| Marble Stone | - | 20-63 | \$99.75 |
| Gray Stone | Gray | 20-64 | \$99.75 |
| Onyx Black | - | 20-71 | \$99.75 |
| Silver Gray | Gray | 20-72 | \$99.75 |
| Bright Blue | - | 20-77 | \$113.95 |
| Dark Red | - | 20-78 | \$113.95 |
| Desert Camo | Black | 20-80 | \$99.75 |
| Emerald Green | - | 20-85 | \$113.95 |

ZOLATONE PRIMER

Order 1 Qt. Colored Primer and 1 Qt. Catalyst

| Color | Part No. | Price |
|--------------------------------------|----------|---------|
| Zolatone Epoxy Primer White Quart | 01-00994 | \$31.95 |
| Zolatone Epoxy Primer Gray Quart | 01-00995 | \$31.95 |
| Zolatone Epoxy Primer Black Quart | 01-00996 | \$31.95 |
| Zolatone Epoxy Primer Catalyst Quart | 01-00997 | \$27.85 |

ZOLATONE POWER SPRAY KIT

Perfect for applying Zolatone on small objects or touching-up any Zolatone coating application, the Power Spray Kit is convenient and easy to use. Simply pour zolatone into the plastic Power Spray Jar using a funnel or small dip cup. Attach jar to Power Sprayer assembly with propellant can and you're ready to go. The spray nozzle has been designed specifically for Zolatone coatings. The Power Spray Kit includes enough propellant to cover approximately 14sq.ft. (depending on distance from object, number of coats, and precise pattern desired.) Replacement cans of propellant are available so you can use the Power Spray Kit over & over.



- Power Spray KitP/N 09-00266
- Replacement Prop Can.....P/N 09-00267

DUPONT FILL 'N SAND

Du Pont 210-S is a dark gray waterbased primer surfacer which provides an effective ultraviolet radiation barrier as well as an excellent finish-sanding surface in preparation for the finish paint. Any DuPont top coats - acrylic lacquer, acrylic enamel or polyurethane (Imron) - will go well with 210-S. RAF recommends urethane paint over lacquer or enamel as it is tougher, more flexible and adheres best. It is also strongly recommended that one recognized paint manufacturers' products be used throughout, from the primer through the top coat. Du Pont 210-S replaces 131S and 3011-S primers formerly recommended by RAF.



- DuPont Fill 'N Sand (Quart).....P/N 01-00378 Qt. .
- DuPont Fill 'N Sand (Gallon).....P/N 01-00379Gal. .

Quantity Discount: **15% on 12 each, (assorted)**

HI GLOSS CLEAR POLYESTER TOP COAT

Features: * Super Clear - Glass like appearance * Scratch Resistant * Buffs to a Super Hi-Gloss Finish * Refinishes to Original Hi-Gloss * Practically a Walk-A-Way Gloss Finish **Product Applications:** * Exotic wood coating * Gel coat additive for air cure application * Musical instrument wood coating * Top coat over clear primers * Top coat over pigmented colors for clear depth * Automotive interior composite parts clear coating * Archetctural wood crafts
QuartP/N 09-02168



Gallon.....P/N 09-02169

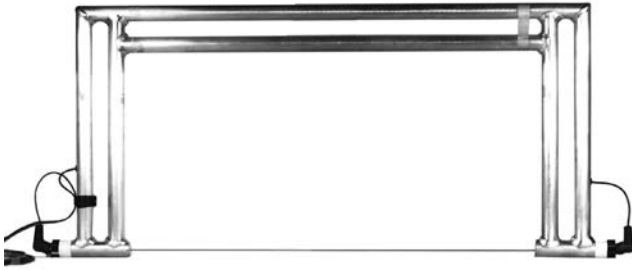
COMPOSITE TOOLS

CM

AIRCRAFT DESIGNER APPROVED TOOLS

The tools offered in this section have been selected by professional aircraft designers and builders as being either necessary or highly desirable for working with composite structures.

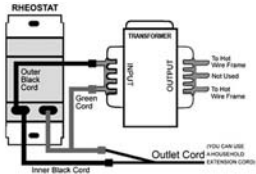
KUT-MASTER FOAM CUTTING FRAME



These custom-built foam cutting frames can help produce professional results in foam cutting for the amateur builder. Constructed of 1-1/8" O.D. aluminum tubing, the heli-arc welded frame is lightweight yet extremely durable. The frames come completely pre-wired and ready to attach to the voltage controls shown below, and a tensioning system maintains uniform wire tension throughout the cutting process. The frames are stocked in 3 standard lengths, and custom frames are available on request (send sketch). Cutting depth is 11". Weight- 5 lbs.

- 2 Ft. Frame P/N 01-15200
- 3 Ft. Frame P/N 01-15300
- 4 Ft. Frame P/N 01-15400

HOMEBUILDERS SPECIAL HOTWIRE KIT



An excellent new hot wire system consisting of a controller and transformer. Recommended by Rutan Aircraft Factory as a good system at a very economical price.

P/N 01-15600



SAFETY WIRE

Type 302 stainless steel safety wire, for hot wire cutter. This is superior to nichrome wire, which is brittle and breaks easily. Specify .032" or .041" diameter wire.

- .032" Dia. Wire, 25 Ft. Coil..... P/N 01-15725
- .041" Dia. Wire, 25 Ft. Coil..... P/N 01-15825
- 1 Lb. Spool..... P/N 05-02687



INCONEL 600 HOT WIRE

Does not stretch. Excellent for hotwiring polystyrene foam.

- .032" Dia. Wire P/N 01-15805 ft.
- .041" Dia. Wire P/N 01-15810 ft.



MUSIC WIRE

Music wire is high carbon steel and although very high in tensile strength, must be capable of wrapping around itself without showing signs of cracking. 156 ft. of .049" dia. wire per lb., 46 ft. of .090" dia. wire, per lb. 22 Gal.

- .049" Dia. (1 lbs.)..... P/N 03-49500
- .090" Dia. (32Ga., 1lbs.) P/N 03-49600

TYPE 302 STAINLESS SPRING WIRE

- 062" Dia..... P/N 03-49610..... ft



MICHAEL ENGINEERING EPOXY RATIO PUMPS

This highly recommended pump, aptly called "Sticky-Stuff Dispenser", will save about \$50 in epoxy in building a VE type aircraft, plus time, mess, dermatitis, temper and risk of bad batches. Used by individual craftsmen and professionals alike, it is a practical engineering tool especially designed to eliminate the sticky, messy, costly hand proportioning of epoxy resins. It is well built and should last through the construction of dozens of aircraft. The Sticky-Stuff Dispenser assures accurate

measurement of low-viscosity (under 3,500 centipoises) unfilled epoxy resin. The standard Model A dispenser pump delivers a ratio of 100 parts of resin to 44 parts of hardener.

- Adjustable Ratio Pump P/N 01-16010
- Rebuild Kit for 45:100 pump P/N 01-00504
- Small replacement container (qt)..... P/N 01-15920
- Large replacement container (gal)..... P/N 01-15910
- Stainless Steel Check Valve (Use with Jeffco epoxies)
P/N 01-00258

CALRAD VARIABLE VOLTAGE CONTROL



A fine quality control to supply the electrical current for hot-wire cutting of styrofoam & PVC foam. One unit can serve to build many aircraft. Input 115VAC Output variable from 0-130VAC at 5amps Caution - fuse should be inserted in the secondary to protect the control in the event of a short circuit.

Size: 6"h, 5"w, 6"d
Input Cable: 6ft. heavy duty 3-prong
Output Jack: 3 -prong AC jack
Fuse Protected: 5A, 3AG: On/Off
Rocker Type Power Switch
AC Voltmeter: 0-150 VAC.

P/N 01-15500.....

COMPOSITE TOOL KIT

This kit includes an assortment of many of the commonly required tools used in composite construction.

| QTY. | PART NO. | DESCRIPTION |
|---------|---------------|-------------------------------------|
| 1 |20W | Glass Shears |
| 1 box |01-25800 | 500 Mixing Sticks |
| 2 boxes |01-25700 | 12 oz. Mixing Cups |
| 2 boxes |01-25710 | 16 oz. Mixing Cups |
| 10 |01-24899 |3" Plastic Squeegee |
| 10 |09-21200 |1" Disposable Brushes |
| 10 |09-21300 |2" Disposable Brushes |
| 1 |12-01580 |Electronic Scale |
| 2 boxes |01-36550 |Latex Gloves |
| 1 |GLR123D |1/2" x 3" Laminating Roller |
| 1 |GLR12C |1/2" Corner Roller |
| 1 |GLR26 |2" x 6" Plastic Grooved Roller |

Kit - P/N 01-00166

COMPOSITE TOOLS

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DISPOSABLE RESPIRATOR REPLACEMENT PARTS



Dusts, Mists, & Fumes Pre-Filter P/N 01-00382.....
 Fit/Check Filter Cover..... P/N 7500-27.....

GROOVED LAMINATING ROLLERS



These are the standard laminated rollers for wetting out woven roving and mat with polyester resin. Use with epoxy resin for applying tape into corners and for spreading thickened epoxy over large areas for gluing and fairing.

- 1"x 3" P/N 01-01054.....
- 1"x 6" P/N 01-00396.....
- 1"x 9" P/N 01-00383.....
- 2"x 3" P/N 01-00384.....
- 2"x 6" P/N 01-00385.....
- 2"x 9" P/N 01-00386.....
- 1/4" Corner Roller..... P/N 01-00387.....
- 1/2" Corner Roller..... P/N 01-00388.....
- 1/2"x 3" Detail Roller..... P/N 01-00389.....
- 3/4"x 3" Detail Roller..... P/N 01-00390.....
- 3/4"x 6" Detail Roller..... P/N 01-00391.....



EPOXY LAYUP ROLLERS

3" wide roller with stipple adhesive cover. Has excellent stippling action for working out air bubbles in layups and has no tendency to lift the cloth. Use on all major layups. Order frame and cover separately.

Roller Frame Only P/N 01-24902.....
 Cover Only P/N 01-24903.....

PRECISE ACCU-KNIFE SET



Heavy duty cutting edges, Complete knife set. Over 40 blades to choose from.

Specifications: • Blades are made of the highest-grade steel and are ground to razor sharpness for precision cutting.

• Features include positive-holding blade lock • Nonslip handles. Complete with 8 different

handles • 44 sharp blades • An aluminum-oxide, wet/dry sharpening stone • Packed in a handy plastic carrying-storage case with magnets to keep the blades in place

Fine precision cutting tools for the lab-highest quality knife set. Ultra-micro to heavy-duty cutting edges are perfect for corks, paraffin, plant samples, and rubber tubing. Exceptionally sharp knives are ideal for delicate, close-tolerance, accurate cutting needs.

High-grade steel construction - Blades are made of the highest-grade steel and are ground to razor sharpness for precision cutting. Features include positive-holding blade lock, nonslip handles, and a perfect weight for balance.

Over 40 blades - Comes complete with 8 different handles, 44 sharp blades, and an aluminum-oxide, wet/dry sharpening stone. Set is packed in a handy plastic carrying-storage case with magnets to keep the blades in place. P/N 12-00381



DISPENSER FOR MEKP CATALYST

Perfect to measure and pour catalyst. The bottle will hold 16 oz. of catalyst and dispenses liquid safely and accurately from 2.5 to 35 cc. Measurements are instantly repeatable.

P/N 01-08503



RESIN PUMP SYSTEM

Put an end to mess and worry. make mixing small resin batches a snap. Increase accuracy of resin proportions and performance of resins. Each pump measures a liquid output of 30cc.

Pint pump..... P/N 01-00957.....
 Quart pump..... P/N 01-00965.....
 Gallon pump P/N 01-00973.....



STAINLESS STEEL INSTAREAD THERMOMETER

Stainless Steel Instant Read 1: • Dial Thermometer • 0 Degree to 220 Degree F • Shatter-Proof Plastic Lends • Durable Stainless Steel • Plastic Case/Calibrating Tool P/N 01-00394

POST CURE KIT



This kit consists of one post cure thermometer (P/N 01-00394) and 1 regulating thermostat (P/N 2E51) that allows control of electrical devices for heating. P/N 01-00393.....



JIFFY MIXER

This is a very effective 2-1/2" diameter stainless steel mixer on a 15" shaft. Attach to an air drill for fast, efficient mixing of larger batches. It will not dig into or gouge the sides or bottom of your mixing container.

P/N 01-00395

X-ACTO TOOLS



NO. 5282 KNIFE SET -

Nos . 1, 2 and 5 knives plus 10 assorted extra blades Handy, fitted chest.

P/N 01-17300.....

NO. 5083 KNIFE SET -

Nos . 1, 2 and 6 knives plus 14 assorted extra blades in beautiful wooden chest.

P/N 01-17400



X-ACTO BLADE NO. 11 - Classic fine point blade. A general purpose blade. Package of 5. P/N 01-16500



X-ACTO BLADE NO. 18 - X-Acto Blade #18. For deep wood chiseling. 1/2" surface. Package of 5 P/N 01-16600

Other X-Acto items also available. Call for pricing.

COMPOSITE TOOLS

CM

STANLEY TOOLS

STANLEY TAPE MEASURE



This 12 foot steel tape measure, with 1/2" blade, is graduated in tenths and hundredths of inches and also in fractions of inches (32nds). Very handy for all aircraft construction. A "must" for composite construction.
No. 33-272..... P/N 33-272

STANLEY UTILITY KNIFE



Aluminum, die-cast in two sections - provides blade storage. Has handy hang hole. Furnished with No. 11-921 blade and blade guard.
No. 10-099..... P/N 10-099

KNIFE BLADE



Heavy-duty pointed razor-type utility knife blade for No. 10-099 knife and most other makes of utility knives.
No. 11-921 (Pkg. of 5 Blades)
P/N 11-921

HOOK BLADE



For use with No. 10-099 knife and most other makes of utility knives to cut linoleum, roofing material, cartons, etc., without damage. The razor-sharp hooked ends cut to full thickness in one stroke.

No. 11-961 Pkg. of 5 Blades.....P/N 11-961

Quantity Discount: 15% on any 10 Stanley items (assorted)

SPRING CLAMPS

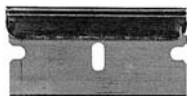


Heavy-gauge steel clamps with vinyl grips and tips to prevent marring work. Jaws specially formed to hold flat or round objects. Two sizes available:

No. 3201-HT – Jaw Opening 1", Length 4"..... P/N 83-261

No. 3202-HT – Jaw Opening 2", Length 6"..... P/N 83-262

SINGLE-EDGE RAZOR BLADES



Used for trimming rough edges of laminates.

P/N 01-24904...../ea.

Box of 100 30% Discount.

DOVETAIL SAW



Cuts a true, smooth and narrow kerf. Comfortable hardwood handle provides positive grip. Professional quality.

No. 15-022..... P/N 15-140

STRAIGHT EDGE



A 6-ft. long kiln-dried spruce board, 7/8" to 1" thick and 3" to 4" wide, used for checking the straightness of flying surfaces during composite construction.

P/N 01-25900.....

6" STEEL RULER



Flexible stainless steel rule graduated in 10ths and 100ths on one side and in quick-reading 32nds and 64ths on the other side.

6 inch..... P/N 616.....

12 inch..... P/N 12-02062.....

FELT TIP MARKERS



Used for marking locations on fiberglass throughout construction.

P/N 01-26000.....

12" LONG DRILL BITS

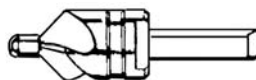


For use with standard electric drill for hard-to-reach jobs.

#10 (.1935" Dia.)..... P/N 12-05500.....

1/4" Dia..... P/N 12-05600.....

COUNTERSINK



This assembly consists of a 1/2" dia. AT418E-4 100° cutter, a 1/4" dia. AT416- pilot and an AT409-1 adapter with 1/4" dia. shank for use with a hand drill. The adapter has a collet-like shaft

to securely hold the replaceable pilot. Add pilot dash number to AT409. To complete part number see tool section for complete selection of pilots.

Complete Assemblies..... **See Page 597**

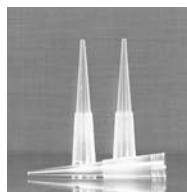
COUNTERBORE

A 5/8" diameter boring tool, with 1/4" diameter pilot. 10" threaded extension is used for boring holes in hard to reach places. Used in the installation of the landing gear on the LongEZ and Cozy aircraft. 3/4" bore does not have 1/4" pilot and must use the pilot received with the 5/8" boring tool.

5/8" diameter w/pilot..... P/N 12-00219

3/4" diameter without pilot..... P/N 12-00220

MINI GLUE TIP



Fits most Yorker top dispenser bottles. Just slip a Mini Glue Tip on spout and seal with a pin. Always ready for use-no fuss to fill, no mess to clean. Made of polypropylene - glues don't stick. For shallow tip bends, heat in water, shape with fingers until cool.

P/N 01-27000..... Pkg. of 4 Tips.....

RUBBER SEALANT



No. 732 RTV general-purpose, clear, one-part silicone rubber. Cures to a firm silicone rubber in 24 hours at room temperature.

4.7 Oz. Tube..... P/N 09-27800.....

COMPOSITE TOOLS

MISCELLANEOUS TOOLS AND SUPPLIES

CM



ROTARY ("PIZZA") CUTTER

Makes clean cuts on fiberglass fabrics and other materials. The disc blade is made of high quality tungsten steel which is very sharp. Used by high-volume composite shops. Use with wooden backing board and handle knife with caution.
 RTY-2 Cutter..... P/N 01-00299.....
 Replacemnt Blade P/N 01-00300.....
 Blades (5 Pack) P/N 01-00301.....

ALUMINUM ROTARY CUTTER FOR COMPOSITE WORK



This all aluminum cutter however, will not "melt" when exposed to acetone, methylene chloride and other chemicals used to clean the cutters after use on wet layups. After use the aluminum rotary cutter is cleaned by simply leaving it in a can filled with acetone.

Aluminum Rotary Cutter..... P/N 09-24906.....

90 DEGREE ALUMINUM ROTARY CUTTER FOR COMPOSITE WORK



This cutter handle is all aluminum with special stainless hardware for easy assembly when changing out rotary cutter blade. Will not melt when exposed to acetone, methylene chloride, and other chemicals. Good for wet layups. To clean, just

drop in small container of acetone. P/N 01-01047.....

PAINT BRUSHES



Natural, undyed bristle brushes with smooth, unpainted wooden handles. Unaffected by paints, dopes, resins, thinners or solvents.
 1" Wide Brush..... P/N 09-21200.....
 2" Wide Brush..... P/N 09-21300.....

RUBBER SQUEEGEE



Developed especially for working with epoxies, this 6", or 36" wide hard rubber squeegee is superior to the plastic types. Can be easily cleaned & reused many times.

6" Squeegee..... P/N 01-24901..... ea
 36" Squeegee..... P/N 01-00012..... ea

NOTCHED SPREADER



This plastic spreader is excellent for spreading epoxy at a steady rate to provide an even surface. Measures 4" x 4" and is notched on three sides in increments of 1/8", 3/16", 1/4".

P/N 01-24909..... ea



GRADUATED TAPER-TIP APPLICATOR

This graduated 2 oz. syringe is ideal for measuring and dispensing precise amounts of resins and other liquids.

P/N 01-25635.....



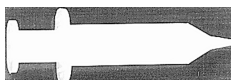
DISPENSER BOTTLE

Polyethylene bottle with Yorker (applicator) cap.

4 Oz. Bottle..... P/N 01-24905.....
 16 Oz. (1 Pint) Bottle..... P/N 01-24906.....

Less 15% for 12 or more

INDUSTRIAL SYRINGE



Made of hi-impact polyethylene with seamless body and special safety-grip plunger. Capacity 10 cc. Tapered dispensing nozzle can be clipped with scissors at proper diameter to govern output. Excellent epoxy

dispenser. P/N 01-25000.....

MIL GAUGES



These color-coded mil gauges are solid anodized aluminum for long life and come in four sizes for a variety of FRP applications. Machined to close tolerances (0.0001") for accuracy and available in mils (inches) and microns (metric).

3-18 mils P/N 01-00411.....
 10-35 mils P/N 01-00412.....
 40-65 mils P/N 01-00413.....
 400-650 microns P/N 01-00410.....

MULTI-MEASURE PLASTIC CONTAINERS



Use again and again for liquid ingredient accuracy. A must-have item when mixing resins. Seal the liquid in the container with the matching sized plastic lid.

1 Qt. mix cup..... P/N 01-00915.....
 1 Qt. lid P/N 01-00926.....
 2.5 Qt. mixing cup P/N 01-00330.....
 2.5 Qt. lid P/N 01-00331.....

EPOXY MIXING CUPS



Unwaxed, flat bottom paper cups in three convenient sizes for small mixes.

3 Oz..... (100 Cups)..... P/N 01-25600.....
 8 Oz..... (50 Cups)..... P/N 01-00416.....
 12 Oz.. (60 Cups)..... P/N 01-25700.....
 16 Oz.. (24 Cups)..... P/N 01-00324.....

MIXING STICKS



These mixing sticks are medical tongue depressors which work well for mixing small batches of epoxy. Size: 3/4" x 6". Box of 500..... P/N 01-25800.....

TAPERED OFFSET SPATULA



This tapered spatula is stainless steel with wood handle. Ideal for making 3/8" radii on bulkheads, ribs, or anywhere a uniform radius is required.

P/N 01-24915..... ea.

COMPOSITE TOOLS

CM

DREMEL TOOLS



DREMEL MOTO-TOOL -

A versatile, precision power tool with many uses in the construction of composite aircraft. Ideal for wood, plastics and metals. Sturdy, shatter-proof nylon housing.

MODEL 100 MOTOTOOL - Constant Speed: 35,000 RPM. Lubricated bronze sleeve bearings. Amps: 0.8

P/N 01-18600.....

MODEL 395 MOTOTOOL - Variable Speed: 5,000-28,000 RPM with 100% ball bearing construction for long life, smooth operation. External caps allow for easy replacement of motor brushes. Amps: 0.75 (low speed), 0.9 (high speed)..... P/N 01-18700

DREMEL KIT 2850D - SINGLE SPEED MULTIPRO KIT

Helps any do-it-yourselfer completes all kinds of projects. Contains Single Speed MultiPro Tool, Quick Change Collet Nut, Accessory Holder, Wrench, 15 assorted Accessories and 175+ uses book.

P/N 01-18800



DREMEL KIT 2850 - TWO SPEED MULTIPRO KIT

Ideal for multiple applications on a variety of materials. Contains Two Speed MultiPro Tool, Quick Change Collet Nut, Customized Storage Case, Wrench, 30 assorted Accessories and 175+ uses book.

P/N 01-38000



DREMEL KIT 3956 - VARIABLE SPEED MULTIPRO SUPER KIT

Includes flex-shaft for precision hands free operation. Cut, grind, carve, rout, sharpen, drill, polish, sand and more. Contains Variable Speed MultiPro Tool, Flex-shaft Attachment, "New" Customized Storage Case, Wrench, 72 assorted Accessories and 175+ uses book.

P/N 01-00130



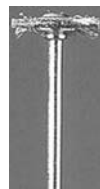
MULTIPRO CHUCK

The Dremel MultiPro chuck allows you to quickly and easily change accessories on your Dremel MultiPro rotary tools without changing collets. Will accept accessories with 1/32" - 1/8" shanks. Use only with corded MultiPro tool models 275, 285, 395, 595.

P/N 01-00131



NO. 402 MANDREL - For use with all cutting wheels, sanding discs and polishing wheels. 1/8" shank. P/N 01-22000.....



NO. 428 WIRE BRUSH - VE builder reports it works beautifully for cleaning the residual foam and micro off of the canard, wing and winglet trailing edge overlaps in preparation for the top skin layups. Do not run in excess of 15,000 RPM P/N 01-22100.....

REPLACEMENT MOTOR BRUSHES - (Specify Moto-Tool Model No.) P/N 01-18701..... **per pair .**

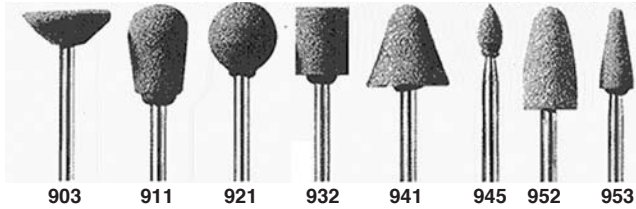
COMPOSITE TOOLS

DREMEL TOOLS

CM

ALUMINUM OXIDE GRINDING STONES

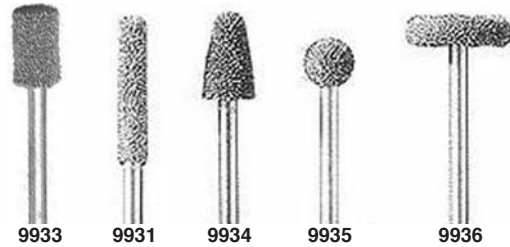
Use on metals, castings, welded joints, rivets and rust. Ideal for sharpening, deburring and general purpose grinding of most materials.



| Cutter | Part No. | Price | Cutter | Part No. | Price |
|--------|----------|-------|--------|----------|-------|
| #903 | 01-00134 | . | #941 | 01-00132 | . |
| #911 | 01-00135 | . | #945 | 01-00138 | . |
| #921 | 01-00136 | . | #952 | 01-00139 | . |
| #932 | 01-00137 | . | #953 | 01-00140 | . |

STRUCTURED TOOTH TUNGSTEN CARBIDE CUTTERS

Fast cutting sharp teeth for greater material removal. Use on fiberglass, wood, plastic, epoxy, rubber, laminates, particle board, soft metals, ceramic tile.



| Cutter | Part No. | Price | Cutter | Part No. | Price |
|--------|----------|-------|--------|----------|-------|
| #9931 | 01-00148 | . | #9934 | 01-00152 | . |
| #9933 | 01-00151 | . | #9935 | 01-00153 | . |
| | | | #9936 | 01-00154 | . |



| Cutter | Part No. | Price | Cutter | Part No. | Price |
|--------|----------|-------|--------|----------|-------|
| #954 | 01-00141 | . | #8175 | 01-00145 | . |
| #971 | 01-00142 | . | #8193 | 01-00146 | . |
| #997 | 01-00143 | . | #8215 | 01-00147 | . |
| #8153 | 01-00144 | . | | | |



NO. 407 1/2" DRUM SANDER - Ideal for rough shaping of wood and smoothing of fiberglass. Sander bands are replaceable. Furnished w/ one band. 1/8" shank

P/N 01-19000

NO. 408 DRUM SANDER BANDS - 1/2" Diameter, Coarse grit. Two packages of 6 are required for the VE.

P/N 01-19100

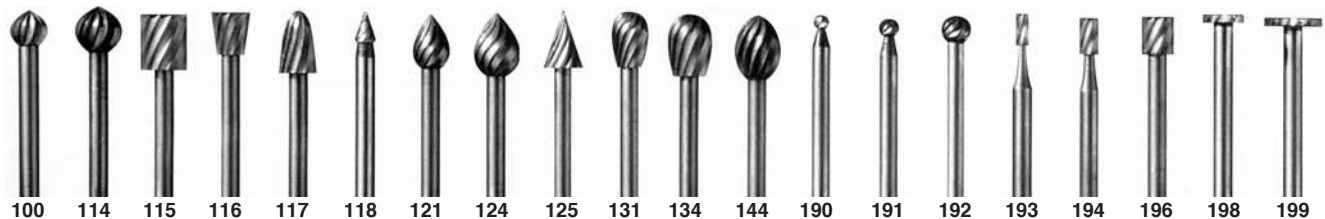


DREMEL 543 CUTTING / SHAPING WHEEL - For cutting and shaping on soft and hard woods, fiberglass, plastics and laminates (not metal.) This versatile wheel is coated with tungsten carbide grit for long life. It is coated on both sides, so it cuts and finishes in one operation.

P/N 01-01056

HIGH SPEED CUTTERS

High Speed Cutters can be used for shaping, hollowing, grooving, slotting, making tapered holes in soft metals, plastics and woods. Number 198 and 199 cutters can be used to make small slits.



| Cutter | Part No. | Price | Cutter | Part No. | Price | Cutter | Part No. | Price | Cutter | Part No. | Price | Cutter | Part No. | Price |
|--------|----------|-------|--------|----------|-------|--------|----------|-------|--------|----------|-------|--------|----------|-------|
| #100 | 01-19200 | . | #117 | 01-21000 | . | #125 | 01-21300 | . | #190 | 01-20200 | . | #192 | 01-20400 | . |
| #114 | 01-19300 | . | #118 | 01-21200 | . | #131 | 01-19700 | . | #191 | 01-20300 | . | #196 | 01-20700 | . |
| #115 | 01-20800 | . | #121 | 01-19400 | . | #134 | 01-19800 | . | #193 | 01-20500 | . | #198 | 01-21600 | . |
| #116 | 01-20900 | . | #124 | 01-19600 | . | #144 | 01-20000 | . | #194 | 01-20600 | . | #199 | 01-21700 | . |

SANDING TOOLS

CM

SANDING STICK



Our Sanding Stick is ideal for aircraft builders, hobbyists, machinists, or anyone who needs to finish those hard to reach surfaces. It is made of high impact chemical resistant

material and its unique design allows the user to rotate the abrasive belt 360° for its complete use. Sanding Stick is excellent for polishing, deburring, or sanding wood, metal, ceramics, and electronics, and can be used dry or with water, acetone, kerosene, or oil. Order different colored holders for easy grit identification. Order holders and belts separately.

Sanders: Complete the Holder part number by adding correct numbers for the holder color desired. Complete with 10 (gray), 20 (red), 30 (blue) 40 (green), 50 (yellow), or 60 (black). Example: 01- 41140 is a green holder in 1/2" x 8" size.

- 1/4" x 6" P/N 01-410
- 1/2" x 8" P/N 01-411
- 3/4" x 10" P/N 01-412

Belts: Complete the Belt parts number by adding the correct numbers for the belt grit desired. Complete with 080 (80 grit), 120 (120 grit), 240 (240 grit), 320 (320 grit), 400 (400 grit), or 600 (600 grit). Example: 01-43400 is a 1/2" x 8" belt in 400 grit.

- 1/4" x 6" P/N 01-42
- 1/2" x 8" P/N 01-43
- 3/4" x 10" P/N 01-44

SANDING BLOCK

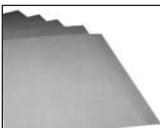


A hard rubber tool which comfortably fits the hand for scratch- to finish-sanding. Used by professionals for years in all sanding operations. Simply cut a piece of sandpaper 2-3/4" x 9" and insert each end into the sanding block. Paper is held securely by nail retainers. Makes

the sanding operation much easier.

Model No. 100..... P/N 01-26400.....

SANDPAPER



The weights and grits listed have been found to be the most effective for sanding fiberglass/epoxy surfaces. Sheet Size: 9" x 11".

| Sandpaper Type | | Part No. | Price /Sheet Less than 50 Sheets |
|---------------------------|-------------------------|----------|--|
| Aluminum Oxide 36 Grit | Open Coat "D" Weight | 01-26200 | . |
| Silicon Carbide | | | |
| 100 Grit | "C" Weight | 01-37700 | . |
| 220 Grit | "A" Weight | 09-20600 | . |
| 320 Grit | "A" Weight | 09-20800 | . |

SANDPAPER 3M™

Wet or dry Tri-M-Ite (3M) is a silicon carbide abrasive paper made especially for producing satin-smooth finishes on metal and other doped, lacquered or enameled surfaces. Wet or dry performs best when used with water or oil, but can also be used dry. Sheet size 9" x 11". Available in 220-A, 280-A, 320-A or 400-A grit.

(Type A paper has an especially light, flexible backing).



| Sandpaper Grit Size | Part No. | Price/ Sheet |
|---------------------|----------|--------------|
| 120-A | 09-20550 | . |
| 220-A | 09-20600 | . |
| 280-A | 09-20700 | . |
| 320-A | 09-20800 | . |
| 400-A | 09-20900 | . |

FOR OTHER 3M™ PRODUCTS SEE PAGES 345-352

CURVED TOOTH FILE



Milled files designed for smooth, fast work on annealed steels, hard plastics and composite materials. 14" length, 1-11/32x5/16 sections, 8 teeth per inch. P/N 01-00392.....

PREPPIN' WEAPON SANDING BLOCK



Preppin' Weapon is a handy sanding block made of Styrofoam core and high impact ABS that won't break when dropped. Easy to grip for wet or dry sanding. Contoured to fit the shape of a hand and is sized to fit a 1/4" sheet of plain backed 8 x 11 sandpaper or a 2 3/4" wide file paper. It's coil spring design holds single or multiple sheets equally tight and saves reloading time by stacking up to 4 sheets and tearing them away as the abrasive wears out. Save reloading time by using col-

ors to indicate grits. Excellent for builders of aircraft, boats, cars, etc.

- Yellow P/N 12-00505
- Red P/N 12-00506
- Green P/N 12-00507

MINI-SANDER



A unique sanding tool which uses a 1-1/2" wide strip of sandpaper formed to make a belt. Locked taut by a patented mechanism that snaps into place with a finger pull. Its knife edge sides and padded body sand close to right angle fittings & fit into small concave recesses. Sander body is 7/8"h x 4"l and made of high impact plastic. Buy ready-made

belts or make your own (6 belts from standard sheet).

- Mini-Sander P/N 01-26800
- Wet or dry Mini-Strips, 3 - #500, 3 - #320, 3 - #220
- Pkg. of 9 Strips..... P/N 01-26900
- New Continuous Belts (load free) Aluminum Oxide #120
- Package of 3 P/N 01-26910
- New Continuous Belts (load free) Aluminum Oxide #220
- Package of 3 P/N 01-26915

PERMA-GRIT CONTOUR SANDING BLOCKS

These user friendly sanding blocks are made from extruded, anodized aluminum. The 32mm (1.25") Radius Curve is covered on the external and internal radius with Tungsten Carbide abrasive sheets. The Contour Blocks come in either the Coarse (60US grit approx.)



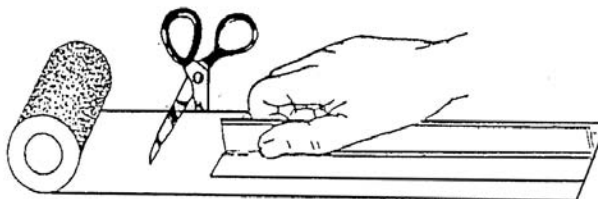
or Fine (120US grit approx.) Small block is 5.5" long and large block is 11" long.

Benefits:

- Shape and sand curves, grooves, etc. quickly and easily
- Great for fillets, leading edges, under cambers, etc.
- Extremely tough, will not wear out like normal sandpaper
- Will last for years without having to change the sheets
- Does not clog easily (brush or knock out)
- Easy to remove glues, resins, paint, epoxy etc. w/ paint remover

- 140MM Contour Block (COURSE) P/N 01-00591
- 140MM Contour Block (FINE) P/N 01-00592
- 280MM Contour Block (COURSE) P/N 01-00593
- 280MM Contour Block (FINE) P/N 01-00594

TEE BAR ALUMINUM SANDING BLOCKS



These Tee Bar sanding blocks provide a large, straight, and flat sanding surface which won't wear out. Easy to hold, can be used over and over and are permanently anodized. These blocks can help provide straighter and truer surfaces. The self-adhesive sanding strips can be cut to any length, are clean and neat, do not need glue and do not peel. Furnished in handy 3" wide x 5 yard rolls and available in various grits.

- 11" Aluminum Tee Bar P/N 01-25008
- 22" Aluminum Tee Bar P/N 01-25007
- Silicone Carbide Superfine Sanding Strip P/N 01-25001
- Silicone Carbide Fine Sanding Strip P/N 01-25002

PERMA-GRIT HAND TOOLS

HAND TOOLS

Perma-Grit Tools are made of Tungsten Carbide Grit, one of the hardest elements available, second only to diamonds. They are specifically designed and developed for aircraft builders, woodworkers, and modelers. These tools will cut, sand and shape tough composite materials, saving homebuilders hours of building time. Ideal for fuselage shaping and wing building, these tools are highly recommended by several kit-plane manufacturers. Available in coarse (180) & fine (320) grit.



| Model No. | Part No. | Description | Price |
|-----------|----------|---|-------|
| F-101 | 12-00040 | 230mm x 38mm Flat Fine File | . |
| F-102 | 12-00041 | 230mm x 38mm Flat Coarse | . |
| R-200F | 12-00042 | 230mm x 26mm / 36mm diameter Fine | . |
| R-200C | 12-00043 | 230mm x 26mm / 36mm diameter Coarse | . |
| R-201C | 12-00044 | 230mm x 38mm Tangent Coarse | . |
| R-201F | 12-00045 | 230mm x 38mm Tangent Fine | . |
| R-202C | 12-00046 | 18mm diameter tube Coarse | . |
| R-202F | 12-00047 | 18mm diameter tube Fine | . |
| R-203C | 12-00048 | 12mm diameter tube Coarse | . |
| R-203F | 12-00049 | 12mm diameter tube Fine | . |
| R-204C | 12-00050 | 6 mm round Coarse grit | . |
| R-204F | 12-00051 | 6 mm round Fine grit | . |
| S-204C | 12-00052 | 6 mm square Coarse grit | . |
| S-204F | 12-00053 | 6 mm square Fine grit | . |
| R-101 | 12-00054 | 230mm x 38mm diameter Internal Fine grit | . |
| R-102 | 12-00055 | 230mm x 38mm diameter Internal Coarse grit | . |
| Set 8C | 12-00056 | contains: 8 popular shapes in Tool Roll F-101, F102, R-200C, R-201C, R-202C, R-203C, R-204C, S-204C | . |
| Set 8F | 12-00057 | contains: 8 popular shapes in Tool Roll F-101, F102, R-200F, R-201F, R-202F, R-203F, R-204F, S-204F | . |
| TR1 | 12-00058 | Tool Roll - Holds 8 tools, red plastic w/velcro fastener | . |

CM

ROTARY FILES

Supplied with a 3mm integral arbor so they may be used in reversible drive drills and hobby drills. These files are well balanced and run smoothly, and cut a wide range of materials with little need for secondary finishing. Available in coarse and fine grit.



| Model No. | Part No. | Description | Price |
|-----------|----------|-------------------------|-------|
| RF1C | 12-00070 | Narrow Cone coarse | . |
| RF1F | 12-00071 | Narrow Cone fine | . |
| RF2C | 12-00072 | Wide Cone Coarse | . |
| RF2F | 12-00073 | Wide Cone Fine | . |
| RF3C | 12-00074 | Drum Coarse | . |
| RF3F | 12-00075 | Drum Fine | . |
| RF4C | 12-00076 | Pancake Coarse | . |
| RF4F | 12-00077 | Pancake Fine | . |
| RF5C | 12-00078 | Domehead Coarse | . |
| RF5F | 12-00079 | Domehead Fine | . |
| RF6C | 12-00080 | 1/8 diameter Rod Coarse | . |
| RF6F | 12-02247 | 1/8 diameter Rod Fine | . |

ROTARY CUTTING DISCS

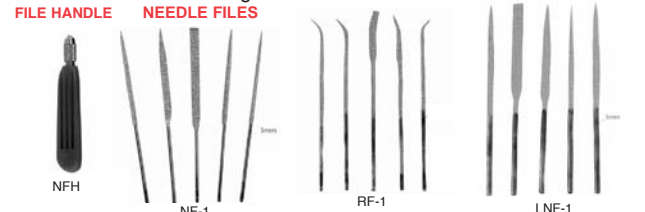


These durable cutting discs are available in two sizes (19mm and 32mm) and come complete with a 3mm steel arbor to fit hobby drills. Will cut all woods, piano wire, composites, ceramics, stone, etc.

| Model No. | Part No. | Description | Price |
|-----------|----------|-------------------------------|-------|
| RD1 | 12-00067 | 19mm diameter disc with arbor | . |
| RD2 | 12-00068 | 32mm disc with arbor | . |
| RD3 | 12-00069 | 19 & 32mm disc with arbor | . |

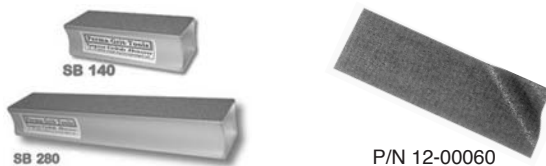
NEEDLE FILES

These extremely versatile tools are excellent for shaping and finishing. They will cut in any direction and do not clog easily. Our needle files cut quickly and leave an excellent finish. Very popular for detail work. Furnished in Medium 280 grit. **RIFFLER FILES** **LARGE NEEDLE FILES**



| Model No. | Part No. | Description | Price |
|-----------|----------|---|-------|
| NF1H | 12-00081 | Set of 5 needle files w/ Handle | . |
| NF1 | 12-00082 | Set of 5 needle files w/o Handle | . |
| NF-F | 12-00083 | Flat needle file | . |
| NF-K | 12-00084 | Knife needle file only | . |
| NF-R | 12-00085 | Round needle file only | . |
| NF-S | 12-00086 | Square needle file only | . |
| NF-T | 12-00087 | Triangle needle file only | . |
| RIF-1 | 12-00088 | HSet of 5 Riffler files w/ Handle | . |
| RIF1 | 12-00089 | Set of 5 Riffler files w/o Handle | . |
| RIF-F | 12-00090 | Flat Riffler file only | . |
| RIF-H | 12-00091 | Half-round Riffler file only | . |
| RIF-R | 12-00092 | Round Riffler file only | . |
| RIF-S | 12-00093 | Square Riffler file only | . |
| RIF-T | 12-00094 | Triangle Riffler file only | . |
| LNF-1 | 12-00095 | Set of 5 Large needle files / no handle | . |
| LNF-F | 12-00096 | Flat Large needle file only | . |
| LNF-H | 12-00097 | Half-Round Large needle file only | . |
| LNF-R | 12-00098 | Round Large needle file only | . |
| LNF-S | 12-00099 | Square Large needle file only | . |
| LNF-T | 12-00100 | Triangle Large needle file only | . |
| NFH | 12-00101 | Needle File handle only | . |

SANDING BLOCKS & FLEXI-STRIPS



These versatile sanding blocks are ideal for sanding large areas, creating straight edges, producing dihedral angles, profiling leading edges, feathering trailing edges, and more. The sanding blocks are coarse grit on one side and fine grit on the opposing side. The flexible grit strips can be cut and shaped to any form, external or internal.

| Model # | Part No. | Description | Price |
|---------|----------|---|-------|
| SB140 | 12-00064 | 140mm x 51mm Coarse one side, fine opp. | . |
| SB280 | 12-00065 | 280mm x 51mm Coarse one side, fine opp. | . |
| SB560 | 12-00066 | 560mm x 51mm Coarse one side, fine opp. | . |
| FXT-103 | 12-00060 | 51mm x 280mm Fine Grit Strip | . |
| FXT-104 | 12-00061 | 51mm x 280mm Coarse Grit Strip | . |
| FXT-106 | 12-00062 | 51mm x 140mm Fine Grit Strip | . |
| FXT-107 | 12-00063 | 51mm x 140mm Coarse Grit Strip | . |

3/8" INCH NEEDLE FILE KIT WITH HANDLE

Set of 5 files: Hand, Round, Halfround, Square and 3-Square. Extremely versatile tools, popular for detailed work. These file cuts in any direction and does not clog easily. Cuts quickly leaving an excellent finish. P/N 12-01752.....

LARGE NEEDLE FILE HANDLE

Comfortable plastic handle with brass collet to accept all large (18cms) needle files. Overall length 115mm. Collect 5mm P/N 12-01927.....

COMPOSITE SAFETY EQUIPMENT

CM

Adequate safety protection cannot be stressed too highly. Eyes, lungs, and skin are exposed to harmful chemicals and abrasive objects which can be discomforting or permanently disabling. Always wear glasses when working with the Dremel grinder to protect the eyes from flying particles. Sanding or grinding fiberglass and foams creates dust that can be harmful to the lungs. Use a dust respirator mask or a disposable type. Many individuals will develop an allergy when working with epoxy with bare hands. Skin protection measures should always be taken.



INVISIBLE GLOVES #1211

Invisible Gloves #1211 are a soft paste-like substance that when applied to hands provide protection against caustic and carcinogenic chemical products including hydraulic fluid, paints, ink, MEK, zink chromate, jet fuel, graphite, engine exhaust by-products, adhesives and much more. Invisible Gloves meets military and industrial safety standards and can protect any area of the body (hands, arms, face, legs, etc...) exposed to hazardous products. Especially useful in working with materials used in composite aircraft construction. One pint yields 100 pair of gloves. Invisible Gloves #1211 are easily removed with water. Allows complete freedom of hand and finger movement. Hands will not heat up and tools will not slip.

P/N 12-15800/pint



GLOVES IN A BOTTLE

Protect your hands with a protective skin lotion called Gloves in a Bottle. Perfect for homebuilders, particularly those who work with composite aircraft, it binds with skin, forming an invisible pair of gloves to help protect against machinery and chemicals. It also protects against cracking and drying due to cold weather. Conventional lotions try to replace natural moisture with artificial moisture, but they come off when you wash or touch something. Gloves in a bottle keeps moisture-robbing irritants out while helping to retain your skin's natural moisture, resulting in better-hydrated skin. When applied, the invisible gloves are undetectable once they dry and last four hours or more. They come off naturally with exfoliated skin cells. FEATURES: • Fragrance and colorant free, hypoallergenic, non-greasy, non-sticky • Turns the outer layer of skin into what works like an invisible pair of gloves • Will not wash off. Literally becomes part of the outer layer of skin itself and comes off naturally with the outer layer of skin • Used and recommended by many hundreds of dermatologists and many thousands of other health care professionals • Keeps out irritants that rob the skin of natural oils and moisture and helps retain skin's own natural oil and moisture • Conventional lotions only attempt to replace natural moisture with artificial moisture but they don't really work because every time you wash or touch something they come off.

2 oz. P/N 01-00655
8 oz. P/N 01-00656

SERIES 8 WASH-OFF HAND PROTECTION



SERIES 8 - A less expensive "clone" of the famous PR88 hand creme developed in Europe, Series 8 is highly recommended by Rutan Aircraft Factory for working with epoxies. It protects hands from most epoxies, grease, oil paint, paste, gasoline, tar, lacquer, acetone, styrene, fiberglass and many more substances. It helps prevent chapping, cracking and drying of hands, and is an excellent aid to persons with sensitive skin. No soap is needed for cleanup - hands wash clean with water alone.

4 Oz. Plastic Cup P/N 13-38302
32 Oz. (Qt.) Plastic Jar P/N 13-38306

PLY NO. 9 PROTECTIVE HAND GEL

Provides a thin, invisible, flexible film which is an excellent barrier to epoxy resins, rubber adhesives, vinyl plasticizers, polyester resins and glass fibers. Epoxy and gel wash off easily in soap and water.

One-Lb. Jar P/N 01-36100.....



DENATURED ALCOHOL

Can be mixed with soap and water. Is harmless to rubber. Use as a solvent for thinning, removing and cleaning epoxy, brushes, and equipment.

Gallon P/N 01-00399



REPLACETONE

Cleans polyester and epoxy resins from tools and hands without the hazards associated with chemical cleaning solvents. It is a non-volatile, non-flammable, and a biodegradable replacement for acetone and MEK solvents. Replacetone separates resins to the bottom of the cleaning container, but it does not dissolve them. Pour off non-emulsified Replacetone and use again.

Quart P/N 01-08823
Gallon P/N 01-08834



LATEX GLOVES

Disposable but reusable gloves which resist tearing. Large size. Fits right or left hand. Box of 100.

P/N 01-36550



COTTON GLOVES

Lightweight liners - wear under latex gloves. More comfort, improved sensitivity.

P/N 01-36600/Pair

BUTYL GLOVES

These gloves are resistant to the permeation of epoxy resins and curing agents and have been found to offer by far the best protection of any glove available.

P/N 01-36700



TYVEK SUITS

These are the tough, full-body suits with hoods that professional painters use. Available in extra large or extra extra large.

X-Large P/N 01-36800

XX-Large P/N 01-36805



MAXSHIELD DISPOSABLE PROTECTIVE CLOTHINGS



FULL BODY COVERAGE: RECYCLED TYVEK® - Jumpsuit with Hood Covers. It's the ultimate protection in a Tyvek® jumpsuit, covering you from head to toe with an integrated hood and elastic-topped shoe covers. If you work in an environment where it's important to keep a barrier between you and microscopic particles, this is the Tyvek® jumpsuit for you.

| Size | PN | Price |
|--------|--------------|-------|
| Small | 12-01827-S | . |
| Medium | 12-01827-M | . |
| Large | 12-01827-L | . |
| XL | 12-01827-XL | . |
| XXL | 12-01827-2XL | . |



THE TYVEK® SUIT - The Lowest-Priced Recycled Coverall. You work with messy stuff... dirt, paint, solvents, chemicals, oil, grease. Protect your skin and clothing with an affordable barrier garment - the Tyvek® suit. These multipurpose suits are so durable you can wear them over and over. But they're priced so low, you can afford to throw them away when it's time.

| Size | PN | Price |
|--------|--------------|-------|
| Small | 12-01826-S | . |
| Medium | 12-01826-M | . |
| Large | 12-01826-L | . |
| XL | 12-01826-XL | . |
| XXL | 12-01826-2XL | . |



RECYCLED TYVEK® APRONS - The Better-Than-Plastic Apron. A regular throw-away plastic apron might be good enough for small jobs. But for complete protection from food splashes, hot oil, dangerous chemicals, and other big messes, the serious professional chooses a Tyvek® apron. Features: • Bib style for full protection. • 28" x 36" in size. • Serged seams for strength. • Long ties to customize the fit, PN 12-01824.....



TYVEK® DISPOSABLE SHOE COVERS - Boot Covers High top boot covers w/elastic top. PN 12-01825



TYVEK® DISPOSABLE - Shoe Covers, Boot Covers With a Tyvek® disposable shoe covers you don't have to compromise. That's because Tyvek® disposable shoe covers deliver the best balance of protection, durability and comfort. PN 12-01995

SPRUCE SPARS – CAPSTRIP – STRINGERS

GENERAL ORDERING INFORMATION

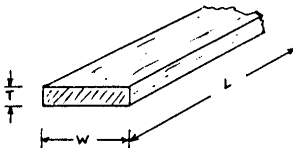
Aircraft spruce spars are available either S2S (surfaced 2 sides, top & bottom, with rough edges in 4" & 6" nominal width) or S4S (surfaced all 4 sides to thickness & width). Prices in table below are for S4S spars. If S2S is desired so builder can trim to exact width, specify S2S and use 4" or 6" width prices from table. Request quote on spar widths wider than 6". Spars for certificated aircraft such as Aeronca, Stearman, Taylorcraft and Piper are available and may be priced from the table. Since many of these early aircraft were "handmade", the spars are often not uniform in size for a particular model. Therefore, the finished net dimensions should be specified when ordering replacement spars. Please price to nearest fraction.

Thousands of feet of S2S aircraft quality spruce are stocked in our Corona, CA. warehouse. Orders for spars, spruce kits and capstrip can usually be shipped within three weeks after receipt of order. Spars wider than 6" must be milled from 8" specially selected stock which requires a long and indefinite lead time. Prices on request.

For additional technical information refer to a complete reprint of spruce specification MIL-S-6073 and plywood specification MIL-P-6070.
P/N 13-14900

When ordering either spars or capstrip, designate the thickness first, then the width and length.

Examples: 3/4" T x 4-1/4" W x 14' L spar; 1/4" T x 1/2" W x 5' L capstrip.



Faster delivery can be assured if guidelines regarding minimum acceptable lengths are provided. Orders are often delayed awaiting delivery of lumber to the even footage specified whereas shipment could be made if the minimum usable lengths were indicated. Example: 3/4" nominal 6" x 12' (131-1/2" min.).

Spruce and tubing kits may be combined with plywood and other building supplies for a single truck delivery charge.

NOTICE

We supply only certified aircraft grade spruce spars which meet Mil-S-6073. Do not accept lower grades of spruce for lower prices in your project. It is no bargain. Demand top quality. Capstrip may be cut from "C and better" graded spruce as it is non-structural.
No Packaging Charges On Spruce



BARGAIN BAG OF SPRUCE

Assortment of at least ten pieces, in random lengths from 1 ft. to 5 ft., of rough, S2S or S4S remnants and cutoffs. A usable selection is assured. Approx. wt. 20 lbs.

P/N 02-03600 **Now Only .**

SPRUCE SPAR STOCK—MIL SPEC. MIL-S-6073 PRICE PER LINEAL FOOT*

| THICKNESS (Inches) | WIDTH (Inches) | | | | | | | | | | | | | | |
|-----------------------|----------------|---|-------|-------|-------|---|-------|-------|-------|-----|-------|-------|-------|-----|--|
| | 2-3/4 | 3 | 3-1/4 | 3-1/2 | 3-3/4 | 4 | 4-1/4 | 4-1/2 | 4-3/4 | 5 | 5-1/4 | 5-1/2 | 5-3/4 | 6 | |
| 1/8 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| 3/16 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| 1/4 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| 5/16 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| 3/8 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| 1/2 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| 5/8 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| 11/16 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| 3/4 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| 13/16 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| 7/8 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| 15/16 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| 1-1/8 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| 1-1/4 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | |
| 1-1/2 | . | . | --- | . | . | . | . | --- | --- | --- | . | --- | --- | --- | |

* Prices shown are for lengths less than 12 feet. Add 15% per foot for lengths longer than 12 feet. Please order by part number and also state exact thickness, width and length to verify part number. Spruce part numbers begin with "02" and finish with thickness and width. Examples: 3/4" T x 5-1/4" W is P/N 02-34514; 1-1/4" T x 6" W is P/N 02-1146. Provide part number and footage required of each size. Specify any particular lengths required. Thicker & wider sizes subject to availability. Request quotation.

FINISHED CAPSTRIP, LONGERONS, STRINGERS PRICE PER LINEAL FOOT*

| THICKNESS (Inches) | WIDTH (Inches) | | | | | | | | | | | | | | | |
|-----------------------|----------------|-----|------|-----|------|-----|-----|-----|-----|---|-------|-------|-------|---|-------|-------|
| | 3/16 | 1/4 | 5/16 | 3/8 | 7/16 | 1/2 | 5/8 | 3/4 | 7/8 | 1 | 1-1/4 | 1-1/2 | 1-3/4 | 2 | 2-1/4 | 2-1/2 |
| 1/8 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 3/16 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 1/4 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 5/16 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 3/8 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 1/2 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 5/8 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 3/4 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 7/8 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |

*Prices shown are for lengths less than 7 feet. Add 20% for lengths 7-10 feet and 35% for lengths over 10 feet. Please order by part number and also state exact thickness and width. Begin part number with "02", then thickness & width. Example: 1/4" T x 3/8" W is P/N 02-1438. Capstrip is furnished in lengths as specified by customer.

WP

SPRUCE KITS FOR HOMEBUILTS

WP



AIRCRAFT SPRUCE'S FIRST HOMEBUILT

This Smith Mini Plane N1G was started in mid 1961 and was first flown on November 12, 1967 at Chino, California. It was built by Norm Ginn who operated a small company named Aircraft Spruce Co. selling spruce lumber in the early 1960's. In 1965, Norm sold the company name to Flo and Bob Irwin who began to build the business into what is today Aircraft Spruce & Specialty Company. Thus, N1G is the first homebuilt using materials from "Aircraft Spruce". Norm sold N1G in 1970, and today it is with its seventh owner in Texas. Norm Ginn retired and lived in Albuquerque, New Mexico. He enjoyed spending time with his sons and grandsons building and flying radio-controlled aircraft. Norm passed away on April 22, 2007, but he and his son Bob had started a new business offering engraved photos of aircraft on marble. See their website at www.lasercraftstudios.com.

AIRCRAFT SPRUCE & SPECIALTY CO.

THE #1 SOURCE FOR SPRUCE SPARS & CAPSTRIP SINCE 1965. LOOK TO THE LEADER!

SPRUCE KITS

Our spruce kits are designed to encourage the builder to personally produce the components for his aircraft with a minimum of investment in shop equipment. A table saw is an asset, but an aircraft can be built completely with the use of only hand tools.

The complete kits listed below contain all the spruce required for the aircraft. Kits marked ** contain the wing and aileron spars finished to the net dimensions called out in the plans, without beveling. In all other kits the wing and aileron spars are S2S (surfaced two sides) spar stock that is to be cut to the finished pieces. The rib and stringer stock are supplied S2S to the net thickness required and are to be run through a table saw one way to produce the finished pieces. One board 1/4" thick x nominal 6" wide will yield about 16 pieces of finished 1/4 x 1/4 capstrip.

Without the use of a table saw, the builder should order only a Spar Kit, which includes the wing and aileron spars finished to net dimensions (unbeveled), then order the capstrip and milled stock as needed.

No plywood, glue, nails or other supplies are included in our spruce kits. All materials must be ordered individually as priced in this catalog.

Spruce kits are well packed, shipped by truck and insured for value by the carrier. Export orders are solicited. Prompt and efficient handling is assured.

Since all spruce is milled to individual requirements and cannot be stocked in finished condition, payment in full is requested with order.

NOTE: Our spruce kits are produced from materials lists which are believed to be accurate. However, since designers may modify certain dimensions after the original plans are released, we urge the builder to verify sizes and current price before ordering.

WE CHARGE NO PACKING CHARGES ON SPRUCE

COMPLETE SPRUCE KITS

| | |
|--|-----------------------------|
| Acro Sport | 02-03700 |
| Acro Sport II | 02-03800 |
| Baby Great Lakes..... | 02-03900 |
| Bobcat | 02-25100 |
| Christavia MK 1 | 01-39880 |
| Christavia MK 4 | 01-39910 |
| Corby Starlet CJ-1 (less spars)..... | 02-04300 |
| Cvjetkovic CA-65..... | 02-04400 |
| Cygnets | 02-04500 |
| EAA Bi-Plane..... | 02-04600 |
| Fly Baby Spruce Kit..... | 01-00977 |
| GN-1 Aircamper ** | 02-04700 |
| GP-4 | 02-25200 |
| Hatz Bi-Plane | 02-04800 |
| Kelly-D | 02-04900 |
| Mitchell B-10..... | 02-05000 |
| One Design | See Page 19 for Kits |
| Osprey II ** | 02-05100 |
| Pietenpol Aircamper | 02-02500 |
| Pitts Special (Basic) M-6 or S-1D | 02-05200 |
| Poer Pixie | 02-05300 |
| Rand KR-1 ** | 02-05400 |
| Rand KR-2 ** | 02-05500 |
| Rand KR-2S | 02-05510 |
| Rutan VariViggen | 02-05600 |
| Skybolt..... | 02-05700 |
| Smith Miniplane..... | 02-05800 |
| VP-1..... | 01-00222 |
| VP-2..... | 02-08800 |
| Volmer Sportsman VJ-22 (less wings)..... | 02-06000 |
| War Aircraft Corsair..... | 02-06100 |
| War Aircraft P-47..... | 02-06200 |
| War Aircraft FW-190..... | 02-06300 |
| War Aircraft Sea Fury..... | 02-06400 |
| Wittman Tailwind** | 02-06500 |

** Wing & aileron spars finished to net dimensions. Not beveled.

SPAR KITS

| | |
|--|-----------------------------|
| Acro Sport | 02-06600 |
| Acro Sport II | 02-03810 |
| Baby Great Lakes..... | 02-06700 |
| Bakeng Duce..... | 02-06800 |
| Barracuda | 02-06900 |
| Bowers Fly Baby (Spars) | 02-07000 |
| Bowers Complete Wing Kit | 02-07100 |
| Christavia MK 1 | 01-39880 |
| Christavia MK 4 | 01-39980 |
| Corby Starlet (Two Piece Wing Spar Kit)..... | 02-09000 |
| Cvjetkovic CA-65..... | 02-07300 |
| EAA Bi-Plane..... | 02-07400 |
| Hatz Bi-Plane | 02-07500 |
| Kelly-D | 02-07600 |
| Marquart Charger..... | 02-07700 |
| Pitts Special M-6 or S-1D..... | 02-07800 |
| One Design | See Page 19 for Kits |
| Sausser P6E | 02-02000 |
| Skybolt..... | 02-07900 |
| Smith Miniplane..... | 02-08000 |
| Stolp Starduster Single Place | 02-08200 |
| Starduster "Too" | 02-08300 |
| Starlet | 02-08400 |
| Wittman Tailwind | 02-08500 |
| Wittman "V" | 02-08600 |

SPRUCE KITS FOR UNLISTED DESIGNS CAN BE FURNISHED IF A MATERIALS LIST IS SUBMITTED.

TYPICAL WEIGHTS OF SPRUCE KITS

| | |
|-----------------------------------|----------|
| EAA Bi-Plane Complete Kit | 99 Lbs. |
| Pitts Special Complete Kit | 73 Lbs. |
| Pitts Special Spar Kit Only | 35 Lbs. |
| Miniplane Complete Kit | 49 Lbs. |
| Fly Baby Complete Kit | 132 Lbs. |
| KR-1 Complete Kit | 61 Lbs. |

PLYWOOD



DOMESTIC MIL-P-6070 AIRCRAFT PLYWOOD

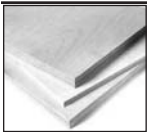
American-made structural aircraft-grade plywood is made of imported African Mahogany or American Birch veneers laminated in a hot press to hardwood cores of Poplar or Bass wood with waterproof glue. Will meet all requirements of specification MIL-P-6070, which calls for shear testing after immersion in boiling water for 3 hours. Far superior to many plywoods in which all plies are 1/16" thick and laminated in a cold press to make up the total thickness. Tests should be made on cold-press plywoods before use in aerobatic aircraft.

| Thickness | | No. of Plies | 90° Mahogany | | | | 90° Birch | | | |
|-------------|-------------|--------------|---------------------------|------------|-------------------|---------------|---------------------------|------------|-------------------|---------------|
| In. | Approx. MM. | | Approx. Wt. 4' x 8' Sheet | Part No.** | Price Per Sq. Ft. | 4' x 8' Sheet | Approx. Wt. 4' x 8' Sheet | Part No.** | Price Per Sq. Ft. | 4' x 8' Sheet |
| 1/16 (.070) | 1.5 | 3 | 6 Lbs. | 02-189-- | \$3.29 | . | 7 Lbs. | 02-243-- | \$3.04 | . |
| 3/32 (.100) | 2.5 | 3 | 10 Lbs. | 02-191-- | 3.90 | . | 12 Lbs. | 02-244-- | 2.77 | . |
| 1/8 (.125) | 3.2 | 3 | 12 Lbs. | 02-193-- | 4.00 | . | 15 Lbs. | 02-245-- | 2.82 | . |
| 3/16 (.190) | 4.8 | 3-5 | 20 Lbs. | 02-195-- | 6.15 | . | 24 Lbs. | 02-246-- | 6.12 | . |
| 1/4 (.250) | 6.4 | 5 | 25 Lbs. | 02-197-- | 6.99 | . | 30 Lbs. | 02-247-- | 7.46 | . |
| 5/16 (.312) | 7.9 | 5 | Lbs. | 02-198-- | 7.51 | . | 30 Lbs. | 02-251-- | 8.05 | . |
| 3/8 (.375) | 9.5 | 5 | Lbs. | 02-199-- | 7.80 | . | 30 Lbs. | 02-266-- | 8.30 | . |
| 7/16 (.437) | 11.1 | 7 | Lbs. | 02-120-- | 8.95 | . | 30 Lbs. | 02-267-- | 9.56 | . |
| 1/2 (.500) | 12.7 | 7 | Lbs. | 02-121-- | 9.27 | . | 30 Lbs. | 02-260-- | 9.74 | . |
| | | | 45° Mahogany | | | | 45° Birch | | | |
| 1/16 (.070) | 1.5 | 3 | 6 Lbs. | 02-188-- | 5.74 | . | 7 Lbs. | 02-248-- | 5.31 | . |
| 3/32 (.100) | 2.5 | 3 | 10 Lbs. | 02-190-- | 6.09 | . | 12 Lbs. | 02-249-- | 4.74 | . |
| 1/8 (.125) | 3.2 | 3 | 12 Lbs. | 02-192-- | 6.65 | . | 15 Lbs. | 02-250-- | 5.19 | . |

*Domestic plywood is sold only in 2'x4' (8 Sq.Ft.), 4'x4' (16 Sq.Ft.), 2'x8' (16 Sq.Ft.), and full 4' x 8' sheets. If ordering less than full sheet, compute cost based on price/sq.ft. shown in above table.

** The part numbers of full 4' x 8' sheets end with "80". For less than full sheets, the last two digits will change according to the size ordered. Change the last two digits in the part number to "10" for 4' x 4', "20" for 2' x 8' and "30" for 2' x 4'. Example: 1/16" mahogany 90° is 02-18980 (4' x 8'), 02-18910 (4' x 4'), 02-18920 (2' x 8') and 02-18930 (2' x 4').

WP



FINNISH BIRCH AIRCRAFT PLYWOOD (METRIC)

Quality Birch aircraft grade plywood AB/B grade.

| Thickness | | Plies | Half Sheet 2'x4' | | Full Sheet 4'x4' | |
|------------|-----|-------|------------------|-------|------------------|-------|
| Nom. Inch. | mm | | Part No. | Price | Part No. | Price |
| 1/64 | 0.4 | 3 | 02-20250 | . | 02-20200 | . |
| 1/32 | 0.8 | 3 | 02-20350 | . | 02-20300 | . |
| 3/64 | 1.0 | 3 | 02-50050 | . | 02-50000 | . |
| 1/16 | 1.5 | 3 | 02-20450 | . | 02-20400 | . |
| 3/32 | 2.5 | 5 | 02-20550 | . | 02-20500 | . |
| 1/8 | 3 | 5 | 02-20650 | . | 02-20600 | . |
| 3/16 | 5 | 10 | 02-20750 | . | 02-20700 | . |
| 1/4 | 6 | 12 | 02-20850 | . | 02-20800 | . |

Corby Starlet 2MM x 48" x 48" P/N 02-28050
 1/4 Birch/Poplar 5ply, 45° P/N 02-27180

OKOUME PLYWOOD



Okoume (o-KUE-me), also referred to as Gaboon, is an African hardwood widely used in Europe over the past century. Light pinkish brown in color, sometimes lustrous with variable interlocking grain, the rotary cut panel can be painted or finished bright. The natural durability of this species is extremely low and care must be taken to finish all surfaces, face and edges. Often recommended for use with epoxy saturation systems, the panel exhibits high strength to weight ratios. Face veneers are made from 1.3 mm thick A/B grade rotary cut veneer. Cores and crossbands are solid-joined and the panel glued with waterproof glue. Okoume panels are extensively used by race class boat builders, rowing shell builders and in various applications. Where its lighter weight, good bending properties and ease of finishing are a value, 5/32" thickness is used in the One Design Kit Aircraft and applicable to a wide variety of Homebuilt Aircraft, sold in 4'x8' sheets. Wt. of 5/32" sheet is 8.8 lb. Wt. of 1/4" sheet is 28 lbs. Thickness varies from 5mm to 6mm. Can be cut down for shipping.

5/32" thick x 4' x 8' sheet P/N 02-20100
 1/4" thick x 4' x 8' sheet P/N 02-00076

LITE PLY PLYWOOD



The beautiful, pliable answer to shaped and curved construction problems. Lite Ply® is distinguished by its even grain, virtually snow white appearance and unusual resilience. It is a true "white wood," poplar and finishes uniformly, whether stained or painted.

Supplied for over 50 years, Lite Ply® has proven to be an excellent wood for industries where weight is a concern. Lite Ply® has been proven to

be a cost effective alternative to other light weight panels.
 4' X 8' Sheet 1/8" 3MM P/N 02-00115
 4' X 8' Sheet 1/4" 6MM P/N 02-00116



ROYAL MARINE A-A FIR PLYWOOD

First quality marine plywood that meets or exceeds requirements of specifications PSI-74. All are Douglas Fir. Insist on A-A grade for your aircraft!

\$4.00 packing charge for less than 3 sheets unless cut to 2'x4' pieces for UPS shipment.

| Thick-ness | No. of Plies | Part No.* | Price | | | |
|------------|--------------|-----------|-------|-------|-------|-------|
| | | | 2'x2' | 2'x4' | 4'x4' | 4'x8' |
| 1/4" | 3 | 02-210-- | . | . | . | . |
| 3/8" | 4 | 02-211-- | . | . | . | . |
| 1/2" | 5 | 02-212-- | . | . | . | . |
| 5/8" | 7 | 02-213-- | . | . | . | . |
| 3/4" | 7 | 02-214-- | . | . | . | . |
| 1" | 7 | 02-215-- | . | . | . | . |

*Please order by part number, note thickness & size for verification. The part numbers for full 4'x8' sheets end with "80". For less than full sheets, the last 2 digits of the part number. will change according to size ordered. Change last 2 digits of the part no to "20" for 2'x2', "40" for 2'x4' & "60" for 4'x4'. Example: 1/4" 2'x4' is 02-21040.



BASSWOOD MIL-P-6070 AIRCRAFT PLYWOOD

Basswood meets MIL-P-6070 but is lighter and has more flexibility than Mahogany & Birch plywood, but has slightly less structural strength.

| Thickness | No. of Plies | Part No.* | Price | | | |
|-----------|--------------|-----------|-------|-------|-------|-------|
| | | | 2'x2' | 2'x4' | 4'x4' | 4'x8' |
| 1/16" | 3 | 02-253-- | . | . | . | . |
| 3/32" | 3 | 02-254-- | . | . | . | . |
| 1/8" | 3 | 02-255-- | . | . | . | . |
| 3/16" | 3 | 02-256-- | . | . | . | . |
| 1/4" | 5 | 02-257-- | . | . | . | . |
| 3/8" | 5 | 02-261-- | . | . | . | . |
| 7/16" | 7 | 02-262-- | . | . | . | . |
| 1/2" | 7 | 02-263-- | . | . | . | . |
| 5/8" | 9 | 02-265-- | . | . | . | . |
| 3/4" | 9 | 02-264-- | . | . | . | . |

NOTE: All sheets 4'x8'. All plies are basswood. Grain is 90°. Part nos for full 4'x8' sheets end with "80". For less than full sheets, the last 2 digits will change according to the size ordered. Change the last 2 digits in the part no to "60" for 4'x4', "20" for 2'x2' and "40" for 2'x4'. See example in domestic plywood table.

5/16" 5 PLY BIRCH/ BASSWOOD PLYWOOD



2X2 P/N 02-27220
 2X4 P/N 02-27240
 4X4 P/N 02-27260
 4X8 P/N 02-27280

BALSA – NAILS – GLUES

AIRCRAFT NAILS

Flat, bonderized steel nails, brass plated to prevent rusting and cement coated to improve holding power. Manufactured to Federal Specification FF-N-105 (formerly AN301). Order by part no.



| Part No. | Size | | Price | | |
|------------|--------|-------|---------|---------|------|
| | Length | Gauge | 1/4 Lb. | 1/2 Lb. | 1 Lb |
| AN301-20-2 | 1/4" | 20 | . | . | . |
| AN301-20-3 | 3/8" | 20 | . | . | . |
| AN301-20-4 | 1/2" | 20 | . | . | . |
| AN301-20-5 | 5/8" | 20 | . | . | . |
| AN301-20-6 | 3/4" | 20 | . | . | . |
| AN301-20-8 | 1" | 20 | . | . | . |

There are approximately 9,000 3/8" x 20 steel nails per pound.

QUICK FIX EPOXY PUTTY STICKS



Quikfix BC 101 is a hand mixable, fast curing, general purpose epoxy putty stick that mixes in just one minute to provide fast repairs to many surfaces including metals, wood, glass, concrete, ceramics and numerous plastics. One hour after mixing, QuikFix BC 101 can be drilled, sawed, sanded, filed, tapped, machined, or painted. It comes in a handy concentric putty stick with the curing agent encapsulated in the contrasting color base material. The putty-like consistency eliminates drips and runs, producing "no mess" applications with no tools required for use. In order to achieve optimum adhesion, surfaces should be clean, dry and free of grease or dirt. Scuffing or sanding the surface prior to cleaning helps insure a good bond. Color: Gray (after cure).

3.5" stick P/N 01-00333
7" stick P/N 01-00332

INSTANT GLUES



These American made Instant Glue products were used extensively in construction of the "Around the World Non-stop" Voyager aircraft and are highly recommended for many homebuilt aircraft applications by Voyager Aircraft, Inc. and Rutan Aircraft Factory. They create a fast, permanent bond on many similar and dissimilar materials such as woods, metals and composite materials.

HOT STUFF™ - Odorless THIN have a consistency resembling that of water, used mainly for bonding parts which fit very well. 2oz

P/N 01-35500

UFO™ - "UFO" Odorless 'THIN' will not attack foam, making foam bonding possible. Fiberglass skins, right on the foam, are practical and easy with "UFO" Odorless 'THIN'. 2oz. P/N 01-01038

SUPER 'T'™ - A consistency similar to that of syrup and has the ability to fill small gaps between parts which don't fit perfectly. SUPER 'T'™ cures at a slower rate than HOT STUFF™, (10-25 seconds depending on the material). 2oz. P/N 01-35600

SPECIAL 'T'™ - Special 'T'™ and new UFO™ Odorless THICK are very thick cyanoacrylates with a consistency resembling cold honey. SPECIAL 'T'™ and UFO™ Odorless THICK have greater gap-filling ability than SUPER 'T'™ and more positioning time after contact of parts. The rate of cure is slow enough, (usually 50-60 seconds depending on the material), to allow precise alignment of parts, after assembly. 2oz. P/N 01-01039

UFO™ THICK - Odorless. Those who are sensitive to cyanoacrylate curing fumes will enjoy using the new UFO™ in the place of Special 'T'™. Will not attack foam, making foam bonding possible. NCF HOT or MILD should be used to speed the cure. For foam, use Spray n' Cure™ accelerator. 2oz. P/N 01-01040

NCF QUICK™ - Used with HOT STUFF, UFO Odorless THIN, SUPER T, and UFO Odorless THICK, and with it you can do almost magical things. NCF Quick works in three ways to make HOT STUFF, SUPER 'T' and SPECIAL 'T' Easier, Faster, Stronger and able to bond some of the most unusual materials you can think of. P/N 01-00689

NCFM™ - Mild Formula accelerator for use with HOT STUFF™, UFO™ Odorless THIN, SUPER T™, and UFO™ Odorless THICK, and with it you can do almost magical things. NCFM™ MAY MELT SOME EXPANDED FOAM PRODUCTS. 2oz. P/N 01-35700

NCF™ - An extremely fast acting accelerator for all instant glues. "NCF" does everything NCFM™ will do, in a fraction of the time. "NCF" has an extraordinary on-part life. P/N 01-01041

SPRAY'N CURE™ - FREE of all chlorinated and fluorinated solvents. 2 minute on-part life after the area is completely dry. Special Note: User must allow 50 to 60 seconds (at room temperature) for complete drying before bonding, white foam friendly P/N 01-01042

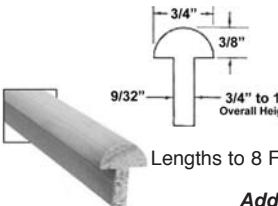
SUPER SOLVENT™ - Ultra Solvent™ is a remarkable debonder and cleaner for any instant glue. Use it for hand clean-up, removes instant glue from most clothing and surfaces. Some fabric, colorings or materials may be affected, so test-patch on an inconspicuous place. P/N 01-35800

BOND-AIDE WOOD EPOXY PUTTY



Bond-Aide P-1500W is a wood epoxy putty compound that cures in minutes to form permanent repairs on woods, plaster, ceramics and many plastics with no shrinkage. For woodworking and hobby model use, Bond-Aide P-1500W is unique as it can be shaped to conform to the surface. After 30 minutes, it becomes part of the wood but is many times stronger. Like wood it is light in weight, can be drilled, sawed, nailed, carved, machined, sanded, stained and painted, all within 30 minutes. It is non-toxic and is quickly and safely readied for application without any mess. It will not drip or sag, and unlike conventional wood putties, P-1500W will not dry out, even after opening. Excellent for bonding wood to wood, wood to metal, and wood to glass or ceramics. P-1500W has a multitude of uses in aircraft restoration, rebuilding, and repair.

1 tube 2-part Bond-Aide P-1500W P/N 02-18650 /ea



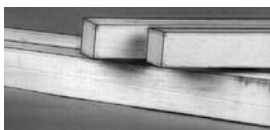
"T" STRINGER STOCK

Standard Spruce stringer material finished to the dimensions illustrated. Lengths over 8 feet require truck shipment.

Lengths to 8 Ft. P/N 02-18400 /ft.

Add 20% for lengths over 8 feet.

BALSA WOOD

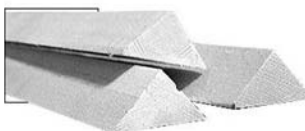


Balsa is the lightest commercial wood in the world, weighing less than 10 lbs./cu.ft. Pound for pound, it is one of the strongest - both its stiffness and bending strength exceed White Spruce, Western Yellow Pine, Douglas Fir, White Oak and many other commercially used woods. It is easily cut, turned, carved, shaped, glued, sanded and finished, all with ordinary wood working tools and techniques. It can be shaped with abrasive wheels either wet or dry. It can be cut into extremely thin veneers. Almost any kind of coating will adhere to it. Meets specifications MIL-B-2747 and MIL-S-7998.

Furnished as 2" thick boards, 3 ft. long from 3"-6" wide. Material which may be glued together by the builder to make the required size pieces.

2" x 3" x 3 ft Pc P/N 02-03500 /ea.

ACTUAL SIZES OF BOARDS CAN VARY



TRIANGULAR CORNER BLOCKING

90° Corner Blocking
Order by the foot.

| Size | Price Part No. | Per Ft. | Size | Part No. | Price |
|-------|----------------|---------|------|----------|-------|
| 1/4" | 02-17600 | . | 1/2" | 02-18000 | . |
| 5/16" | 02-17700 | . | 5/8" | 02-18100 | . |
| 3/8" | 02-17800 | . | 3/4" | 02-18200 | . |
| 7/16" | 02-17900 | . | 7/8" | 02-18300 | . |



WING TIP BOWS

Preformed wooden wing tip bows for use in all Piper Aircraft Models J-3 to PA-22. It is recommended to soak the wing tip bows in water before

installation to avoid breakage. P/N 02-18500 /ea.
Note: Wing tip bows can be shipped via UPS with an oversized package rate equal to the 30 Lb. rate.

AIRCRAFT SPRUCE AND PLYWOOD REFERENCE MANUAL

Reprint of Government Specifications MIL-S-6073 and MIL-P-6070.

P/N 13-14900



GORILLA GLUE TOUGHEST GLUE ON EARTH



Gorilla Glue is known as the toughest glue on planet Earth. A high strength adhesive that quickly bonds wood, metals, stones, ceramics, and more. Gorilla Glue is a versatile, interior/exterior adhesive ideal for building projects. 8 oz. bottle.

Benefits: • 100% Waterproof • Incredibly Strong and Versatile • Stainable and Paintable • Easily Sanded • More Coverage • A Long Open Working Time • Dries Light Tan • Non-toxic • Acid-Free

P/N 02-00101

WP

ADHESIVES - GLUES

CASCOPHEN



A Resorcinol Formaldehyde Adhesive capable of curing at room temperature and providing strong, durable, waterproof bonds. Comes in two parts, a liquid resin (part A) and a powdered catalyst (part B). The liquid resin is an alcohol-water solution of a partially condensed resorcinol-formaldehyde resin containing a suitable reinforcing cellulosic filler. The hardener is a tan powder formulated from paraformaldehyde and a suitable cellulosic filler. Produces a cured glue line which is resistant to fresh water or salt water, most acids and organic solvents, and lubricating oils and greases. Being thermoset, the bond is resistant to elevated temps. and conversely, no loss in bond strength occurs at temperatures as low as 40°F. These features make it advantageous for use as a general marine and aircraft use. It provides strong bonds between many wood and non-wood surfaces. These include treated woods, many plastics, natural and synthetic rubber, primed metal, leather, textiles, paper and fiber boards.

- Pint Kit (Pint A, 1/4lb B) P/N 02-00036
- Quart Kit (Qt A, 1/2lb B)..... P/N 02-00037
- Gallon Kit (Gal A, 2lbs B)..... P/N 02-00038

FPL-16A HUGHES GLUE



This is an exceptionally fine two-part white epoxy glue for homebuilt and experimental aircraft. It is based on a formula developed by Forest Products Laboratories. It is excellent not only for wood but for many other applications such as a metal to wood adhesive, metal to metal, just about anything with the exception of some plastics.

It has been used by builders for many years with universal acceptance. Its low viscosity makes it very easy to work. Shelf life: Resin - more than 1 yr. Hardener - Indefinite.

- Qt Kit (1 qt. resin, 4oz hardener, Wt 4 lbs) P/N 02-23400
- Gal Kit (1 gal resin, 16oz hardener, Wt. 13 lbs).... P/N 02-23500

HYSOL EA-9430 GLUE



This new and improved Hysol glue replaces the old EA-9410-2 glue. EA-9430 has the same characteristics as the EA-9410, but has a 50 minute pot life instead of the 30 minute pot life of the EA-9410 at 77°F. Used extensively in the Strojnik S2A sailplane and many other homebuilts.

- P/N 02-18600

RESORCINOL GLUE



Resorcinol glue is a waterproof two-part system that meets or exceeds the requirements of MIL-A-46051 (Type I, Grade A), (Type II, Grade C), & MIL-A-22397 (Grade A). It resists outdoor exposure, cold or boiling water, heat, molds, and solvents. Pot life: 3-4 hrs. Mix Ratio: 4 to 1 by weight. Excellent for use on wood structures. 1 pint. P/N 0227...../ea

SCOTCH WELD 3M STRUCTURAL ADHESIVE



Commonly known as "Scotch Weld", this two part epoxy structural adhesive will bond wood, metal, plastics and rubber. It has a pot life of nearly 2 hours after mixing, and a 1 year shelf life. Forms flexible yet very strong bonds. Color: Gray. 2 oz. kit

- P/N 02-00045

FOR OTHER 3M™ PRODUCTS SEE PAGES 345-352

WEST SYSTEM SIX10 THICKENED EPOXY ADHESIVE



Six10 Adhesive gives you the strength and reliability of a two-part WEST SYSTEM epoxy with the convenience of a single part product. Six10 is dispensed with a standard caulking gun. Non-sagging Six10 bonds tenaciously to wood, metals, fiberglass and concrete. It cures in temperatures as low as 50°F. Working time is 42 minutes at 72°F.

Cures to a solid in 5-6 hours and will take high loads in 24 hours. Cure time is faster at warm temperatures and slower in cool temperatures. The Six10 cartridge holds 190 ml of resin and hardener. To use Six10 Adhesive, replace the retaining nut and plug on the West System Six10 dispensing cartridge with the 600 Static Mixer that comes attached to the cartridge. Dispense mixed 2 part epoxy adhesive using a standard caulking gun. The efficient internal geometry of the 600 Mixer thoroughly blends resin and hardener in a short mixing length for good application control and a minimum of waste. Place high-strength, non-sagging epoxy exactly where it's needed in less time and with no mess. Additional 600 StaticMixers are available in packages of two or twelve.

| Part No. | Description | Unit Size | Price |
|----------|--------------------------|-----------|-------|
| 01-01069 | Epoxy Adhesive Cartridge | 190 ml | . |
| 01-01071 | Static Mixers | 12 ea | . |

T-88 STRUCTURAL ADHESIVE



T-88 is a non-brittle structural adhesive which gives superior finished results even when used under adverse working conditions. T-88 will cure in temperatures as low as 35°F which makes it an excellent choice for homebuilders living in colder climates. It is recommended by the builders of many types of homebuilt aircraft and is excellent for bonding aluminum, steel or wood. When fully cured, it is not affected by water, oil, gasoline and most other chemicals.

- 1/2 Pt Kit... P/N 02-00046 Pt. Kit..... P/N 02-00047
- Qt. Kit P/N 02-00048 Gal. Kit.... P/N 02-00049

T-88 UNIVERSAL CARTRIDGES



With the Universal Cartridge any medium to high quality caulking gun will work just fine. When you evaluate the Universal Cartridge notice that without a mixture tip it is perfect for accurately measuring small batches of adhesive. This is something that is very hard to do in a mixing cup without generating a lot of waste. Of course when the cartridge is used with the mixing tip you get both accurate measuring and thorough mixing making large, continuous gluing jobs much easier with flawless products performance.

- P/N 02-00103

T-88 SQ TURBO MIXER



T-88 System Three Mixing Nozzle

- P/N 02-00108

UNIVERSAL CART RATIO CHECK CAP T-88



T-88 System Three cart ratio check cap.

- P/N 02-00109

REDI-MIX MIXER TUBE



The static mixer tube attaches to the cartridge with a retaining nut which screws on securely with a retaining nut which screws on securely with the REDIMIX gun. The mixer tip tapers to 1/8" but may be cut back to about 1/4". Very small quantities of epoxy may be prepared in this manner without any waste or added cost.

- P/N 02-90030

ALL-PURPOSE STRUCTURAL ADHESIVE



This structural adhesive is a unique two-part epoxy system with superior physical properties. Similar to the popular T-88 system, it permanently bonds or mends wood, metals, plastics, fiberglass and ceramics. Its exceptionally high peel strength makes it ideal for bonding dissimilar surfaces. Like the Safe-T-Poxy system, it is safe to use and has a low irritation potential. Mixing Ratio 1:1, Color: Light amber. Cures overnight, max. strength in 7 days (70°F). Gel Time (70°F): FE7004(Fast) 35min, #9922 (Slow) 2.5 hrs

- 1-Pint Kits..... Slow Cure P/N 02-00012
- 1-Quart Kits..... Fast Cure P/N 02-00014
- 2-Quart Kits..... Slow Cure P/N 02-00009

WELDWOOD GLUE



Weldwood Plastic Resin glue is a powdered, pre-catalyzed water-activated glue designed to provide strong, durable bonds for wood and wood products. Forms a bond stronger than the wood itself. Meets Fed. Spec A-A-3052.. Pot life: 4-5 hrs @ 70°, 2.5hrs @ 80°. Mix Ratio: 5 to 2 by volume. Resistant to fungi, bacteria, oil, gasoline & solvents.

- 1 Lb (6 per case) P/N 0203
- 5 Lb (4 per case) P/N 0204

WP

ADHESIVES

WP

PTM&W ES6279 AEROPOXY EPOXY ADHESIVE



Manufactured by PTM & W Industries, Inc. ES6279 is a light grayish-tan two part adhesive that was developed specifically for difficult bonding problems involving similar or dissimilar materials. ES6279 provides excellent adhesion to a wide variety of materials such as aluminum, steel, brass, glass, ceramics, and wood. The mix ratio of 1 to 1 by weight or volume allows easy measuring, and the creamy, smooth viscosity allows easy, uniform application. The cured material has excellent strength as well as good resistance to weak acids, moisture, and weather. ES6279 has been used successfully for many years in a variety of general bonding uses as well as numerous production applications.

| Part Number | Description | Wt. (lbs.) | Price |
|-------------|------------------------|------------|-------|
| 02-30015 | 1/2 quart part A only | 3.0 | . |
| 02-30020 | 1/2 quart part B only | 3.0 | . |
| 02-30025 | ES6279 QUART KIT | 6.0 | . |
| 02-30030 | 1/2 gallon part A only | 12.0 | . |
| 02-30035 | 1/2 gallon part B only | 12.0 | . |
| 02-30040 | ES6279 GALLON KIT | 24.0 | . |
| 02-30045 | 1/2 pail part A only | 60.0 | . |
| 02-30050 | 1/2 pail part B only | 60.0 | . |
| 02-30055 | ES6279 PAIL KIT | 120.0 | . |

PTM&W ES6209 AEROPOXY STRUCTURAL ADHESIVE



ES6209 is a translucent, straw colored two component epoxy adhesive with a thick, liquid consistency. ES6209 is an excellent structural adhesive for use when good flow and surface wetting are required. Though pourable it has a controlled flow viscosity to minimize run-out from the adhesive joint. The 1 to 1 combining ratio by weight or volume makes it easy to measure and mix. The working time of over an hour provides plenty of time to coat and assemble the materials to be bonded. ES6209 has excellent adhesion to composite and metal parts typically used in kitplane construction. It bonds rigid foam, wood, ceramics, fiberglass and most metals with ease. When cured ES6209 provides tough, durable structural

joints. Mix Ratio: 1 to 1 by weight or volume; Color: Translucent Amber, Mixed Viscosity: 45,000-55,000cps; Pot Life 4fl. oz. Mass: 60-90 min @ 77°F; Cure Time @ 77°F 18-24 hrs, @ 140°F 2-3 hrs.

Quart Kit.....P/N 01-00295
Gallon Kit.....P/N 01-00296

FE6026 A/B EPOXY ADHESIVE (REPLACES HEXCEL 9923)



SLE-3012 A/B is a two part epoxy adhesive which bonds well to dissimilar materials with different thermal expansion coefficients. Part A is a nonflow brownish paste to be mixed with a white part B semipaste. (Fillers in part B may separate in storage. Remix to uniform consistency before each use.) The mix ratio of FE6026 is 1/1 by volume. The pot life of 100 grams of FE6026 A/B is 35-45 minutes @ 75°F. FE6026 A/B will cure in 3-5 days @ 75°F, or 2-3 hours @ 150°F.

Pint Kit.....P/N 02-00043

PTM&W ES6228 METAL BONDING ADHESIVE



ES6228 is a thin paste viscosity epoxy adhesive designed to provide good bonds to metal surfaces. A unique feature of ES6228 is its ability to bond to slightly oily metal surfaces. This is useful in situations where the complete removal of residual mill oil on metal surfaces is not possible. The thin paste consistency of ES6228 wets the metal surface well, for good adhesion. This viscosity also provides some gap filling capabilities, so "close-fitting" joints are adequate, and matched-metal joints are not required. ES6228 has a 1:1 mix ratio, by weight or volume, for easy measuring. The white resin and black hardener combine to a smooth gray system that is easy to mix and apply. The cured material has very good properties, with high bond strength and elongation, for tough durable assemblies.

| Product Specifications | ES6228-A Resin | ES6228-B Hardener | Test Method |
|------------------------|-----------------------------|-------------------|-------------|
| Color | White | Black | Visual |
| Viscosity,cps | Thin Paste | Thin Paste | ASTM D2393 |
| Specific Gravity | 1.32 | 1.30 | ASTM D1475 |
| Density Lb./cu.in. | .0477 | .0470 | ASTM D792 |
| Mix ratio | 100:100 by weight or volume | | PTM & W |

Quart Kit (4.5 lbs)..... P/N 01-00415.....
Gallon Kit (18 lbs)..... P/N 01-00414.....

SYSTEM THREE ROTFIX



Rotfix is an easy-to-use, low viscosity epoxy wood restoration system for consolidation of rotted, deteriorated, dried out, or spongy wood. It creates a strong water-resistant base for repair and restoration. Penetrates deep into wood for maximum strength. Use with Sculptwood for permanent structural repair or severely damaged wood. Kit includes 16 oz measuring/application bottle.

1.5 pint (24 oz) Kit P/N 02-90050...../ea

SYSTEM THREE SCULPWOOD



Sculpwood is a moldable, carvable, sandable epoxy putty for replacement of damaged wood. It forms a strong, permanent bond to most rigid surfaces and can be sawed, nailed, carved, machined, sanded, stained, painted, and screwed. Porous, rotted, or deteriorate wood should first be treated with RotFix.

2 pint (32 oz) Kit.....P/N 02-90055...../ea

SYSTEM THREE QUICK CURE EPOXY



Quick Cure is a 5 min. epoxy from System Three which bonds wood, metals, fiberglass, ceramics, plastics and glass. Excellent for making quick repairs, as it hardens in 5 minutes at room temperature. Mixing ratio: 1 to 1. Not recommended for applications in excess of 200°F.

Pint KitP/N 02-30060
Quart Kit.....P/N 02-30065

METLWELD EPOXY ADHESIVE



MetlWeld is a 2-part, equal volume ratio, room temperature curing epoxy adhesive. MetlWeld develops strength earlier than other comparable 1:1 systems and may be used at temps. as low as 50°F. Metal to be bonded should be freshly sanded and clean from grease, wax, oil and other contaminants. Allow 48 hours min. to cure and develop strength at 77°F (longer at cooler temps.) before subjecting to stress. Bonds plain & anodized aluminum, glazed & unglazed ceramic; concrete; copper; glass; galvanized and stainless steel; neoprene rubber and most porous materials. Does not bond acrylic, polyethylene, polypropylene, polystyrene or vinyl plastics.

1/2 Pint Kit.....P/N 01-00406
Pint KitP/N 01-00407
Quart KitP/N 01-00408

STEEL – SOME COMMON TYPES

1010 This is one of the most widely used low carbon steels for low strength applications. It is best suited for parts whose fabrication involves moderate to severe forming and some machining. Its weldability is excellent and it can be case hardened for wear resistance by cyaniding.

1018 is a popular carburizing grade of steel. It can be strengthened by cold working or surface hardened by carburizing or cyaniding. It is relatively soft and has good weldability and formability.

1020 is a general-purpose low-carbon "mild" steel. It is easy to fabricate by the usual methods such as mild cold or hot forming and welding. It is weldable by all processes and the resulting welds are of extremely high quality.

4130 This chromium-molybdenum alloy is one of the most widely used aircraft steels because of its combination of weldability, ease of fabrication and mild hardenability. In relatively thin sections, it may be heat treated to high strength levels. In the normalized condition it has adequate strength for many applications. It may be nitrided for resistance to wear and abrasion.

4140 This chromium-molybdenum alloy is a deep hardening steel used where strength and impact toughness are required. It has high fatigue strength making it suitable for critical stressed applications. It may be nitrided for increased resistance to wear and abrasion.

4340 This chromium-nickel-molybdenum alloy is a widely used deep-hardening steel. It possesses remarkable ductility and toughness. With its high alloy content uniform hardness is developed by heat treatment in relatively heavy sections. Its high fatigue strength makes it ideal for highly stressed parts.

6150 This chromium-vanadium alloy steel is similar to 4340. It has good hardenability, good fatigue properties and excellent resistance to impact and abrasion.

8620 This is a "triple alloy" chromium-nickel-molybdenum steel. It is readily carburized. It may be heat treated to produce a strong, tough core and high case hardness. It has excellent machinability and responds well to polishing operations. It is easily welded by any of the common welding processes, although the section should be heated and stress relieved after welding.

9310 This chromium-nickel-molybdenum alloy is a carburizing steel capable of attaining high case hardness with high core strength. It has excellent toughness and ductility.

4620 This nickel-molybdenum alloy is a carburizing steel capable of developing high case hardness and core toughness. It can be forged similarly to the other carburizing grades. Because of its relatively high nickel content, it is not as readily cold-formed.

5160 This carbon-chromium grade of spring steel has a high yield/tensile strength ratio, excellent toughness and high ductility. It is very difficult to machine in the as-rolled condition and should be annealed prior to machining. It is not readily welded, but it can be welded by either the gas or arc welding processes if the section involved is preheated and stress relieved after welding.

52100 This high carbon-high chromium alloy is produced by the electric furnace process and then vacuum degassed to meet the rigid standards of the aircraft industry for bearing applications. It develops high hardness and has exceptional resistance to wear and abrasion.

ME

SHEET GAUGES

| Gauge No. | STEEL SHEETS | | GALVANIZED SHEETS | | STAINLESS STEEL SHEETS | | | ALUMINUM SHEETS | |
|-----------|----------------------------|---------------------|----------------------------|---------------------|--------------------------------|------------------------------|-----------------------------|-----------------------------------|---------------------|
| | Weight Lbs. per Square Ft. | Thickness in Inches | Weight Lbs. per Square Ft. | Thickness in Inches | Weight Lbs. per Square Ft. | | Approx. Thickness in Inches | Weight Lbs. per Square Ft. (1100) | Thickness in Inches |
| | | | | | Straight Chromium (400 Series) | Chromium Nickel (300 Series) | | | |
| 38 | .25000 | .0060 | | | | | | .0558 | .00396 |
| 37 | .26562 | .0064 | | | | | | .0627 | .00445 |
| 36 | .28125 | .0067 | | | | | | .0705 | .00500 |
| 35 | .31250 | .0075 | | | | | | .0791 | .00561 |
| 34 | .34375 | .0082 | | | | | | .0888 | .00630 |
| 33 | .39500 | .0090 | | | | | | .0998 | .00708 |
| 32 | .40625 | .0097 | .56250 | .0134 | .3708 | .3780 | .010 | .1121 | .00795 |
| 31 | .43750 | .0105 | .59375 | .0142 | .4506 | .4594 | .011 | .1259 | .00893 |
| 30 | .50000 | .0120 | .65625 | .0157 | .5150 | .5250 | .013 | .1410 | .0100 |
| 29 | .56250 | .0135 | .71875 | .0172 | .5794 | .5906 | .014 | .1593 | .0113 |
| 28 | .62500 | .0149 | .78125 | .0187 | .6438 | .6562 | .016 | .1777 | .0126 |
| 27 | .68750 | .0164 | .84375 | .0202 | .7081 | .7218 | .017 | .2002 | .0142 |
| 26 | .75000 | .0179 | .90625 | .0217 | .7725 | .7875 | .019 | .2242 | .0159 |
| 25 | .87500 | .0209 | 1.03125 | .0247 | .9013 | .9187 | .022 | .2524 | .0179 |
| 24 | 1.0000 | .0239 | 1.15625 | .0276 | 1.0300 | 1.0500 | .025 | .2834 | .0201 |
| 23 | 1.1250 | .0269 | 1.28125 | .0306 | 1.1587 | 1.1813 | .028 | .3187 | .0226 |
| 22 | 1.2500 | .0299 | 1.40625 | .0336 | 1.2875 | 1.3125 | .031 | .3567 | .0253 |
| 21 | 1.3750 | .0329 | 1.53125 | .0366 | 1.4160 | 1.4437 | .034 | .4019 | .0285 |
| 20 | 1.5000 | .0359 | 1.65625 | .0396 | 1.5450 | 1.5750 | .038 | .4512 | .0320 |
| 19 | 1.7500 | .0418 | 1.90625 | .0456 | 1.8025 | 1.8375 | .044 | .5062 | .0359 |
| 18 | 2.0000 | .0478 | 2.15625 | .0516 | 2.0600 | 2.1000 | .050 | .5682 | .0403 |
| 17 | 2.2500 | .0538 | 2.40625 | .0575 | 2.3175 | 2.3625 | .056 | .6387 | .0453 |
| 16 | 2.5000 | .0598 | 2.65625 | .0635 | 2.5750 | 2.6250 | .063 | .7163 | .0508 |
| 15 | 2.8125 | .0673 | 2.96875 | .0710 | 2.8968 | 2.9531 | .070 | .8051 | .0571 |
| 14 | 3.1250 | .0747 | 3.28125 | .0785 | 3.2187 | 3.2812 | .078 | .9038 | .0641 |
| 13 | 3.7500 | .0897 | 3.90625 | .0934 | 3.8625 | 3.9375 | .094 | 1.015 | .0720 |
| 12 | 4.3750 | .1046 | 4.53125 | .1084 | 4.5063 | 4.5937 | .109 | 1.139 | .0808 |
| 11 | 5.0000 | .1196 | 5.15625 | .1233 | 5.1500 | 5.2500 | .125 | 1.279 | .0907 |
| 10 | 5.6250 | .1345 | 5.78125 | .1382 | 5.7937 | 5.9062 | .141 | 1.437 | .1019 |
| 9 | 6.2500 | .1495 | 6.40625 | .1532 | 6.4375 | 6.5625 | .156 | 1.613 | .1144 |
| 8 | 6.8750 | .1644 | 7.03125 | .1681 | 7.0813 | 7.2187 | .172 | 1.812 | .1285 |
| 7 | 7.5000 | .1793 | | | | | | 2.035 | .1443 |
| 6 | 8.1250 | .1943 | | | | | | 2.284 | .1620 |
| 5 | 8.7500 | .2092 | | | | | | 2.565 | .1819 |
| 4 | 9.3750 | .2242 | | | | | | 2.881 | .2043 |
| 3 | 10.0000 | .2391 | | | | | | 3.235 | .2294 |

BENDING OF 4130 STEEL

Specification MIL-S-18729C states that 4130 steel .749 inch and less in thickness shall withstand bending without cracking at room temperature, with the axis of bending transverse to the direction of rolling, through an angle as indicated in the table. Condition N materials shall be bent around a diameter three times the thickness of the material. Test samples are bent cold either by pressure or blows. In the event of dispute, bending shall be by pressure. Paragraph 4.5.3 of the specification states that the formation of cracks not over 1/16" in aggregate lengths at the corners on the outside of the bend shall not be cause for rejection.

| Thickness of Material Inches | Min. Angle of Bend Cond. N Degrees |
|------------------------------|------------------------------------|
| Under .090 | 180 |
| .090 to .187, Incl. | 135 |
| Over .187 to .249, Incl. | 90 |
| Over .249 to .749, Incl. | 90 |

STEEL ALLOY DESIGNATIONS

STANDARD AISI AND SAE STEELS

Studies have been made in the steel industry for the purpose of establishing certain "standard" steels and eliminating as much as possible the manufacture of other steels which vary only slightly in composition from the standard steels. These standard steels are selected on the basis of serving the significant metallurgical and engineering needs of fabricators and users of steel products.

STANDARD CARBON STEELS

Definition. By common custom, steel is considered to be carbon steel when no minimum content is specified or required for aluminum, boron, chromium, cobalt, columbium, molybdenum, nickel, titanium, tungsten, vanadium or zirconium, or for any other element added to obtain a desired alloying effect; when the specified minimum for copper does not exceed 0.40 per cent; or when the maximum content specified for any of the following elements does not exceed the percentages noted: manganese 1.65, silicon 0.60, copper 0.60.

NUMBERING SYSTEM. In the AISI system of identification, the prefix "B" is used to designate acid bessemer steel. The letter "L" within the grade number is used to identify leaded steels.

A four-numeral series is used to designate graduations of chemical composition of carbon steel. The last two numbers of which are intended to indicate the approximate middle of the carbon range. For example, in the grade designation 1035, 35 represents a carbon range of 0.32 to 0.38 per cent.

It is necessary, however, to deviate from this rule and to interpolate numbers in the case of some carbon ranges and for variations in manganese, phosphorus or sulphur with the same carbon range.

The first two digits of the four-numeral series of the various grades of carbon steel and their meanings are as follows:

| | |
|------|---|
| 10xx | Nonresulfurized carbon steel grades |
| 11xx | Resulfurized carbon steel grades |
| 12xx | Rephosphorized and resulfurized carbon steel grades |
| 15xx | Nonresulfurized high manganese carbon steels. |

STANDARD ALLOY STEELS

DEFINITION. Steel is considered to be alloy steel when the maximum of the range given for the content of alloying elements exceeds one or more of the following limits: manganese, 1.65 per cent; silicon, 0.60 per cent; copper, 0.60 per cent; or in which a definite range or a definite minimum quantity of any of the following elements is specified or required within the limits of the recognized field of constructional alloy steels: aluminum, boron, chromium up to 3.99 per cent, cobalt, columbium, molybdenum, nickel, titanium, tungsten, vanadium, zirconium or any other alloying element added to obtain a desired alloying effect.

NUMBERING SYSTEM. In the AISI numbering system, the prefix letter E is used to designate steels normally made only by the basic electric furnace process. Steels without a prefix letter are normally manufactured by the basic open hearth or basic oxygen processes, but may be manufactured by the basic electric furnace process with adjustments in phosphorus and sulphur limits.

The last two digits of the four-numeral series are intended to indicate the approximate middle of the carbon range. For example, in the grade designation 4142, 42 represents a carbon range of 0.40 to 0.45 per cent. (Where a five-numeral series occurs, the last three digits indicate the carbon content.) It is necessary, however, to deviate from this rule and to interpolate numbers in the case of some carbon ranges, and for variations in manganese, sulphur, chromium, or other elements.

The first two digits indicate the type of alloy according to alloying elements as follows:

| | |
|-------|--|
| 13xx | Manganese 1.75 per cent |
| 40xx | Molybdenum 0.20 or 0.25 per cent |
| 41xx | Chromium 0.50, 0.80 or 0.95 per cent — Molybdenum 0.12, 0.20 or 0.30 per cent |
| 43xx | Nickel 1.83 per cent—Chromium 0.50 or 0.80 percent —Molybdenum 0.25 per cent |
| 44xx | Molybdenum 0.53 per cent |
| 46xx | Nickel 0.85 or 1.83 per cent—Molybdenum 0.20 or 0.25 percent |
| 47xx | Nickel 1.05 per cent Chromium 0.45 per cent |
| 48xx | Nickel 3.50 per cent Molybdenum 0.25 per cent |
| 50xx | Chromium 0.40 per cent |
| 51xx | Chromium 0.80, 0.88, 0.93, 0.95 or 1.00 per cent |
| 5xxxx | Carbon 1.04 per cent -- chromium 1.03 or 1.45 per cent |
| 61xx | Chromium 0.60 or 0.95 per cent -- Vanadium 0.13 per cent or 0.15 per cent min. |

| | |
|------|--|
| 86xx | Nickel 0.55 per cent --Chromium 0.50 per cent-- Molybdenum 0.25 per cent |
| 87xx | Nickel 0.55 per cent -- Chromium 0.50 per cent -- Molybdenum 0.35 |
| 88xx | Nickel 0.55 per cent --Chromium 0.50 per cent -- Molybdenum 0.35 |
| 92xx | Silicon 2.00 per cent |

EFFECTS OF COMMON ALLOYING ELEMENTS IN STEEL

By definition, steel is a combination of iron and carbon. Steel is alloyed with various elements to improve physical properties and to produce special properties, such as resistance to corrosion or heat. Specific effects of the addition of such elements are outlined below:

CARBON (C), although not usually considered as an alloying element, is the most important constituent of steel. It raises tensile strength, hardness and resistance to wear and abrasion. It lowers ductility, toughness and machinability.

MANGANESE (Mn) is a deoxidizer and degasifier and reacts with sulphur to improve forgeability. It increases tensile strength, hardness, hardenability and resistance to wear. It decreases tendency toward scaling and distortion. It increases the rate of carbon-penetration in carburizing.

PHOSPHORUS (P) increases strength and hardness and improves machinability. However, it adds marked brittleness or cold-shortness to steel.

SULPHUR (S) Improves machinability in free-cutting steels, but without sufficient manganese it produces brittleness at red heat. It decreases weldability, impact toughness and ductility.

SILICON (Si) is a deoxidizer and degasifier. It increases tensile and yield strength, hardness, forgeability and magnetic permeability.

CHROMIUM (Cr) increases tensile strength, hardness, hardenability, toughness, resistance to wear and abrasion, resistance to corrosion and scaling at elevated temperatures.

NICKEL (Ni) increases strength and hardness without sacrificing ductility and toughness. It also increases resistance to corrosion and scaling at elevated temperatures when introduced in suitable quantities in high chromium (stainless) steels.

MOLYBDENUM (Mo) increases strength, hardness, hardenability and toughness, as well as creep resistance and strength at elevated temperatures. It improves machinability and resistance to corrosion and it intensifies the effects of other alloying elements. In hot-work steels, it increases red-hardness properties.

TUNGSTEN (W) increases strength, hardness and toughness. Tungsten steels have superior hot-working and greater cutting efficiency at elevated temperatures.

VANADIUM (V) increases strength, hardness and resistance to shock impact. It retards grain growth, permitting higher quenching temperatures. It also enhances the red hardness properties of high speed metal cutting tools and intensifies the individual effects of other major elements.

COBALT (Co) Increases strength and hardness and permits higher quenching temperatures. It also intensifies the individual effects of other major elements in more complex steels.

ALUMINUM (Al) is a deoxidizer and degasifier. It retards grain growth and is used to control austenitic grain size. In nitriding steels it aids in producing a uniformly hard and strong nitrided case when used in amounts 1.00% - 1.25%.

LEAD (Pb), while not strictly an alloying element, is added to improve machining characteristics. It is almost completely insoluble in steel, and minute lead particles, well dispersed, reduce friction where the cutting edge contacts the work. Addition of lead also improves chip-breaking formations.

METAL HARDNESS & FINISHING DATA

HEAT TREATMENT OF STEEL

By thermal treatment, steel may be made harder or softer, stresses induced or relieved, mechanical properties increased or decreased, crystalline structure changed, machinability enhanced, etc. The terms used to describe such heat treatments and their effects are listed below.

NORMALIZE

Normalizing consists of uniform heating to a temperature slightly above the point at which grain structure is affected (known as the critical temperature), followed by cooling in still air to room temperature. This produces a uniform structure and hardness throughout.

ANNEAL

When not preceded by a descriptive adjective, annealing consists of heating to and holding at a suitable temperature, then allowing to cool slowly. Annealing removes stresses, reduces hardness, increases ductility and produces a structure favorable for formability.

Full Anneal - This term is synonymous with annealing and is used to differentiate anneal from bright anneal, stress relief anneal, etc.

Spheroidize Anneal - This treatment is similar to full annealing except the steel is held at an elevated temperature for a prolonged period of time, followed by slow cooling in order to produce a microstructure where carbides exist in a globular or spheroidal form.

Soft Anneal - When maximum softness and ductility are required without change in grain structure, steel should be ordered soft annealed. This process consists of heating to a temperature slightly below the critical temperature and cooling in still air.

Stress Relief Anneal - Stress relieving is intended to reduce the residual stresses imparted to the steel in the drawing operation. It generally consists of heating the steel to a suitable point below the critical temperature followed by slow cooling.

Bright Anneal - This process consists of annealing in a closely controlled furnace atmosphere which will permit the surface to remain relatively bright.

QUENCH

Quenching consists of heating steel above the critical range, then hardening by immersion in an agitated bath of oil, water, brine or caustic. Quenching increases tensile strength, yield point and hardness. It reduces ductility and impact resistance. By subsequent tempering some ductility and impact resistance may be restored, but at some sacrifice of tensile strength, yield point and hardness.

TEMPER

Tempering is the reheating of steel, after quenching, to the specified temperature below the critical range, then air cooling. It is done in furnaces, oil or salt baths, at temperatures varying from 300 to 1200°F. Low tempering temperatures give maximum hardness and wear resistance. Maximum toughness is achieved at the higher temperatures.

RELATIONSHIP OF HARDNESS TO TENSILE STRENGTH OF CARBON & ALLOY STEEL

| Brinell Indentation Diameter mm | Brinell Hardness Number | | Rockwell Hardness Number | | Tensile Strength (Approx-1000 psi) |
|---------------------------------|-------------------------|-----------------------|--------------------------|---------|------------------------------------|
| | Standard Ball | Tungsten Carbide Ball | B Scale | C Scale | |
| 2.45 | --- | 627 | --- | 58.7 | 347 |
| 2.50 | --- | 601 | --- | 57.3 | 328 |
| 2.55 | --- | 578 | --- | 56.0 | 313 |
| 2.60 | --- | 555 | --- | 54.7 | 298 |
| 2.65 | --- | 534 | --- | 53.5 | 288 |
| 2.70 | --- | 514 | --- | 52.1 | 274 |
| 2.75 | --- | 495 | --- | 51.0 | 264 |
| 2.80 | --- | 477 | --- | 49.6 | 252 |
| 2.85 | --- | 461 | --- | 48.5 | 242 |
| 2.90 | --- | 444 | --- | 47.1 | 230 |
| 2.95 | 429 | 429 | --- | 45.7 | 219 |
| 3.00 | 415 | 415 | --- | 44.5 | 212 |
| 3.05 | 401 | 401 | --- | 43.1 | 202 |
| 3.10 | 388 | 388 | --- | 41.8 | 193 |
| 3.15 | 375 | 375 | --- | 40.4 | 184 |
| 3.20 | 363 | 363 | --- | 39.1 | 177 |
| 3.25 | 352 | 352 | --- | 37.9 | 171 |
| 3.30 | 341 | 341 | --- | 36.6 | 164 |
| 3.35 | 331 | 331 | --- | 35.5 | 159 |
| 3.40 | 321 | 321 | --- | 34.3 | 153 |
| 3.45 | 311 | 311 | --- | 33.1 | 149 |
| 3.50 | 302 | 302 | --- | 32.1 | 146 |
| 3.55 | 293 | 293 | --- | 30.9 | 141 |
| 3.60 | 285 | 285 | --- | 29.9 | 138 |
| 3.65 | 277 | 277 | --- | 28.8 | 134 |
| 3.70 | 269 | 269 | --- | 27.6 | 130 |
| 3.75 | 262 | 262 | --- | 26.6 | 127 |
| 3.80 | 255 | 255 | --- | 25.4 | 124 |
| 3.85 | 248 | 248 | --- | 24.2 | 120 |
| 3.90 | 241 | 241 | 100.00 | 22.8 | 116 |
| 3.95 | 235 | 235 | 99.0 | 21.7 | 114 |
| 4.00 | 229 | 229 | 98.2 | 20.5 | 111 |
| 4.05 | 223 | 223 | 97.3 | --- | 104 |
| 4.10 | 217 | 217 | 96.4 | --- | 103 |
| 4.15 | 212 | 212 | 95.5 | --- | 100 |
| 4.20 | 207 | 207 | 94.6 | --- | 99 |
| 4.25 | 201 | 201 | 93.8 | --- | 97 |
| 4.30 | 197 | 197 | 92.8 | --- | 94 |
| 4.35 | 192 | 192 | 91.9 | --- | 92 |
| 4.40 | 187 | 187 | 90.7 | --- | 90 |
| 4.45 | 183 | 183 | 90.0 | --- | 89 |
| 4.50 | 179 | 179 | 89.0 | --- | 88 |
| 4.55 | 174 | 174 | 87.8 | --- | 86 |
| 4.60 | 170 | 170 | 86.8 | --- | 84 |
| 4.65 | 167 | 167 | 86.0 | --- | 83 |
| 4.70 | 163 | 163 | 85.0 | --- | 82 |
| 4.80 | 156 | 156 | 82.9 | --- | 80 |
| 4.90 | 149 | 149 | 80.8 | --- | 73 |
| 5.00 | 143 | 143 | 78.7 | --- | 71 |
| 5.10 | 137 | 137 | 76.4 | --- | 67 |
| 5.20 | 131 | 131 | 74.0 | --- | 65 |
| 5.30 | 126 | 126 | 72.0 | --- | 63 |
| 5.40 | 121 | 121 | 69.0 | --- | 60 |
| 5.50 | 116 | 116 | 67.6 | --- | 58 |
| 5.60 | 111 | 111 | 65.7 | --- | 56 |

* This table, which is based on ASTM A 370-68, Table III, lists the approximate relationship of hardness values to corresponding approximate tensile strength values of steels. Some compositions and processing histories may deviate from these relationships. The data in this table do not represent hardness-to-tensile strength conversions for austenitic, ferritic, and martensitic stainless steel. If more precise conversions are required, they should be developed for each specific composition and heat treatment. Related Rockwell superficial hardness numbers, if of interest, may be found in ASTM A 370-68.

METAL FINISHING DATA

Cadmium Plating - a nonporous electrolytically deposited layer of cadmium that offers better corrosion resistance for steel than zinc coating. Plating is per specification MIL-P-416A (or equivalent commercial specification QQ-P-416A). Three types of cadmium plating are considered in this specification:

- Type I** - Pure silver-colored cadmium plate, without supplementary treatment. This type of cadmium coating was used on all steel aircraft hardware in the past.
- Type II** - This consists of Type I plating followed by a chromate treatment. Type II plating is a light to dark gold color. It has improved corrosion resistance. Procurement specifications for aircraft hardware now specify Type II plating.
- Type III** - This is Type I coating followed by a phosphate treatment. It is used mainly as a paint base.

In addition to the type of plating, MIL-P-416A also defines the plating thickness in terms of the following classes:

Class 1 - .0005" minimum, Class 2 - .0003" minimum, Class 3 - .0002" min. Steel parts with a Rockwell hardness greater than Rc40 (approx. 180,000 PSI tensile strength) must be stress relieved before cleaning and plating, and if they are subject to flexure (springs, etc.) they must be baked at 375°F. within 30 minutes after plating to prevent hydrogen embrittlement.

Anodizing - This finish, applied to aluminum by an acid plating process, hardens the surface, reduces porosity, increases abrasion resistance and has high dielectric strength. Anodized aluminum can be dyed almost any color. Specification MIL-A-8625B covers three types of anodizing:

- Type I** - Chromic anodize coating will vary from a light to a dark gray color, depending on the alloy. Coating is given a chromate treatment to seal surface.
- Type II** - Sulfuric anodize coating is the best coating for dyeing (Class 2). Non-dyed (Class 1) coatings will have a dull yellow-green (gold) appearance when sealed with a chromate treatment.
- Type III** - Hard anodize coating can be used as an electrical insulation coating or as an abrasion resisting coating on devices such as hydraulic cylinders, wear surfaces and actuating cams.

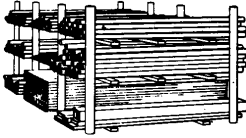
Bonderizing - a chemical process which rust proofs steel and supplies a base for paint or enamel. This treatment is used on AN301 steel aircraft nails.

Phosphate Coating - is a light coating applied to steel parts as a paint base. Most Tinnerman speed nuts are phosphate coated before painting with olive drab paint.

ME

4130 STRUCTURAL TUBING

4130 ALLOY STEEL ROUND SEAMLESS TUBING MIL-T-6736 NORMALIZED /ANNEALED



4130 is a chromium-molybdenum general purpose alloy steel tubing that is weldable and is capable of developing good strength. It has been for years the standard of the aircraft industry. Tensile Strength: 90,000 PSI. The stock sizes listed below can be furnished in lengths from 1 foot to 12 feet. Large orders are filled in random lengths from 10 to 12 feet unless specific lengths are requested. No charge is made for cutting stock sizes of tubing to mailable length. Quotations furnished on unlisted sizes.

IF MFG TEST REPORTS ARE REQUIRED THERE IS A MINIMUM \$25.00 CHARGE PER ORDER. CHARGE IS HIGHER IF MORE THAN 5 ITEMS. P/N "CERTS" - PLEASE INDICATE AT TIME OF ORDER

ME

| O.D. (In.) | Wall Thickness | I.D. (In.) | Wt. Per Ft. | Part No. | Price Per Ft. |
|------------|----------------|------------|-------------|----------|---------------|
| 3/16 | .028 | .131 | .0478 | 03-00100 | . |
| 1/4 | .028 | .194 | .0672 | 03-00250 | . |
| | .035 | .180 | .0804 | 03-00300 | . |
| | .049 | .152 | .1052 | 03-00400 | . |
| | .058 | .134 | .1189 | 03-00500 | . |
| | .065 | .120 | .1284 | 03-00510 | . |
| 5/16 | .028 | .256 | .0852 | 03-00600 | . |
| | .035 | .243 | .1039 | 03-00700 | . |
| | .049 | .215 | .1382 | 03-00800 | . |
| | .058 | .196 | .1580 | 03-00810 | . |
| | .065 | .182 | .1722 | 03-00900 | . |
| 3/8 | .095 | .123 | .2212 | 03-01000 | . |
| | .028 | .319 | .1038 | 03-01100 | . |
| | .035 | .305 | .1271 | 03-01200 | . |
| | .049 | .277 | .1706 | 03-01300 | . |
| | .058 | .259 | .1964 | 03-01400 | . |
| 7/16 | .065 | .249 | .2152 | 03-01500 | . |
| | .083 | .209 | .2588 | 03-01600 | . |
| | .095 | .185 | .2841 | 03-01610 | . |
| | .035 | .367 | .1506 | 03-01700 | . |
| | .049 | .340 | .2036 | 03-01800 | . |
| 1/2 | .065 | .307 | .2589 | 03-02000 | . |
| | .095 | .247 | .3480 | 03-02100 | . |
| | .120 | .197 | .4075 | 03-02200 | . |
| | .028 | .444 | .1411 | 03-02300 | . |
| | .035 | .430 | .1738 | 03-02400 | . |
| 9/16 | .049 | .402 | .2360 | 03-02500 | . |
| | .058 | .384 | .2738 | 03-02600 | . |
| | .065 | .370 | .3020 | 03-02700 | . |
| | .083 | .334 | .3696 | 03-02710 | . |
| | .095 | .310 | .4109 | 03-02800 | . |
| 5/8 | .120 | .260 | .4870 | 03-02900 | . |
| | .035 | .492 | .1974 | 03-03000 | . |
| | .049 | .464 | .2690 | 03-03100 | . |
| | .065 | .432 | .3457 | 03-03200 | . |
| | .120 | .322 | .5677 | 03-03400 | . |
| 3/4 | .028 | .569 | .1785 | 03-03500 | . |
| | .035 | .555 | .2205 | 03-03600 | . |
| | .049 | .527 | .3014 | 03-03700 | . |
| | .058 | .509 | .3512 | 03-03800 | . |
| | .065 | .495 | .3888 | 03-03900 | . |
| 7/8 | .095 | .435 | .5377 | 03-04000 | . |
| | .120 | .385 | .6472 | 03-04100 | . |
| | .156 | .313 | .7814 | 03-04110 | . |
| | .028 | .694 | .2159 | 03-04250 | . |
| | .035 | .680 | .2673 | 03-04300 | . |
| 1 | .049 | .652 | .3668 | 03-04400 | . |
| | .058 | .634 | .4287 | 03-04500 | . |
| | .065 | .620 | .4755 | 03-04600 | . |
| | .095 | .560 | .6646 | 03-04700 | . |
| | .120 | .510 | .8074 | 03-04800 | . |
| 1-1/8 | .156 | .437 | .9897 | 03-04900 | . |
| | .188 | .375 | 1.128 | 03-05000 | . |
| | .035 | .805 | .3140 | 03-05300 | . |
| | .049 | .777 | .4323 | 03-05400 | . |
| | .058 | .759 | .5061 | 03-05500 | . |
| 1-1/4 | .065 | .745 | .5623 | 03-05600 | . |
| | .083 | .709 | .7021 | 03-05700 | . |
| | .095 | .685 | .7914 | 03-05800 | . |
| | .120 | .635 | .9676 | 03-05900 | . |
| | .188 | .500 | 1.379 | 03-06000 | . |

| O.D. (In.) | Wall Thickness | I.D. (In.) | Wt. Per Ft. | Part No. | Price Per Ft. |
|------------|----------------|------------|-------------|----------|---------------|
| 1 | .028 | .944 | .2907 | 03-06110 | . |
| | .035 | .930 | .3607 | 03-06100 | . |
| | .049 | .902 | .4977 | 03-06200 | . |
| | .058 | .884 | .5835 | 03-06300 | . |
| | .065 | .870 | .6491 | 03-06400 | . |
| | .083 | .833 | .8407 | 03-06450 | . |
| | .095 | .810 | .9182 | 03-06500 | . |
| | .120 | .760 | 1.128 | 03-06600 | . |
| | .156 | .687 | 1.406 | 03-06700 | . |
| | .188 | .625 | 1.630 | 03-06800 | . |
| 1-1/8 | .035 | 1.055 | .4074 | 03-06900 | . |
| | .049 | 1.027 | .5631 | 03-07000 | . |
| | .058 | 1.009 | .6609 | 03-07100 | . |
| | .065 | .995 | .7359 | 03-07200 | . |
| 1-1/4 | .095 | .935 | 1.045 | 03-07300 | . |
| | .120 | .885 | 1.288 | 03-07400 | . |
| | .035 | 1.180 | .4542 | 03-07500 | . |
| | .049 | 1.152 | .6285 | 03-07600 | . |
| 1-3/8 | .058 | 1.134 | .7384 | 03-07700 | . |
| | .065 | 1.120 | .8226 | 03-07800 | . |
| | .083 | 1.084 | 2.132 | 03-07810 | . |
| | .095 | 1.060 | 1.172 | 03-07900 | . |
| | .120 | 1.010 | 1.448 | 03-08000 | . |
| 1-1/2 | .156 | .938 | 1.823 | 03-08100 | . |
| | .035 | 1.305 | .5009 | 03-08210 | . |
| | .049 | 1.277 | .6939 | 03-08200 | . |
| | .058 | 1.259 | .8158 | 03-08300 | . |
| | .065 | 1.245 | .9094 | 03-08400 | . |
| 1-5/8 | .095 | 1.185 | 1.299 | 03-08500 | . |
| | .120 | 1.135 | 1.609 | 03-08600 | . |
| | .188 | 1.000 | 2.383 | 03-08700 | . |
| | .035 | 1.430 | .5476 | 03-08800 | . |
| | .049 | 1.402 | .7593 | 03-08900 | . |
| 1-3/4 | .058 | 1.384 | .8932 | 03-09000 | . |
| | .065 | 1.370 | .9962 | 03-09100 | . |
| | .083 | 1.334 | 1.256 | 03-09110 | . |
| | .095 | 1.310 | 1.426 | 03-09200 | . |
| | .120 | 1.260 | 1.769 | 03-09300 | . |
| 2 | .188 | 1.125 | 2.634 | 03-09400 | . |
| | .058 | 1.509 | .9707 | 03-09600 | . |
| | .065 | 1.495 | 1.083 | 03-09700 | . |
| | .083 | 1.459 | 1.10 | 03-00042 | . |
| | .095 | 1.435 | 1.552 | 03-09800 | . |
| 1-7/8 | .120 | 1.385 | 1.929 | 03-09900 | . |
| | .156 | 1.312 | 2.447 | 03-10000 | . |
| | .188 | 1.250 | 2.885 | 03-10100 | . |
| | .049 | 1.652 | .8902 | 03-10200 | . |
| | .058 | 1.634 | 1.048 | 03-10210 | . |
| 2-1/4 | .065 | 1.620 | 1.170 | 03-10300 | . |
| | .095 | 1.560 | 1.679 | 03-10400 | . |
| | .120 | 1.510 | 2.089 | 03-10500 | . |
| | .188 | 1.375 | 3.136 | 03-10510 | . |
| 2-1/2 | .250 | 1.375 | 2.249 | 03-10600 | . |
| | .049 | 1.902 | 1.021 | 03-10710 | . |
| | .065 | 1.870 | 1.343 | 03-10800 | . |
| 2-3/4 | .095 | 1.810 | 1.933 | 03-10900 | . |
| | .120 | 1.760 | 2.409 | 03-11000 | . |
| | .120 | 2.010 | 2.730 | 03-11100 | . |
| 2-1/2 | .250 | 2.000 | 6.008 | 03-11206 | . |
| | .120 | 2.260 | 3.050 | 03-11200 | . |
| 2-3/4 | .120 | 2.510 | 3.370 | 03-11210 | . |

Please call for price on any unlisted size.

Discount of 10% for 100 ft. or more of the same part number.

Ordering tubing/bar by the foot.

Add a dash number after part number to indicate length of tubing required.

Ex: 3 ft required add -3, 03-00100-3.

4130 TUBING KITS

We furnish complete 4130 tubing kits for a variety of aircraft designs including the Skybolt, Pitts Special, Acro Sport, Starduster, Osprey, and many more. The kits contain sufficient round, square, & streamline tubing to produce the pieces shown on our materials list for each design. We urge the builder to verify his own materials list against ours. Request kit list you require & current quotation. Enjoy big savings by purchasing a complete tubing kit for your aircraft at one time.

TUBE SEAL (LINE OIL)

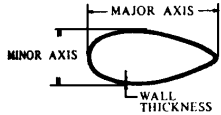
Prevents rust and corrosion inside aircraft tubing structures. Will climb tubing wall and spread over entire surface. Will penetrate and reveal small pin holes in a weld and in time, due to exposure, will congeal and seal the hole. Directions on label. One quart will treat two light aircraft fuselages. Quart..... P/N 03-14000.....

BARGAIN BAG 4130 TUBING

Starter Kit - An assortment of 4130 tubing, rod and bar in short lengths to practice welding. At least 15 ft. of tubing in assorted sizes and wall thicknesses. Furnished subject to availability of cutoffs.

P/N 03-15900.....

STEEL TUBING & ROD



4130 STREAMLINE TUBING MIL-T6736 NORMALIZED

The prices for streamline tubing have increased sharply. The only manufacturer of streamline tubing, Columbia Summerill, have encountered problems with cracking on the trailing edge intermittently for many years and it has been a worrisome problem for builders. In an effort to control the situation, Columbia Summerill have installed sophisticated inspection equipment in their plant to assure that no cracked tubing gets into the field again. The cost of the equipment is reflected in the prices for the tubing which must be shared by all.

| Major Axis | Minor Axis | Wall | Equivalent | | Wt./ Ft. | Part No. | Price Per Ft |
|------------|------------|------|---------------|---------------|----------|----------|--------------|
| | | | Round Tension | Tubing Compr. | | | |
| 1.012 | .428 | .035 | 3/4" | 1/2" | .2687 | 03-11300 | . |
| 1.180 | .500 | .035 | 7/8" | 7/16" | .3140 | 03-11400 | . |
| 1.349 | .571 | .049 | 1" | 5/8" | .4977 | 03-11500 | . |
| 1.685 | .714 | .049 | 1-1/4" | 3/4" | .6285 | 03-11600 | . |
| 2.023 | .857 | .049 | 1-1/2" | 1" | .7593 | 03-11700 | . |
| 2.360 | 1.000 | .049 | 1-3/4" | 1-1/8" | .8902 | 03-11800 | . |
| 2.697 | 1.143 | .049 | 2" | 1-1/4" | 1.021 | 03-11900 | . |
| 3.372 | 1.429 | .049 | 2-1/2" | 1-1/2" | 1.283 | 03-12000 | . |



4130 AIRFRAME SQUARE & RECTANGULAR TUBING MIL-T-6736 NORMALIZED

| O.D. (In.) | Wall (In.) | Weight Per Ft. | Part No. | Price Per Ft. |
|-------------|------------|----------------|----------|---------------|
| 3/8 x 3/8 | .049 | .2172 | 03-12100 | . |
| 1/2 x 1/2 | .035 | .2213 | 03-12200 | . |
| | .049 | .3005 | 03-12300 | . |
| 1/2 x 1 | .065 | .6055 | 03-12350 | . |
| | .035 | .2808 | 03-12400 | . |
| 5/8 x 5/8 | .049 | .4234 | 03-12500 | . |
| | .065 | .388 | 03-12600 | . |
| | .035 | .3403 | 03-12700 | . |
| 3/4 x 3/4 | .049 | .4671 | 03-12800 | . |
| | .058 | .5454 | 03-12900 | . |
| | .065 | .6055 | 03-13000 | . |
| 7/8 x 7/8 | .035 | .3998 | 03-13100 | . |
| | .049 | .5504 | 03-13200 | . |
| | .065 | .7160 | 03-13300 | . |
| 1 x 1 | .035 | .4593 | 03-13400 | . |
| | .049 | .6337 | 03-13500 | . |
| | .065 | .8265 | 03-13700 | . |
| 3/4 x 1-1/2 | .049 | .9057 | 03-13900 | . |
| 1 x 1-3/4 | .065 | 1.158 | 03-13950 | . |

E-4340 ROUND STEEL ROD SPEC. MIL-S-8503 COLD FINISHED ANNEALED



E4340 rod has high fatigue strength and maintains its hardness and strength qualities even at high temperatures. Excellent for use in highly stressed parts. Meets AMS2032 and is furnished normalized and tempered cold finished.

| Dia. (In.) | Wt./Ft. (Lbs.) | Part No. | Price / Ft. |
|------------|----------------|----------|-------------|
| 1 | 2.67 | 03-26700 | . |
| 1-1/4 | 4.173 | 03-26850 | . |
| 1-3/8 | 5.049 | 03-26900 | . |
| 2 | 11.20 | 03-26950 | . |

STAINLESS STEEL ROD TYPE 304 CD



3/16" Diameter type 304 CD stainless steel rod. Used in "new canard" for Long-EZ as specified by RAF.

P/N 03-26600 /ft.



STAINLESS STEEL TUBING

| Tubing Type | O.D. | Wall | Part No. | Price/Ft. |
|--------------|---------|-------|----------|-----------|
| 304 Welded | 3/8" | .028" | 03-16100 | . |
| 321 Welded | 1-1/2" | .035" | 03-16300 | . |
| 321 Welded | 1- 3/4" | .035" | 03-16400 | . |
| 321 Welded | 2" | .035" | 03-16500 | . |
| 304 Seamless | 1/8" | .020" | 03-00148 | . |
| 304 Seamless | 1/8" | .035" | 03-16010 | . |
| 304 Seamless | 3/16" | .035" | 03-16020 | . |
| 304 Seamless | 1/4" | .035" | 03-16030 | . |
| 304 Seamless | 5/16" | .035" | 03-16040 | . |
| 304 Seamless | 3/8" | .035" | 03-16045 | . |
| 304 Seamless | 1/2" | .035" | 03-16050 | . |
| 304 Seamless | 5/8" | .035" | 03-16060 | . |
| 321 Seamless | 1-1/4" | .028" | 03-16540 | . |
| 321 Seamless | 1-1/2" | .035" | 03-16560 | . |

BUSHING STOCK 1015/1020 STEEL

Seamless mechanical tubing may be used either statically or dynamically. Its close tolerance, good finish and dense structure make it ideal for parts such as shafts, bushings, bearings, etc. Tensile strength 80,000 PSI. Drill or ream for proper bolt fit.

SPECIFY CUTTING INSTRUCTIONS FOR SHIPMENT

| O.D. | I.D. | Wall | Part No. | Price/Ft. |
|------|------|-------|----------|-----------|
| 1/4" | 1/8" | .065" | 03-16550 | . |
| 3/8" | 1/4" | .065" | 03-16700 | . |
| 1/2" | 3/8" | .065" | 03-16900 | . |
| 5/8" | 1/2" | .065" | 03-17100 | . |

ROUND BRASS SEAMLESS TUBING

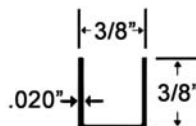
| O.D. | I.D. | Wall | Part No. | Price / Ft. |
|-------|-------|-------|----------|-------------|
| 1/4" | 3/16" | .032" | 03-17300 | . |
| 5/16" | 3/16" | .065" | 03-17400 | . |
| 7/16" | 5/16" | .065" | 03-17600 | . |
| 1/2" | 3/8" | .065" | 03-17800 | . |
| 5/8" | 3/8" | .125" | 03-17900 | . |

4130 ROUND STEEL ROD COLD FINISHED SPEC. MLL-S-6758A-NORMALIZED



| Dia (In.) | Wt./Ft. | Part No. | Price / Ft. |
|-----------|---------|----------|-------------|
| 1/8 | .042 | 03-20100 | . |
| 3/16 | .092 | 03-20200 | . |
| 1/4 | .167 | 03-20300 | . |
| 5/16 | .261 | 03-20400 | . |
| 3/8 | .376 | 03-20500 | . |
| 7/16 | .511 | 03-20600 | . |
| 1/2 | .668 | 03-20700 | . |
| 9/16 | .845 | 03-20800 | . |
| 5/8 | 1.043 | 03-20900 | . |
| 3/4 | 1.502 | 03-21000 | . |
| 7/8 | 2.044 | 03-21100 | . |
| 1 | 2.670 | 03-21200 | . |
| 1-1/4 | 4.173 | 03-21300 | . |
| 1-3/8 | 5.049 | 03-21400 | . |
| 1-1/2 | 6.008 | 03-21500 | . |
| 1-3/4 | 8.178 | 03-21600 | . |

Ordering tubing/bar by the foot. Add a dash number after part number to indicate length of tubing required.
Ex: 3 ft required add -3, 03-00100-3.

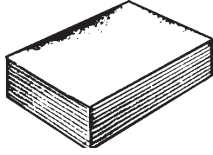


3/8" PIPER CHANNEL

Available in mild steel. 0.020" thick.
6-ft. lengthP/N 03-46600

ME

4130 SHEET



4130 STEEL SHEETS & STRIPS MIL-S-6345A NORMALIZED

This chromium-molybdenum alloy is one of the most widely used aircraft steels because of its combination of weldability, ease of fabrication and mild hardenability. It will respond to heat treatment to high strength levels and yet, in the annealed condition, it has adequate strength for many applications. Used for the manufacture of parts and components. Tensile strength 75,000-85,000 PSI. Furnished cold-rolled and oiled in sheet thicknesses of .025-.125 inch. Sheets of .190-.250 inch and greater thickness are hot-rolled, pickled and oiled. Sheared to sheet and strip sizes listed below. Subject to availability of normalized sheet, annealed 4130 sheet may be substituted.

4130 STEEL SHEET

| Thickness (In.) | Price per Piece | | | | | | | | | | | | Wt.** (Lbs.) |
|-----------------|-----------------|-------|----------|-------|----------|-------|-----------|-------|-----------|-------|-----------|-------|--------------|
| | 6" x 12' | | 9" x 9" | | 9" x 18" | | 18" x 18" | | 18" x 36" | | 18" x 72" | | |
| | Part No. | Price | Part No. | Price | Part No. | Price | Part No. | Price | Part No. | Price | Part No. | Price | |
| .025 | 03-21800 | . | 03-21850 | . | 03-21900 | . | 03-22000 | . | 03-22100 | . | 03-22150 | . | 2.30 |
| .032 | 03-22510 | . | 03-22515 | . | 03-22520 | . | 03-22525 | . | 03-22530 | . | 03-22535 | . | --- |
| .040 | 03-22600 | . | 03-22650 | . | 03-22700 | . | 03-22800 | . | 03-22900 | . | 03-22950 | . | 3.75 |
| .050 | 03-23000 | . | 03-23050 | . | 03-23100 | . | 03-23200 | . | 03-23300 | . | 03-23350 | . | 4.80 |
| .063 | 03-23400 | . | 03-23450 | . | 03-23500 | . | 03-23600 | . | 03-23700 | . | 03-23750 | . | 5.85 |
| .071 | 03-23800 | . | 03-23850 | . | 03-23900 | . | 03-24000 | . | 03-24100 | . | 03-24150 | . | 6.55 |
| .080 | 03-24200 | . | 03-24250 | . | 03-24300 | . | 03-24400 | . | 03-24500 | . | 03-24550 | . | 7.15 |
| .090 | 03-24600 | . | 03-55500 | . | 03-24700 | . | 03-24800 | . | 03-24900 | . | 03-24950 | . | 8.15 |
| .100 | 03-25000 | . | --- | --- | 03-25100 | . | 03-25200 | . | 03-25300 | . | 03-25350 | . | 10.45 |
| .125 | 03-55300 | . | 03-25370 | . | 03-25400 | . | 03-25500 | . | 03-25600 | . | --- | --- | 11.25 |
| .190 | --- | --- | 03-25660 | . | 03-25700 | . | 03-25750 | . | 03-26025 | . | --- | --- | 17.50 |
| .250 | --- | --- | 03-25850 | . | 03-25900 | . | 03-25950 | . | 03-26050 | . | --- | --- | 26.05 |

** Wt. per 18" x 18" sheet.

Less 10% discount on 6 sheets 18" x 36" or 3 sheets of 18" x 72" per part number.

4130 STEEL STRIPS

| Thickness | Size | Part No. | Price* |
|-----------|--------------|----------|--------|
| .025 | 5/8" x 72" | 03-18000 | . |
| .025 | 1" x 72" | 03-18100 | . |
| .032 | 5/8" x 72" | 03-18110 | . |
| .032 | 1" x 72" | 03-18120 | . |
| .032 | 2" x 72" | 03-18130 | . |
| .032 | 3" x 72" | 03-18140 | . |
| .040 | 5/8" x 72" | 03-18200 | . |
| .040 | 1" x 72" | 03-18300 | . |
| .040 | 2" x 72" | 03-18310 | . |
| .040 | 3" x 72" | 03-18320 | . |
| .050 | 1" x 72" | 03-18400 | . |
| .050 | 2" x 72" | 03-18410 | . |
| .050 | 3" x 72" | 03-18420 | . |
| .063 | 5/8" x 72" | 03-18500 | . |
| .063 | 3/4" x 72" | 03-18600 | . |
| .063 | 1" x 72" | 03-18700 | . |
| .063 | 1-1/4" x 72" | 03-18800 | . |
| .063 | 1-1/2" x 72" | 03-18900 | . |
| .063 | 2" x 72" | 03-19000 | . |
| .063 | 3" x 72" | 03-19100 | . |
| .071 | 5/8" x 72" | 03-19180 | . |
| .071 | 1" x 72" | 03-19200 | . |
| .071 | 2" x 72" | 03-19210 | . |
| .071 | 3" x 72" | 03-19220 | . |
| .080 | 5/8" x 72" | 03-19280 | . |
| .080 | 1" x 72" | 03-19290 | . |
| .080 | 2" x 72" | 03-19300 | . |
| .090 | 1" x 72" | 03-19400 | . |
| .090 | 1-1/2" x 72" | 03-19500 | . |
| .090 | 2" x 72" | 03-19520 | . |
| .090 | 3" x 72" | 03-19600 | . |
| .100 | 1" x 72" | 03-19610 | . |
| .100 | 1-1/2" x 72" | 03-19620 | . |
| .100 | 3" x 72" | 03-19630 | . |
| .125 | 1" x 72" | 03-19700 | . |
| .125 | 1-1/2" x 72" | 03-19800 | . |
| .125 | 2" x 72" | 03-19820 | . |
| .125 | 3" x 72" | 03-19900 | . |
| .250 | 1-1/4" x 18" | 03-20000 | . |

* 3-Ft. lengths available at the half price of 6' lengths.

6 ft. lengths are subject to UPS oversize charges. Consider 3 ft. lengths which ship at cheaper rates

4130 STEEL SHEET

(As Used in Christavia Kits)

| Thickness | Size | Part No. | Price |
|-----------|-----------|----------|-------|
| .040 | 8" x 8" | 03-56302 | . |
| .040 | 12" x 12" | 03-56304 | . |
| .040 | 12" x 20" | 03-56316 | . |
| .040 | 10" x 26" | 03-56312 | . |
| .040 | 12" x 24" | 03-56306 | . |
| .040 | 14" x 30" | 03-56308 | . |
| .040 | 18" x 30" | 03-56310 | . |
| .040 | 24" x 24" | 03-56314 | --- |
| .050 | 4" x 24" | 03-56320 | . |
| .050 | 12" x 12" | 03-56318 | . |
| .050 | 8" x 24" | 03-56322 | . |
| .050 | 12" x 24" | 03-56324 | . |
| .063 | 10" x 10" | 03-56326 | . |
| .063 | 10" x 14" | 03-56332 | . |
| .063 | 12" x 12" | 03-56328 | . |
| .063 | 12" x 24" | 03-56330 | . |
| .071 | 4" x 4" | 03-56334 | . |
| .071 | 12" x 12" | 03-56336 | . |
| .071 | 12" x 24" | 03-56338 | . |
| .080 | 2" x 10" | 03-56354 | . |
| .080 | 12" x 24" | 03-56340 | . |
| .090 | 2" x 10" | 03-56344 | . |
| .090 | 6" x 8" | 03-56342 | . |
| .090 | 12" x 24" | 03-56346 | . |
| .125 | 10" x 24" | 03-56348 | . |
| .125 | 12" x 24" | 03-56350 | . |

E4340 RECTANGULAR FLAT STEEL SPEC. MIL-S-5000 ANNEALED

This chromium-nickel-molybdenum alloy, "king" of the hardening grades of alloy steels, possesses much deeper hardenability than the 4100 series. The fatigue-tensile ratio makes it ideal for highly stressed parts such as landing gear legs, and is often referred to as "spring steel". Tensile strength is about 110,000 PSI. It is difficult to weld but can be welded by any of the common welding processes providing the section is preheated and stress relieved after welding.

| Size (In.) | Wt./Ft (Lbs.) | Part No. | Price/Ft. |
|-------------|---------------|----------|-----------|
| 1/4 x 1-1/2 | 1.275 | 03-26100 | . |
| 1/4 x 2 | 1.702 | 03-26150 | . |
| 3/8 x 2 | 2.550 | 03-26200 | . |
| 1/2 x 3 | 5.100 | 03-26300 | . |
| 1/2 x 4 | 6.800 | 03-26400 | . |

VACUUM MELTED LOW ALLOY 4130 STEEL WELDING WIRE

This high quality welding rod is produced from vacuum melted material. This material has ultra-low levels of oxygen, hydrogen, and nitrogen and is extremely low in trace elements. This rod is cleaner than standard rods and is the best available for 4130 welding. .062 dia. 36" long. Appro. 32 units per pound.

P/N 03-27600/lb.

BRASS BRAZING ROD

1/16" P/N 03-27625/lb.
3/32" P/N 03-00118/lb.

OXWELD WELDING ROD



For big-strength welds in steel plate, sheet, structural shapes, pipe and steel castings. Supplied in 36" lengths in sizes 1/16", 3/32" and 1/8".

NO. 32CMS - Recommended for 4130 steel structures for most satisfactory results. This rod is heat-treatable after welding.

1/16" Dia P/N 03-27000/lb.

3/32" Dia P/N 03-27100/lb.

1/8" Dia P/N 03-27200/lb.

NO. 7 - Used in general commercial welding and by many mechanics for non-heat-treated airframe repairs.

1/16" Dia P/N 03-27300/lb.

3/32" Dia P/N 03-27400/lb.

1/8" Dia P/N 03-27500/lb.

WELD BRUSH



Stainless steel bristles set in curved wooden handle. Just right for cleaning welds. 1/2" Wide x 8" Long.

P/N 03-26500/lb.

For Aluminum Welding Rod, see page 71.
For Welding Equipment, see pages 658-660.

ALUMINUM – THE MOST COMMON GRADES

1100 This grade is commercially pure aluminum. It is soft and ductile and has excellent workability. It is ideal for applications involving intricate forming because it work hardens more slowly than other alloys. It is the most weldable of aluminum alloys, by any method. It is non heat-treatable. It has excellent resistance to corrosion and is widely used in the chemical and food processing industries. It responds well to decorative finishes which make it suitable for giftware.

2011 This is the most free-machining of the common aluminum alloys. It also has excellent mechanical properties. Thus, it is widely used for automatic screw machine products in parts requiring extensive machining.

2014 & 2017 The 2017 alloy combines excellent machinability and high strength with the result that it is one of the most widely used alloys for automatic screw machine work. It is a tough, ductile alloy suitable for heavy-duty structural parts. Its strength is slightly less than that of 2014.

2024 This is one of the best known of the high strength aluminum alloys. With its high strength and excellent fatigue resistance, it is used to advantage on structures and parts where good strength-to-weight ratio is desired. It is readily machined to a high finish. It is readily formed in the annealed condition and may be subsequently heat treated. Arc or gas welding is generally not recommended, although this alloy may be spot, seam or flash welded. Since corrosion resistance is relatively low, 2024 is commonly used with an anodized finish or in clad form ("Alclad") with a thin surface layer of high purity aluminum. Applications: aircraft structural components, aircraft fittings, hardware, truck wheels and parts for the transportation industry.

3003 This is the most widely used of all aluminum alloys. It is essentially commercially pure aluminum with the addition of manganese which increases the strength some 20% over the 1100 grade. Thus, it has all the excellent characteristics of 1100 with higher strength. It has excellent corrosion resistance. It has excellent workability and it may be deep drawn or spun, welded or brazed. It is non heat treatable. Applications: cooking utensils, decorative trim, awnings, siding, storage tanks, chemical equipment.

5005 This alloy is generally considered to be an improved version of 3003. It has the same general mechanical properties as 3003 but appears to stand up better in actual service. It is readily workable. It can be deep drawn or spun, welded or brazed. It has excellent corrosion resistance. It is non heat-treatable. It is well suited for anodizing and has less tendency to streak or discolor. Applications same as 3003.

5052 This is the highest strength alloy of the more common non heat-treatable grades. Fatigue strength is higher than most aluminum alloys. In addition this grade has particularly good resistance to marine atmosphere and salt water corrosion. It has excellent workability. It may be drawn or formed into intricate shapes and its slightly greater strength in the annealed condition minimizes tearing that occurs in 1100 and 3003. Applications: Used in a wide variety of applications from aircraft components to home appliances, marine and transportation industry parts, heavy duty cooking utensils and equipment for bulk processing of food.

5083 & 5086 For many years there has been a need for aluminum sheet and plate alloys that would offer, for high strength welded applications, several distinct benefits over such alloys as 5052 and 6061. Some of the benefits fabricators have been seeking are greater design efficiency, better welding characteristics, good forming properties, excellent resistance to corrosion and the same economy as in other non heat-treatable alloys. Metallurgical research has developed 5083 and 5086 as superior weldable alloys which fill these needs. Both alloys have virtually the same characteristics with 5083 having slightly higher mechanical properties due to the increased manganese content over 5086. Applications: unfired pressure vessels, missile containers, heavy-duty truck and trailer assemblies, boat hulls and superstructures.

6061 This is the least expensive and most versatile of the heat-treatable aluminum alloys. It has most of the good qualities of aluminum. It offers a range of good mechanical properties and good corrosion resistance. It can be fabricated by most of the commonly used techniques. In the annealed condition it has good workability. In the T4 condition fairly severe forming operations may be accomplished. The full T6 properties may be obtained by artificial aging. It is welded by all methods and can be furnace brazed. It is available in the clad form ("Alclad") with a thin surface layer of high purity aluminum to improve both appearance and corrosion resistance. Applications: This grade is used for a wide variety of products and applications from truck bodies and frames to screw machine parts and structural components. 6061 is used where appearance and better corrosion resistance with good strength are required.

6063 This grade is commonly referred to as the architectural alloy. It was developed as an extrusion alloy with relatively high tensile properties, excellent finishing characteristics and a high degree of resistance to corrosion. This alloy is most often found in various interior and exterior architectural applications, such as windows, doors, store fronts and assorted trim items. It is the alloy best suited for anodizing applications - either plain or in a variety of colors.

7075 This is one of the highest strength aluminum alloys available. Its strength-to weight ratio is excellent and it is ideally used for highly stressed parts. It may be formed in the annealed condition and subsequently heat treated. Spot or flash welding can be used, although arc and gas welding are not recommended. It is available in the clad ("Alclad") form to improve the corrosion resistance with the over-all high strength being only moderately affected. Applications: Used where highest strength is needed.

ME

ALUMINUM ALLOY DESIGNATIONS

ALUMINUM ALLOY DESIGNATIONS

The aluminum industry uses a four-digit index system for the designation of its wrought aluminum alloys.

As outlined below, the first digit indicates the alloy group according to the major alloying elements.

1XXX SERIES

In this group, minimum aluminum content is 99%, and there is no major alloying element.

The second digit indicates modifications in impurity limits. If the second digit is zero, there is no special control on individual impurities. Digits 1 through 9, which are assigned consecutively as needed, indicate special control of one or more individual impurities.

The last two digits indicate specific minimum aluminum content. Although the absolute minimum aluminum content in this group is 99% the minimum for certain grades is higher than 99%, and the last two digits represent the hundredths of a per cent over 99.

Thus, 1030 would indicate 99.30% minimum aluminum, without special control on individual impurities. The designations 1130, 1230, 1330, etc., indicate the same purity with special control on one or more impurities. Likewise, 1100 indicates minimum aluminum content of 99.00% with individual impurity control.

2XXX THROUGH 9XXX SERIES

The major alloying elements are indicated by the first digit, as follows:

| | |
|------|-----------------------|
| 2xxx | Copper |
| 3xxx | Manganese |
| 4xxx | Silicon |
| 5xxx | Magnesium |
| 6xxx | Magnesium and silicon |
| 7xxx | Zinc |
| 8xxx | Other element |
| 9xxx | Unused series |

The second digit indicates alloy modification. If the second digit is zero, it indicates the original alloy; digits 1 through 9, which are assigned consecutively, indicate alloy modifications. The last two digits have no special significance, serving only to identify the different alloys in the group.

EXPERIMENTAL ALLOYS

Experimental alloys are designated according to the four digit system, but they are prefixed by the letter X. The prefix is dropped when the alloy becomes standard. During development, and before they are designated as experimental, new alloys are identified by serial numbers assigned by their originators. Use of the serial number is discontinued when the X number is assigned.

ALUMINUM TEMPER DESIGNATIONS

Temper designations of wrought aluminum alloys consist of suffixes to the numeric alloy designations. For example, in 3003-H14, 3003 denotes the alloy and "H14" denotes the temper, or degree of hardness. The temper designation also reveals the method by which the hardness was obtained. Temper designations differ between non heat-treatable alloys and heat-treatable alloys, and their meanings are given below:

NON HEAT-TREATABLE ALLOYS

The letter "H" is always followed by 2 or 3 digits. The first digit indicates the particular method used to obtain the temper, as follows:

- H1 means strain hardened only.
- H2 means strain hardened, then partially annealed.
- H3 means strain hardened, then stabilized.

The temper is indicated by the second digit as follows:

| | |
|---|------------|
| 2 | 1/4 hard |
| 4 | 1/2 hard |
| 6 | 3/4 hard |
| 8 | full hard |
| 9 | extra hard |

Added digits indicate modification of standard practice.

HEAT-TREATABLE ALLOYS

- F As fabricated
- O Annealed
- T Heat treated

The letter "T" is always followed by one or more digits. These digits indicate the method used to produce the stable tempers, as follows:

- T3 Solution heat treated, then cold worked.
 - T351 Solution heat treated, stress-relieved stretched, then cold worked.
 - T36 Solution heat treated, then cold worked (controlled).
 - T4 Solution heat treated, then naturally aged.
 - T451 Solution heat treated, then stress relieved stretched.
 - T5 Artificially aged only.
 - T6 Solution heat treated, then artificially aged.
 - T61 Solution heat treated (boiling water quench), then artificially aged.
 - T651 Solution heat treated, stress-relieved stretched, then artificially aged (precipitation heat treatment).
 - T652 Solution heat treated, stress relieved by compression, then artificially aged.
 - T7 Solution heat treated, then stabilized.
 - T8 Solution heat treated, cold worked, then artificially aged.
 - T81 Solution heat treated, cold worked (controlled), then artificially aged.
 - T851 Solution heat treated, cold worked, stress-relieved stretched, then artificially aged.
 - T9 Solution heat treated, artificially aged, then cold worked.
 - T10 Artificially aged, then cold worked.
- Added digits indicate modification of standard practice.

COMPARISON OF MODERN & OLD SYSTEMS OF ALUMINUM ALLOY DESIGNATION

Although the old system of aluminum identification has been obsolete for many years, stock with the old markings is still occasionally found. The following comparison is presented as an aid in identifying such materials in terms of the modern system.

In the old system, alloy composition was indicated by a one- or two-digit number followed by the letter "S" to indicate that it was a wrought alloy, i.e., an alloy that could be shaped by rolling, drawing or forging. Any variation in the basic composition was indicated by a letter preceding the numerical alloy designation. For example, A17S was a modification of the basic alloy 17S. In modern terminology these two alloys are designated 2117S and 2017S, respectively. Temper was designated by a second letter: "O" for soft (annealed), "H" for strain hardness of non heat-treatable alloys, and "T" for hardness of heat-treatable alloys. Degree of hardness of non heat-treatable alloys was indicated by a fraction preceding the letter "H". For example, 3S1/4H would be quarter-hard 3S alloy.

The following Table gives examples of the old and modern designations of some common aluminum alloys.

| Modern System | Old System |
|---------------|------------|
| 1100 | 2S |
| 3003 | 3S |
| 3003-0 | 3SO |
| 2014 | 14S |
| 2017 | 17S |
| 2117 | A17S |
| 2018 | 18S |
| 2218 | B18S |
| 2024T | 24ST |
| 5052 | 52S |
| 7075T6 | 75ST6 |

ALUMINUM PLATE & SHEET DATA

ALUMINUM ALLOY CHARACTERISTICS

| Alloy | Gen'l. Availability | | | | | | Typical Characteristics* | | | | | | | Specified Mechanical Properties | | | | | |
|---------------------------|---------------------|------------------|------------|---------------------|-------|----------------------|--------------------------|---------------|-------------|-------------|-----|----------------------------|---|---------------------------------|------------------|------------------|---|-------|-------|
| | Temper | Flat Sheet | Coil Sheet | Cut to Length Sheet | Plate | Corrosion Resistance | Cold Workability | Machinability | Brazability | Weldability | | | Where range is shown, property varies with specific width and/or thickness dimensions | | | | | | |
| | | | | | | | | | | Gas | Arc | Resistance, spot and steam | Tensile Strength - Ksi | | | | Elongation in 2" or 4 times diameter -percent minimum | | |
| | | | | | | | | | | | | | Ultimate | Yield | Minimum | Maximum | Sheet | Plate | |
| Minimum | Maximum | Minimum | Maximum | Sheet | Plate | | | | | | | | | | | | | | |
| Non-Heat Treatable Alloys | 1100 | O | X | X | X | - | A | A | D | A | A | A | B | 11 | 15.5 | 3.5 ¹ | - | 15-30 | - |
| | | H14 | X | X | X | - | A | A | C | A | A | A | A | 16 | 21 | 14 ¹ | - | 3-9 | - |
| | | F | - | - | - | X | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3003 | O | X | X | X | - | A | A | D | A | A | A | B | 14 | 19 | 5 ¹ | - | 14-25 | - | |
| | H14 | X | X | X | - | A | B | C | A | A | A | A | 20 | 26 | 17 ¹ | - | 1-7 | - | |
| | F | - | - | - | X | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 5052 | O | X | X | X | X | A | A | D | C | A | A | B | 25 | 31 | 9.5 ¹ | - | 15-20 | - | |
| | H32 | X | X | X | X | A | B | C | C | A | A | A | 31 | 38 | 23 ¹ | - | 4-9 | 11-12 | |
| | H34 | X | X | X | - | A | B | C | C | A | A | A | 34 | 41 | 26 ¹ | - | 3-7 | - | |
| Heat-Treatable Alloys | Bare 2024 | O ³ | X | - | - | X | C | B | D | D | D | C | B | - | 32 | - | 14 | 12 | 12 |
| | | T3 | X | - | - | - | C | C | B | D | D | C | A | 63-64 | - | 42 | - | 10-15 | - |
| | | T351 | - | - | - | X | C | C | B | D | D | C | A | 56-64 | - | 40-41 | - | - | 4-12 |
| | | T42 ² | - | - | - | - | C | C | B | D | D | C | A | 58-62 | - | 38 | - | 12-15 | 4-12 |
| | Alclad 2024 | O ³ | X | X | - | X | A | B | D | D | D | C | B | - | 30-32 | - | 14 | 10-12 | 12 |
| | | T3 | X | - | - | - | A | D | B | D | D | C | A | 58-63 | - | 39-40 | - | 10-15 | - |
| | | T351 | - | - | - | X | A | D | B | D | D | C | A | 56-63 | - | 40-41 | - | - | 4-8 |
| | | T42 ² | - | - | - | - | A | D | B | D | D | C | A | 55-61 | - | 34-38 | - | 10-15 | 4-12 |
| | 6061 | O ³¹ | X | X | - | X | A | A | D | A | A | A | B | - | 22 | 12 | 12 | 10-18 | 16-18 |
| | | T4 | X | - | - | - | A | C | C | A | A | A | A | 30 | - | 16 | - | 10-16 | - |
| | | T6 | X | - | - | - | A | C | C | A | A | A | A | 42 | - | 35 | - | 4-10 | - |
| | | T651 | - | - | - | X | A | C | C | A | A | A | A | 40-42 | - | 35 | - | - | 6-10 |
| | Bare 7075 | T42 ² | - | - | - | - | A | C | C | A | A | A | A | 30 | - | 14 | - | 10-16 | 16-18 |
| | | O ¹ | X | - | - | - | C | D | D | D | D | D | B | - | 40 | - | 21 | 10 | - |
| | | T6 | X | - | - | - | C | D | B | D | D | D | B | 76-77 | - | 65-66 | - | 7-8 | - |
| | Alclad 7075 | T651 | - | - | - | X | C | D | B | D | D | D | B | 67-77 | - | 53-66 | - | - | 2-8 |
| | | O ¹ | X | X | - | - | A | B | C | D | D | D | B | - | 36-39 | - | 20-21 | 9-10 | - |
| | | T6 | X | - | - | - | A | D | B | D | D | D | B | 68-75 | - | 58-64 | - | 5-8 | - |



Ratings A, B, C, D are relative in decreasing order of merit. weldability and brazability ratings are specifically defined as:

- A - Generally weldable by all commercial procedures and methods.
- B - Weldable with special technique or specific applications which justify preliminary trials or testing to develop welding procedure and weld performance.
- C - Limited weldability because of crack sensitivity or loss on resistance to corrosion, and all mechanical properties.
- D - No commonly used welding methods have so far been developed.

- 1 - These yield strengths not determined unless specifically requested.
- 2 - Although sheet and plate are not sold in this temper, material heat treated from any temper by the user should attain the mechanical properties applicable to this temper.
- 3 - Annealed (0 temper) material shall, upon heat treatment, be capable of developing the mechanical properties applicable to T 42 temper material.
- 4 - Annealed (0 temper) material shall, upon heat treatment and aging, be capable of developing the mechanical properties applicable to T 67 temper material.

APPROXIMATE MINIMUM RADII FOR 90° COLD BEND

Where range is shown, use smaller radius with extreme caution.

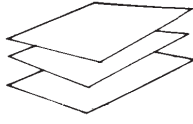
| ALLOY | TEMPER | RADII ¹ For Various Thicknesses Expresses in Terms of Thickness "t" | | | | | | | | |
|-------------|-------------------|--|-------------|-------------|-------------|-----------|-------------|---------------|---------------|--|
| | | 1/64 Inch | 1/32 Inch | 1/16 Inch | 1/8 Inch | 3/16 Inch | 1/4 Inch | 3/8 Inch | 1/2 Inch | |
| 1100 | -O | O | O | O | O | O | O | O | O | |
| | -H12 | O | O | O | O | O-1t | O-1t | O-1t | 1t-2t | |
| | -H14 | O | O | O | O | O-1t | O-1t | O-1t | 1t-3t | |
| | -H16 | O | O | O-1t | 1/2t-1-1/2t | 1t-2t | 1-1/2t-3t | 2-1/2t-3-1/2t | 3t-4t | |
| | -H18 | O-1t | 1/2-1-1/2t | 1t-2t | 1-1/2t-3t | 2t-4t | 2t-4t | 3t-5t | 3t-6t | |
| Alclad 2014 | -O | O | O | O | O | O-1t | O-1t | 1-1/2t-3t | 3t-5t | |
| | -T3 | 1t-2t | 1-1/2t-3t | 2t-4t | 3t-5t | 4t-6t | 4t-6t | 5t-7t | 5-1/2t-8t | |
| | -T4 | 1t-2t | 1-1/2t-3t | 2t-4t | 3t-5t | 4t-6t | 4t-6t | 5t-7t | 5-1/2t-8t | |
| | -T6 | 2t-4t | 3t-5t | 3t-5t | 4t-6t | 5t-7t | 6t-10t | 7t-10t | 8t-11t | |
| | -O ² | O | O | O | O | O-1t | O-1t | 1-1/2t-3t | 3t-5t | |
| 2024 | -T3 ²³ | 1-1/2t-3t | 2t-4t | 3t-5t | 4t-6t | 4t-6t | 5t-7t | 6t-8t | 6t-9t | |
| | -36 ² | 2t-4t | 3t-5t | 4t-6t | 5t-7t | 5t-7t | 6t-10t | 7t-10t | 8t-11t | |
| | -T42 | 1-1/2t-3t | 2t-4t | 3t-5t | 4t-6t | 4t-6t | 5t-7t | 6t-8t | 6t-9t | |
| | -T81 | 3-1/2t-5t | 4-1/2t-6t | 5t-7t | 6-1/2t-8t | 7t-9t | 8t-10t | 9t-11t | 9t-12t | |
| | -T86 | 4t-5-1/2t | 5t-7t | 6t-8t | 7t-10t | 8t-11t | 10t-13t | 10t-13t | 1t-2t | |
| 3003 | -O | O | O | O | O | O | O | O | 1t-2t | |
| | -H12 | O | O | O | O | O-1t | O-1t | O-1t | 1t-3t | |
| | -H14 | O | O | O | O | O-1t | O-1t | 1/2t-1-1/2t | 1-1/2t-3t | |
| | -H16 | O-1t | 01t | 1/2t-1-1/2t | 1t-2t | 1-1/2t-3t | 2t-4t | 1-1/2t-4t | 3t-5t | |
| | -H18 | 1/2t-1-1/2t | 1t-2t | 1-1/2t-3t | 2t-4t | 3t-5t | 4t-6t | 4t-7t | 5t-8t | |
| 5052 | -O | O | O | O | O | O-1t | O-1t | 1/2t-1-1/2t | 1t-2t | |
| | -H32 | O | O | O | O-1t | O-1t | 1/2t-1-1/2t | 1t-2t | 1-1/2t-2-1/2t | |
| | -H34 | O | O | O-1t | 1/2t-1-1/2t | 1t-2t | 1-1/2t-3t | 2t-3t | 2-1/2t-3-1/2t | |
| | -H36 | O-1t | 1/2t-1-1/2t | 1t-2t | 1-1/2t-3t | 2t-4t | 2t-4t | 2-1/2t-5t | 3t-5-1/2t | |
| | -H38 | 1/2t-1-1/2t | 1t-2t | 1-1/2t-3t | 2t-4t | 3t-5t | 4t-6t | 4t-7t | 5t-8t | |
| 6061 | -O | O | O | O | O | O-1t | O-1t | 1/2t-2t | 1t-1-1/2t | |
| | -T4 ² | O-1t | O-1t | 1/2t-1-1/2t | 1t-2t | 1-1/2t-3t | 2t-4t | 2-1/2t-4t | 3t-5t | |
| | -T6 ² | O-1t | 1/2t-1-1/2t | 1t-2t | 1-1/2t-3t | 2t-4t | 3t-4t | 3-1/2t-5-1/2t | 4t-6t | |
| | -O | O | O | O-1t | 1t-2t | 1-1/2t-3t | 2-1/2t-3t | 2-1/2t-4t | 3t-5t | |
| | -T6 ² | 2t-4t | 3t-5t | 4t-6t | 5t-7t | 5t-7t | 6t-10t | 7t-11t | 7t-12t | |

1. Minimum permissible radius over which sheet or plate may be bent varies with nature of forming operation, type of forming equipment, and design and conditions of tools. Minimum working radius for a given material or hardest alloy and temper for a given radius can be ascertained only by actual trial under contemplated conditions of fabrication. Where range is shown, use a smaller radius with extreme caution.

2. Alclad sheet can be bent over slightly smaller radii than the corresponding tempers of the uncoated alloy.

3. Immediately after quenching, this alloy can be formed over appreciable smaller radii. 4217661360076962

ALUMINUM – STAINLESS-GALVANIZED SHEET



ALUMINUM SHEET

Aluminum alloy sheet is sold in the thicknesses and sheet sizes shown in the table. Order by part number. No guarantee against scratches is possible due to the handling required to cut sheets to sizes shown.

CUTTING CHARGES: We can cut standard sheet sizes shown in the table to special sizes, but special order cutting charges will apply. Cutting Charges range from \$20 to \$50 or more depending on sizes desired and number of cuts. Special shapes are not cut, only straight edges. Request quote on Cutting Charges prior to order, as special cut pieces are not returnable.

ME

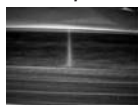
| Alloy & Temper | Surface Finish | Thickness (In.) | Wt./ Sq.Ft. (Lbs.) | Price Per Sheet | | | | | | | | | |
|----------------|----------------|-----------------|--------------------|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | | | | 4' x 12' | | 4' x 8' | | 4' x 6' | | 4' x 4' | | | |
| | | | | Part No. | Price | Part No. | Price | Part No. | Price | Part No. | Price | Part No. | Price |
| 2024T3 | Alclad | .016 | .230 | 03-27710 | . | 03-27720 | . | 03-27730 | . | 03-27740 | . | 03-27750 | . |
| | | .020 | .288 | 03-27810 | . | 03-27820 | . | 03-27830 | . | 03-27840 | . | 03-27850 | . |
| | | .025 | .360 | 03-27910 | . | 03-27920 | . | 03-27930 | . | 03-27940 | . | 03-27950 | . |
| | | .032 | .461 | 03-28010 | . | 03-28020 | . | 03-28030 | . | 03-28040 | . | 03-28050 | . |
| | | .040 | .576 | 03-28110 | . | 03-28120 | . | 03-28130 | . | 03-28140 | . | 03-28150 | . |
| | | .050 | .720 | 03-28210 | . | 03-28220 | . | 03-28230 | . | 03-28240 | . | 03-28250 | . |
| | | .063 | .907 | 03-28310 | . | 03-28320 | . | 03-28330 | . | 03-28340 | . | 03-28350 | . |
| | | .071 | 1.02 | 03-28410 | . | 03-28420 | . | 03-28430 | . | 03-28440 | . | 03-28450 | . |
| | | .080 | 1.15 | 03-28510 | . | 03-28520 | . | 03-28530 | . | 03-28540 | . | 03-28550 | . |
| | | .090 | 1.30 | 03-28610 | . | 03-28620 | . | 03-28630 | . | 03-28640 | . | 03-28650 | . |
| | | .125 | 1.80 | 03-28710 | . | 03-28720 | . | 03-28730 | . | 03-28740 | . | 03-28750 | . |
| | | .160 | - | 03-70010 | . | 03-70020 | . | 03-70030 | . | 03-70040 | . | 03-70050 | . |
| | | .190 | 2.74 | 03-28810 | . | 03-28820 | . | 03-28830 | . | 03-28840 | . | 03-28850 | . |
| | | .250 | 3.60 | 03-28910 | . | 03-28920 | . | 03-28930 | . | 03-28940 | . | 03-28950 | . |
| | 2024-0 | Alclad | .032 | .461 | 03-29010 | . | 03-29020 | . | 03-29030 | . | 03-29040 | . | 03-29050 |
| .040 | | | .576 | 03-29110 | . | 03-29120 | . | 03-29130 | . | 03-29140 | . | 03-29150 | . |
| .025 | | | .353 | 03-29210 | . | 03-29220 | . | 03-29230 | . | 03-29240 | . | 03-29250 | . |
| 6061T4 | Bare | .032 | .452 | 03-29310 | . | 03-29320 | . | 03-29330 | . | 03-29340 | . | 03-29350 | . |
| | | .040 | .564 | 03-29410 | . | 03-29420 | . | 03-29430 | . | 03-29440 | . | 03-29450 | . |
| | | .050 | .706 | 03-29510 | . | 03-29520 | . | 03-29530 | . | 03-29540 | . | 03-29550 | . |
| | | .063 | .889 | 03-29610 | . | 03-29620 | . | 03-29630 | . | 03-29640 | . | 03-29650 | . |
| | | .080 | 1.13 | 03-29710 | . | 03-29720 | . | 03-29730 | . | 03-29740 | . | 03-29750 | . |
| | | .125 | 1.76 | 03-29810 | . | 03-29820 | . | 03-29830 | . | 03-29840 | . | 03-29850 | . |
| | | .190 | - | 03-10010 | . | 03-10020 | . | 03-10030 | . | 03-10040 | . | 03-10050 | . |
| 6061T6 | Bare | .016 | .228 | 03-08910 | . | 03-08920 | . | 03-08930 | . | 03-08940 | . | 03-08950 | . |
| | | .020 | .285 | 03-09910 | . | 03-09920 | . | 03-09930 | . | 03-09940 | . | 03-09950 | . |
| | | .025 | .353 | 03-29910 | . | 03-29920 | . | 03-29930 | . | 03-29940 | . | 03-29950 | . |
| | | .032 | .452 | 03-30010 | . | 03-30020 | . | 03-30030 | . | 03-30040 | . | 03-30050 | . |
| | | .040 | .570 | 03-31110 | . | 03-31120 | . | 03-31130 | . | 03-31140 | . | 03-31150 | . |
| | | .050 | .713 | 03-31210 | . | 03-31220 | . | 03-31230 | . | 03-31240 | . | 03-31250 | . |
| | | .063 | .889 | 03-30110 | . | 03-30120 | . | 03-30130 | . | 03-30140 | . | 03-30150 | . |
| | | .090 | 1.27 | 03-30210 | . | 03-30220 | . | 03-30230 | . | 03-30240 | . | 03-30250 | . |
| | | .125 | 1.76 | 03-30310 | . | 03-30320 | . | 03-30330 | . | 03-30340 | . | 03-30350 | . |
| | | .190 | - | 03-30410 | . | 03-30420 | . | 03-30430 | . | 03-30440 | . | 03-30450 | . |
| | | .040 | .564 | 03-30510 | . | 03-30520 | . | 03-30530 | . | 03-30540 | . | 03-30550 | . |
| | | .063 | .889 | 03-30610 | . | 03-30620 | . | 03-30630 | . | 03-30640 | . | 03-30650 | . |
| .080 | 1.13 | 03-30710 | . | 03-30720 | . | 03-30730 | . | 03-30740 | . | 03-30750 | . | | |
| 6061-0 | Bare | .025 | .364 | 03-60010 | . | 03-60020 | . | 03-60030 | . | 03-60040 | . | 03-60050 | . |
| | | .032 | .466 | 03-61010 | . | 03-61020 | . | 03-61030 | . | 03-61040 | . | 03-61050 | . |
| | | .040 | .582 | 03-62010 | . | 03-62020 | . | 03-62030 | . | 03-62040 | . | 03-62050 | . |
| | | .050 | .727 | 03-63010 | . | 03-63020 | . | 03-63030 | . | 03-63040 | . | 03-63050 | . |
| | | .063 | .916 | 03-64010 | . | 03-64020 | . | 03-64030 | . | 03-64040 | . | 03-64050 | . |
| 7075T6 | Alclad | .125 | 1.82 | 03-65010 | . | 03-65020 | . | 03-65030 | . | 03-65040 | . | 03-65050 | . |
| | | .025 | .364 | 03-66010 | . | 03-66020 | . | 03-66030 | . | 03-66040 | . | 03-66050 | . |
| | | .032 | .466 | S10 | . | 03-67020 | . | 03-67030 | . | 03-67040 | . | 03-67050 | . |
| | | .040 | .582 | 03-68010 | . | 03-68020 | . | 03-68030 | . | 03-68040 | . | 03-68050 | . |
| 7075-0 | Alclad | .063 | .916 | 03-69010 | . | 03-69020 | . | 03-69030 | . | 03-69040 | . | 03-69050 | . |

For 2'x2' piece of aluminum sheet, take 2'x4' price ÷ 2, and then add 15%. For 2'x2' piece, change last two digits of P/N to "60". Thicknesses of .016, .020 and .025 can be rolled and boxed for UPS shipment with insurance coverage, but we cannot guarantee rolled sheets will lay flat without creasing when unpacked. Full sheets of heavier gauges or cut sheets exceeding 108" length plus girth (once down and once around) must be shipped by truck. Maximum sheet size for UPS shipment is 2' x 4'. **QUANTITY DISCOUNT SCHEDULE:** 10% on 6-10 Full Sheets; 15% on 11-15 Full Sheets. May be assorted thicknesses and alloys. Write for quotation on larger orders. Heavy gauge 2024T4 aluminum plate available in .375, .500 and .625 thickness. Indicate sheet size required.

3003H-14 SOFT ALUMINUM SHEET

| Thick. | P/N # | 4' x 12' | P/N # | 4' x 8' | P/N # | 4' x 6' | P/N # | 4' x 4' |
|--------|----------|----------|----------|---------|----------|---------|----------|---------|
| .020 | 03-31410 | ** | 03-31420 | . | 03-31430 | . | 03-31440 | . |
| .025 | 03-32410 | . | 03-32420 | . | 03-32430 | . | 03-32440 | . |
| .032 | 03-33410 | . | 03-33420 | . | 03-33430 | . | 03-33440 | . |
| .040 | 03-34410 | . | 03-34420 | . | 03-34430 | . | 03-34440 | . |
| .050 | 03-34510 | . | 03-34520 | . | 03-34530 | . | 03-34540 | . |
| .063 | 03-34610 | . | 03-34620 | . | 03-34630 | . | 03-34640 | . |

** Length of full sheet of .025 thickness is 10 ft.
For 2'x4' pcs. of 3003H-14 use "45" as last 2 digits of P/N (Ex: 03-34645)



5052H-32 ALUMINUM SHEET FOR FUEL TANKS

5052H32 Aluminum alloy sheets for fabrication of fuel tanks. Available in full sheets (48"x144") & 1/2 sheets (48"x72") only, in .040 & .050 thicknesses. May be combined with other aluminum sheets for discount. See shipping specs above.

| | | | |
|----------------|-----------------|--------------|-------|
| .032 Thickness | Full Sheet..... | P/N 03-30810 | ..... |
| | Half Sheet..... | P/N 03-30860 | ..... |
| .040 Thickness | Full Sheet..... | P/N 03-30900 | ..... |
| | Half Sheet..... | P/N 03-30950 | ..... |
| .050 Thickness | Full Sheet..... | P/N 03-31000 | ..... |
| | Half Sheet..... | P/N 03-31050 | ..... |



016 ALUMINUM LEADING EDGE 2024T3

12" Wide X 12 ft. (rolled for mailing). Sold in 12 ft. lengths only.
P/N 03-30800 Ea.
18" Wide x 12 ft. (rolled for mailing). Sold in 12 ft. lengths only.
P/N 03-30850 Ea.

Other widths available at proportionate cost plus shearing charge.



STAINLESS STEEL & GALVANIZED FIREWALL SHEET

| Material (36" Width) | Thickness (In.) | Weight/ Lin.Ft.(Lbs) | Part No. | Price/ Lin.Ft. |
|--------------------------|-----------------|----------------------|----------|----------------|
| 301 Stainless, 1/2 Hard | .016 | 2.016 | 03-31200 | . |
| 304 Stainless | .018 | 2.173 | 03-20010 | . |
| 302/304 Stainless, Ann.* | .035 | 4.38 | 03-31300 | . |
| Galvanized Sheet, 26 Ga. | .022 | 2.718 | 03-31400 | . |

301 furnished in 36" full sheet width only. Galvanized & 304-302/304 sheet is 48" wide. Cannot be rolled for UPS shipment. * 2B Finish To Order: Complete P/N of above Stainless or Galvanized sheet with the lineal feet you wish to order. A piece of stainless sheet .016 thick 36" wide x 6 ft. is P/N 03-31200-6. -6 specifies 6 lineal feet.

ALUMINUM TUBING



ROUND DRAWN ALUMINUM TUBING 2024T3

| O.D. (In.) | I.D. (In.) | Wall Thickness | Wt./Ft. (Lb.) | Part No. | Price Per Ft. |
|------------|------------|----------------|---------------|----------|---------------|
| 1/4 | .180 | .035 | .2081 | 03-31600 | . |
| 5/16 | .243 | .035 | .0366 | 03-31700 | . |
| | .215 | .049 | .0487 | 03-31800 | . |
| 3/8 | .305 | .035 | .0449 | 03-32000 | . |
| | .277 | .049 | .0602 | 03-32100 | . |
| | .245 | .065 | .0755 | 03-32200 | . |
| 1/2 | .430 | .035 | .0612 | 03-32500 | . |
| | .402 | .049 | .0829 | 03-32600 | . |
| | .384 | .058 | .0970 | 03-32700 | . |
| | .370 | .065 | .1061 | 03-32800 | . |
| 5/8 | .555 | .035 | .0775 | 03-32900 | . |
| | .527 | .049 | .1060 | 03-33000 | . |
| | .509 | .058 | .1234 | 03-33100 | . |
| 3/4 | .680 | .035 | .0938 | 03-33300 | . |
| | .652 | .049 | .1288 | 03-33400 | . |
| 7/8 | .620 | .065 | .1670 | 03-33600 | . |
| | .805 | .035 | .1423 | 03-33650 | . |
| | .777 | .049 | .1530 | 03-33700 | . |
| | .759 | .058 | .1777 | 03-33800 | . |
| 1 | .745 | .065 | .1979 | 03-33900 | . |
| | .635 | .120 | .3398 | 03-34000 | . |
| | .930 | .035 | .1250 | 03-34100 | . |
| | .902 | .049 | .1754 | 03-34200 | . |
| 1-1/4 | .884 | .058 | .2028 | 03-34250 | . |
| | .870 | .065 | .2295 | 03-34400 | . |
| 1-1/2 | .834 | .083 | .2866 | 03-34500 | . |
| | 1.180 | .035 | .1601 | 03-34600 | . |
| 1-3/8 | 1.152 | .049 | .2213 | 03-34700 | . |
| 1-1/2 | 1.180 | .065 | .3000 | 03-00045 | . |
| 1-3/8 | 1.277 | .049 | .2448 | 03-34800 | . |
| 1-1/2 | 1.402 | .049 | .2683 | 03-34900 | . |
| 1-3/4 | 1.370 | .065 | .3519 | 03-35000 | . |
| 1-3/4 | 1.250 | .250 | 1.428 | 03-35075 | . |
| 2 | 1.870 | .065 | .4743 | 03-35200 | . |



ROUND ALUMINUM TUBING 6061-0

| O.D. (In.) | I.D. (In.) | Wall Thickness | Wt./Ft. (Lb.) | Part No. | Price Per Ft. |
|------------|------------|----------------|---------------|----------|---------------|
| 1/2 | .430 | .035 | .0612 | 03-38500 | . |
| 3/4 | .680 | .035 | .0920 | 03-38600 | . |
| 1 | .930 | .035 | .1250 | 03-38700 | . |
| 1-1/4 | 1.180 | .035 | .1601 | 03-38800 | . |

Sold in full 6-ft. or 12-ft. lengths only. No charge for cutting to 8 ft. or less for UPS shipment.



6061T6 SQUARE ALUMINUM TUBING

| Size (In.) | Wall Thickness | Wt./Ft. (Lb.) | Part No. | Price Per Ft. |
|------------|----------------|---------------|----------|---------------|
| 1/2x1/2 | .058 | .156 | 03-00008 | . |
| 3/4x3/4 | .049 | .217 | 03-00009 | . |
| 1 X 1 | .065 | .300 | 03-38900 | . |
| 2 X 2 | .125 | 1.120 | 03-00141 | . |



5052-0 ALUMINUM TUBING

Rigid 5052-0 aluminum alloy tubing is used for low and medium pressure hydraulic systems, fuel lines and oil lines. This tubing will withstand a higher pressure than 3003-0 tubing.

| O.D. (In.) | I.D. (In.) | Thickness | Wt./Ft. (Lb.) | Part No. | Price Per Ft. |
|------------|------------|-----------|---------------|----------|---------------|
| 1/8 | .069 | .035 | .0101 | 03-39100 | . |
| 3/16 | .132 | .035 | .0168 | 03-39200 | . |
| | .152 | .049 | .0371 | 03-39250 | . |
| 1/4 | .180 | .035 | .0281 | 03-39300 | . |
| | .242 | .035 | .0360 | 03-39400 | . |
| 3/8 | .305 | .035 | .0449 | 03-39500 | . |
| | .277 | .049 | .0602 | 03-39550 | . |
| 1/2 | .436 | .035 | .0612 | 03-39600 | . |
| | .402 | .049 | .0829 | 03-39650 | . |
| 5/8 | .555 | .035 | .0760 | 03-39700 | . |
| | .527 | .049 | .1060 | 03-39750 | . |
| 3/4 | .680 | .035 | .0938 | 03-39800 | . |
| | .652 | .049 | .1288 | 03-39850 | . |
| 1 | .930 | .035 | .1256 | 03-39900 | . |
| | .902 | .049 | .1754 | 03-39950 | . |

Sold in full 6-ft. or 12-ft. lengths only. No charge for cutting to 8 ft. or less for UPS shipment. Unlisted sizes of aluminum tubing available in full 12' lengths. No charge for cutting to 8' or less for UPS. Longer lengths shipped via truck. Ordering tubing/bar by the foot. Add a dash number after part number to indicate length of tubing required. Ex: 3 ft required add -3, 03-00100-3.

ROUND ALUMINUM TUBING 6061T6

| O.D. (In.) | I.D. (In.) | Wall Thickness | Wt./Ft. (Lb.) | Part No. | Price Per Ft. |
|------------|------------|----------------|---------------|----------|---------------|
| 1/4 | .180 | .035 | .0281 | 03-35300 | . |
| | .152 | .049 | .036 | 03-00014 | . |
| 3/16 | .180 | .035 | ---- | 03-00012 | . |
| 5/16 | .215 | .049 | .0423 | 03-35350 | . |
| | .197 | .058 | .0561 | 03-35400 | . |
| | .305 | .035 | .0449 | 03-35500 | . |
| 3/8 | .259 | .058 | .0694 | 03-35600 | . |
| | .245 | .065 | .0755 | 03-35700 | . |
| | .209 | .083 | .0895 | 03-35750 | . |
| 7/16 | .308 | .065 | .090 | 03-35775 | . |
| | .444 | .028 | .0496 | 03-35795 | . |
| 1/2 | .430 | .035 | .0612 | 03-35800 | . |
| | .402 | .049 | .0816 | 03-35850 | . |
| | .384 | .058 | .0962 | 03-35900 | . |
| | .370 | .065 | .1040 | 03-35950 | . |
| 5/8 | .260 | .120 | .168 | 03-35975 | . |
| | .555 | .035 | .0775 | 03-36000 | . |
| | .527 | .049 | .1060 | 03-36010 | . |
| 3/4 | .509 | .058 | .1227 | 03-36050 | . |
| | .495 | .065 | .1367 | 03-36100 | . |
| | .680 | .035 | .093 | 03-36150 | . |
| 7/8 | .652 | .049 | .1288 | 03-36200 | . |
| | .634 | .058 | .1506 | 03-36300 | . |
| | .620 | .065 | .164 | 03-36350 | . |
| | .805 | .035 | .109 | 03-36375 | . |
| 1 | .777 | .049 | .150 | 03-36380 | . |
| | .759 | .058 | .1777 | 03-36400 | . |
| | .745 | .065 | .1983 | 03-36450 | . |
| 1-1/8 | .635 | .120 | .3350 | 03-36500 | . |
| | .930 | .035 | .1275 | 03-36600 | . |
| | .902 | .049 | .1754 | 03-36610 | . |
| | .884 | .058 | .2060 | 03-36700 | . |
| | .870 | .065 | .2295 | 03-36800 | . |
| 1-1/4 | .830 | .083 | .281 | 03-36850 | . |
| | .810 | .095 | .3244 | 03-36900 | . |
| 1-1/2 | .750 | .125 | .404 | 03-36950 | . |
| | .500 | .250 | .693 | 03-36975 | . |
| 1-3/8 | 1.027 | .049 | .185 | 03-36980 | . |
| | 1.009 | .058 | .2321 | 03-37000 | . |
| | .875 | .125 | .4712 | 03-37100 | . |
| | 1.180 | .035 | .1601 | 03-37200 | . |
| | 1.152 | .049 | .2213 | 03-37210 | . |
| 1-1/2 | 1.134 | .058 | .2601 | 03-37300 | . |
| | 1.120 | .065 | .2907 | 03-37400 | . |
| | 1.010 | .120 | .510 | 03-37450 | . |
| 1-3/4 | 1.259 | .058 | .2865 | 03-37500 | . |
| | 1.430 | .035 | .1928 | 03-37550 | . |
| 1-1/2 | 1.402 | .049 | .2683 | 03-37610 | . |
| | 1.384 | .058 | .3137 | 03-37710 | . |
| | 1.370 | .065 | .3519 | 03-37800 | . |
| | 1.260 | .125 | .635 | 03-37850 | . |
| 1-5/8 | 1.509 | .058 | .3409 | 03-37900 | . |
| | 1.680 | .035 | .2264 | 03-37910 | . |
| 1-3/4 | 1.652 | .049 | .3142 | 03-37925 | . |
| | 1.634 | .058 | .3703 | 03-37950 | . |
| | 1.584 | .083 | .5202 | 03-37975 | . |
| 1-7/8 | 1.759 | .058 | .3954 | 03-38000 | . |
| | 1.902 | .049 | .3601 | 03-38100 | . |
| | 1.884 | .058 | .4225 | 03-38200 | . |
| 2 | 1.870 | .065 | .4743 | 03-38300 | . |
| | 2.152 | .049 | .406 | 03-38307 | . |
| 2-1/4 | 2.120 | .065 | .5328 | 03-38308 | . |
| | 1.959 | .083 | .824 | 03-38309 | . |
| | 2.000 | .125 | .999 | 03-38310 | . |
| 2-1/2 | 2.430 | .035 | .3254 | 03-38315 | . |
| | 2.402 | .049 | .444 | 03-38318 | . |
| | 2.370 | .065 | .5803 | 03-38320 | . |
| 3 | 2.930 | .035 | .3891 | 03-38330 | . |
| | 2.870 | .065 | .7140 | 03-38340 | . |
| 4 | 3.930 | .035 | .5205 | 03-38350 | . |
| | 3.902 | .049 | .7153 | 03-38360 | . |

3003-0 VERSATUBE

Soft aluminum tubing for instrument air and vacuum lines, fuel and oil lines, and primer lines.



*Safety factor of 2
20% discount for full 50' coils of Versatube

| O.D. (In.) | Wall Thickness | Max. Working Pressure* (PSI) | Part No. | Price Per Ft. |
|------------|----------------|------------------------------|----------|---------------|
| 1/8 | .025 | 1820 | 03-40200 | . |
| 3/16 | .028 | 880 | 03-40300 | . |
| 1/4 | .032 | 795 | 03-40400 | . |
| 5/16 | .035 | 630 | 03-40500 | . |
| 3/8 | .035 | 520 | 03-40600 | . |
| 1/2 | .035 | 390 | 03-40700 | . |
| 5/8 | .035 | 305 | 03-40800 | . |

ME

ALUMINUM ROD – BAR – ANGLE



ROUND ALUMINUM ROD 2024T3/2024T4

| Dia. (In.) | Wt./Ft. (Lb.) | Part No. | Price/Ft |
|------------|---------------|----------|----------|
| 1/8 | .015 | 03-41300 | . |
| 3/16 | .033 | 03-41400 | . |
| 1/4 | .059 | 03-41500 | . |
| 5/16 | .092 | 03-41600 | . |
| 3/8 | .132 | 03-41700 | . |
| 7/16 | .1822 | 03-41750 | . |
| 1/2 | .235 | 03-41800 | . |
| 5/8 | .368 | 03-41900 | . |
| 3/4 | .529 | 03-42000 | . |
| 7/8 | .721 | 03-42100 | . |
| 1 | .941 | 03-42200 | . |
| 1-1/8 | 1.205 | 03-42250 | . |
| 1-1/4 | 1.47 | 03-42300 | . |
| 1-3/8 | 1.800 | 03-42350 | . |
| 1-1/2 | 2.12 | 03-42400 | . |
| 2 | 3.76 | 03-42500 | . |
| 2-1/2 | 5.88 | 03-42600 | . |

No charge for cutting to 8 ft. or less for UPS shipment.
Over 8 ft. shipped via truck. Special sizes available (12 foot minimum)
If ordering only T3 or T4, please call 877-477-7823

ME



ALUMINUM SQUARE & RECTANGLE BAR 2024T3/2024T4

| Size (In.) | Wt./Ft. (Lb.) | Part No. | Price/Ft. |
|--------------|---------------|----------|-----------|
| 1/8 x 1 | .150 | 03-42700 | . |
| 1/8 x 1-1/4 | .187 | 03-42750 | . |
| 1/8 x 1-1/2 | .225 | 03-42800 | . |
| 1/8 x 2 | .300 | 03-42900 | . |
| 3/16 x 1/2 | .112 | 03-43000 | . |
| 3/16 x 3/4 | .169 | 03-43100 | . |
| 3/16 x 1 | .2273 | 03-43150 | . |
| 3/16 x 1-1/4 | .281 | 03-43200 | . |
| 3/16 x 1-1/2 | .3420 | 03-43250 | . |
| 3/16 x 2 | .450 | 03-43300 | . |
| 1/4 x 1 | .300 | 03-43400 | . |
| 1/4 x 1-1/4 | .375 | 03-43500 | . |
| 1/4 x 1-1/2 | .450 | 03-43600 | . |
| 1/4 x 2 | .599 | 03-43700 | . |
| 1/4 x 3 | .900 | 03-43800 | . |
| 1/4 x 4 | 1.99 | 03-43850 | . |
| 3/8 x 1 | .4545 | 03-43875 | . |
| 3/8 x 1-1/4 | .562 | 03-43900 | . |
| 3/8 x 1-1/2 | .6818 | 03-43950 | . |
| 3/8 x 2 | .674 | 03-44000 | . |
| 3/8 x 3 | 1.35 | 03-44100 | . |
| 1/2 x 1/2 | .3030 | 03-44250 | . |
| 1/2 x 5/8 | .375 | 03-44300 | . |
| 1/2 x 1 | .599 | 03-44400 | . |
| 1/2 x 1-1/4 | .7575 | 03-44450 | . |
| 1/2 x 2 | 1.20 | 03-44500 | . |
| 1/2 x 2-1/2 | 1.50 | 03-44600 | . |
| 5/8 x 5/8 | .468 | 03-44700 | . |
| 5/8 x 1 | .7575 | 03-44850 | . |
| 3/4 x 3/4 | .674 | 03-44900 | . |
| 3/4 x 1-1/2 | 1.35 | 03-45000 | . |
| 3/4 x 1-3/4 | 1.59 | 03-45550 | . |
| 3/4 x 2 | 1.80 | 03-45100 | . |
| 3/4 x 2-1/2 | 2.25 | 03-45200 | . |
| 1 x 1 | 1.20 | 03-45300 | . |
| 1 x 2 | 2.424 | 03-45450 | . |
| 1 x 2-1/2 | 3.030 | 03-45475 | . |
| 1/2 x 6 | -- | 03-56000 | . |

Unlisted sizes of aluminum rod and bar available in full 12 ft. lengths.
No charge for cutting to 8 ft. or less for UPS. Longer lengths shipped via truck.

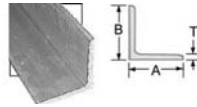
If ordering only T3 or T4, please call 877-477-7823
Ordering tubing/bar by the foot. Add a dash number after part no. to indicate length of tubing req.
Example: 3 ft required add -3, 03-00100-3.



ALUMINUM STREAMLINE STRUT TUBING

Aluminum streamline strut tubing, 6061T6, anodized. Used for struts in American Eaglet sailplane. Major axis 2.697", minor axis 1.143", .049" wall. Available in 6 ft. lengths only.

P/N 03-40000



ALUMINUM ANGLE

Extruded aluminum angle is produced by forcing a heated aluminum billet through a die of the proper shape by means of a hydraulic press. Our 90° aluminum extrusions have fillet radius as illustrated.

| Type | Size (In.) "A" x "B" x "T" | Part No. | Wt. Per Ft. (Lb.) | Price Per Ft |
|--------|----------------------------|----------|-------------------|--------------|
| 2024T3 | 1/2 x 1/2 x 1/16 | 03-46800 | .070 | . |
| 2024T3 | 5/8 x 5/8 x 1/16 | 03-46900 | .095 | . |
| 2024T3 | 3/4 x 3/4 x 1/16 | 03-47000 | .109 | . |
| 2024T3 | 7/8 x 7/8 x 1/8 | 03-47100 | .238 | . |
| 2024T3 | 1 x 1 x 1/16 | 03-47200 | .154 | . |
| 2024T3 | 1 x 1 x 1/8 | 03-47300 | .282 | . |
| 2024T3 | 1 x 1-1/2 x 1/8 | 03-47400 | .354 | . |
| 2024T3 | 1-1/2 x 1-1/2 x 1/16 | 03-47500 | .229 | . |
| 2024T3 | 1-1/2 x 1-1/2 x 1/8 | 03-47600 | .432 | . |
| 2024T3 | 2 x 2 x 1/8 | 03-47625 | .581 | . |
| 2024T3 | 3-1/2 x 3-1/2 x 1/4 | 03-47675 | 2.050 | . |

| Type | Size (In.) "A" x "B" x "T" | Part No. | Wt. Per Ft. (Lb.) | Price Per Ft |
|--------|----------------------------|----------|-------------------|--------------|
| 6061T6 | 3/4 x 3/4 x 1/16 | 03-00185 | .106 | . |
| 6061T6 | 3/4 x 3/4 x 1/8 | 03-47900 | .200 | . |
| 6061T6 | 1 x 1 x 1/16 | 03-00187 | .150 | . |
| 6061T6 | 1 x 1 x 1/8 | 03-48000 | .270 | . |
| 6061T6 | 1 x 3 x 1/8 | 03-48050 | .581 | . |
| 6061T6 | 1-1/4 x 1-1/4 x 1/8 | 03-00189 | .350 | . |
| 6061T6 | 1-1/2 x 1-1/4 x 1/8 | 03-48075 | .390 | . |
| 6061T6 | 1-1/2 x 1-1/2 x 1/8 | 03-48100 | .430 | . |
| 6061T6 | 1-1/2 x 1-1/2 x 3/16 | 03-48200 | .625 | . |
| 6061T6 | 1-1/2 x 1-1/2 x 1/4 | 03-48250 | .831 | . |
| 6061T6 | 1-1/2 x 2 x 1/8 | 03-48300 | .506 | . |
| 6061T6 | 1-3/4 x 1-3/4 x 1/8 | 03-48350 | .490 | . |
| 6061T6 | 2 x 2 x 1/8 | 03-48400 | .470 | . |
| 6061T6 | 2 x 2 x 3/16 | 03-48450 | .850 | . |
| 6061T6 | 2 x 2 x 1/4 | 03-48500 | 1.110 | . |
| 6061T6 | 2 x 3 x 1/4 | 03-48550 | 1.400 | . |
| 6061T6 | 2 x 2-1/2 x 1/4 | 03-48600 | 1.250 | . |
| 6061T6 | 2-1/2 x 2-1/2 x 3/16 | 03-00007 | .970 | . |
| 6061T6 | 2-1/2 x 2-1/2 x 1/8 | 03-48650 | .720 | . |
| 6061T6 | 2-1/2 x 4 x 1/8 | 03-48675 | .960 | . |
| 6061T6 | 4 x 4 x 1/4 | 03-48680 | 2.28 | . |

Standard lengths: 2024-12' and 20', 6061-25', 6063-16' (no fillet). No charge for cutting to 8 ft. or less for UPS. Many unlisted sizes available. Request quotation.



ALUMINUM PRE-FORMED ANGLES

2024T3 Aluminum angles, formed from .063" sheet. Generous radius at bend. Used as supports in composite aircraft such as the VariEze.

1.5" x 1.5" x 12" Angle..... P/N 03-48700



ALUMINUM ROUND, SQUARE AND RECTANGLE BAR, 6061T6

| Size (In.) | Wt./Ft. (Lb.) | Part No. | Price/Ft. |
|-----------------|---------------|----------|-----------|
| 3/16 Dia. Round | .032 | 03-45500 | . |
| 1/4 | .058 | 03-45600 | . |
| 5/16 | .090 | 03-45700 | . |
| 3/8 | .130 | 03-45800 | . |
| 1/2 | .231 | 03-45900 | . |
| 5/8 | .359 | 03-45920 | . |
| 3/4 | .519 | 03-46000 | . |
| 7/8 | .787 | 03-46010 | . |
| 1 | .923 | 03-46100 | . |
| 1-1/4 | 1.436 | 03-45940 | . |
| 1-1/2 | 2.068 | 03-45960 | . |
| 1-5/8 | 2.44 | 03-46200 | . |
| 1/4 x 1 Rect. | .294 | 03-46300 | . |
| 3/4 x 3/4 Sq. | .660 | 03-46400 | . |
| 3/16" x 1-1/4" | .275 | 03-46250 | . |
| 1/4" x 1-1/2" | .441 | 03-46350 | . |
| 1/4" x 2" | .675 | 03-00005 | . |
| 1/4" x 3" | .881 | 03-46360 | . |
| 1/2" x 3/4" | .441 | 03-46370 | . |
| 1/2" x 1" | .587 | 03-46375 | . |
| 1/2" x 1-1/4" | .734 | 03-46380 | . |
| 1/2" x 2" | 1.170 | 03-46390 | . |
| 1" x 1" | 1.170 | 03-46450 | . |
| 1" x 1-1/4" | 1.270 | 03-00006 | . |

ALUMINUM HINGE – STRINGERS

PIANO HINGE

MS20257P (supercedes AN257) hinge consists of two aluminum half hinges which mate and are held together by a hinge pin. Anodized finish. MS20257C is similar to MS20257P except made in stainless steel.



MS20001P aluminum hinge is extruded. The closed hinge loops cannot be pulled apart. Furnished with hinge pin. Anodized finish.

| Part No.* | Open Width | Thickness | Price/Length | |
|-----------|------------|-----------|--------------|--------|
| | | | 3 Ft.* | 6 Ft.* |
| MS20257P1 | 3/4" | .032" | . | . |
| MS20257P2 | 1-1/16" | .040" | . | . |
| MS20257P3 | 1-1/4" | .040" | . | . |
| MS20257P4 | 1-1/2" | .040" | . | . |
| MS20257P5 | 2" | .051" | . | . |
| MS20001P3 | 1-1/4" | .040" | . | . |
| MS20001P4 | 1-1/2" | .040" | . | . |
| MS20001P5 | 1-3/4" | .051" | . | . |
| MS20001P6 | 2" | .051" | . | . |
| MS20257C1 | 3/4" | .031" | . | . |
| MS20257C2 | 1-1/16" | .037" | . | . |
| MS20257C3 | 1-1/4" | .050" | . | . |
| MS20257C4 | 1-1/2" | .062" | . | . |
| MS20257C5 | 2" | .062" | . | . |

* Add "-3" to part number for 3 ft. pc. and "-6" to part number for 6 ft. pc.
Example: MS20001P6-3 is 3 ft. pc. of MS20001P6 hinge.

HINGE PIN ONLY – Stainless Steel

089" Dia. x 6'P/N 03-49000



BARGAIN BAG OF ALUMINUM TUBING

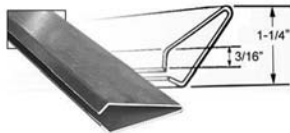
Assorted sizes of 2024 and 6061 aluminum tubing, angle rod and bar. Approximately 20 ft.

P/N 03-40100



6063T 52 U CHANNEL

3/4"x 3/4"x1/8"P/N 03-38950/ft.
 1"x1"x1/8"P/N 03-39050/ft.
 1-1/4"x1-1/4"x1/8"P/N 03-39150/ft.



TRAILING EDGE

Fabricated of .025 aluminum 3003H14 to size illustrated. Wt.12oz. per 10ft. length. Shipped via truck. **No charge for cutting to 8 ft. or less for UPS shipment.**

10 Ft. Length.....P/N 03-48900

Less 20% on 12 or more lengths. Please add \$2.00 carton charge for trailing edge - this box insures safe UPS shipment.

RECTANGULAR ALUMINUM STRINGERS

Rectangular stringers, 5/8" x 5/16" x .032" 3003H14 aluminum. Wt. 11 oz./12ft. length. Shipped via truck. **No charge for cutting to 8ft. or less for UPS shipment.**

12 Ft. Length.....P/N 03-48800

"HAT" SECTION ALUMINUM STRINGERS

Fabricated from .020 2024T3 aluminum. Wt. 5 oz. per 8-ft. length. May be spliced to form longer stringers.

8-Ft. Length.....P/N 03-46500

Less 10% on orders for 12 or more.

WELDING ROD FOR ALUMINUM

ER4043 – A versatile alloy well suited for welding 6061T-6, 5005, and 6063. Extremely ductile. 1/16" dia.....P/N 03-27520/lb.
 3/32" dia.....P/N 03-27525/lb.

ER4145 – Welding alloy recommended for use with 2024T3. A high strength alloy. 1/16" dia.....P/N 03-27510/lb.
 3/32" dia.....P/N 03-27515/lb.

ER5356 – Combination of strength and ductility for welding 5083, 5086, and 7000 series. Deposit can be anodized after welding. 1/16" dia.....P/N 03-27530/lb.
 3/32" dia.....P/N 03-27535/lb.

UTP4 – Pure aluminum for 1100 grade. 1/16" dia.....P/N 03-27540/lb.

ER347 – Popular aircraft type, stabilized austenitic stainless alloy for welding 302 and 304 base materials. Excellent for welding Ti stabilized grades such as 321 with high strength and elongation. 1/16" dia.....P/N 03-27545/lb.
 3/32" dia.....P/N 03-27550/lb.

UTP A-65 – A multi alloy wire for a wide range of base materials including stainless steel, low alloy high strength steel and especially outstanding for dissimilar metals with over 120,000 psi tensile strength and 25% elongation. Machinable. 1/16" dia.....P/N 03-27555/lb.
 3/32" dia.....P/N 03-27560/lb.

BRAZING ALLOYS

UTP 306M – Cadmium free, low temperature silver brazing alloy for high strength joints on stainless or copper. Exceptional for thin gauge applications such as tubing. Flux coated for easy use. 1/16" dia.....P/N 03-27565/lb.

UTP 1M – High strength, machinable torch rod for steel, brass, bronze and other copper alloys. Easy to apply, high strength, and versatile all purpose brazing rod. 1/8" dia.....P/N 03-27570/lb.

MAINTENANCE

UTP 612 – An all position mild steel coated electrode for arc welding. Operates on AC or DC current and can be welded by even the most inexperienced welder. 72,000 psi tensile strength, moisture resistant and conveniently packaged in 10 lb containers.

3/32" dia.....P/N 03-27575/lb.
 1/16" dia.....P/N 03-27580/lb.

UTP Unial – Self fluxing aluminum torch rod that can be applied with even a butane torch. Low temperature, color matching and ideal for repairs to tubing. P/N 03-27585/lb.

For additional Welding Equipment see pages 658-660.

COPPER TUBING

Seamless copper tubing for primer, fuel and oil pressure lines.

| O.D. (In.) | Wall Thickness | Part No. | Price/Ft. |
|------------|----------------|----------|-----------|
| 1/8 | .030 | 03-40900 | . |
| 1/4 | .030 | 03-41000 | . |
| 5/16 | .032 | 03-41100 | . |
| 3/8 | .032 | 03-41200 | . |
| 1/2 | .032 | 03-41250 | . |

20% discount for full soft coils of 50 ft. of Copper Tubing.

COPPER BUS BAR

.125 X 1/2" wideP/N 03-40890/ft.

ROUND ALUMINUM-BRONZE BAR SPEC. ASTMB-150

Cold-drawn, annealed, 1-3/4" dia. Use this material for fabrication of bronze bushings to your specific requirements. P/N 03-21700...../in.

LEAD SHEET

Lead sheet per specification QQ-L-201, Grade B. 1/8" thick. Wt. 8 lbs./sq.ft.

P/N 03-31500..... /ft.

Half Sheet (24"x 36", 48 Lbs.)

P/N 03-31520.....

Full Sheet (36" x48", 96 Lbs.) P/N 03-31540.....

ME

1. Scribing and Breaking (up to 1/4" thickness)

Using a straight edge as a guide, place the point of the "Cutting Tool for Plexiglas acrylic sheet" at the edge of the material and, applying pressure, draw the cutting point the full width of the material (5 to 6 times for thicknesses from 0.100" to 0.187" and 7 to 10 times for 0.250"). The scribed line should be positioned face up over a 3/4" diameter wood dowel running the length of the intended break. To break, hold the sheet with one hand and apply downward pressure on the short side of the break with the other. The hands should be kept adjacent to one another and successively repositioned about 2" in back of the break as it progresses along the scribed line. The minimum cut-off width is about 1-1/2". Patterned Plexiglas cannot be scored or broken.

Follow edge finishing instructions in Section 4.

2. Cutting with Saws

Do not remove protective masking paper before cutting. If cutting unmasked sheet is unavoidable—apply masking tape on both sides of intended cut to reduce friction and gumming behind blade.

Curved shapes are easily cut with sabre, band and reciprocating jig saws. Sabre and reciprocating jig saw blades should have at least 14 teeth per inch. Straight cuts can be made with a sabre or hand jig saw by guiding the tool along a straight edge. Band saws should have at least 10 teeth per inch. Hold Plexiglas down firmly when cutting. Do not force feed. Follow edge finishing instructions in Section 4.

Circular saws are ideal for straight cutting. Use a steel cross-cut blade which is recommended for finish cuts on plywood, veneers, laminates, etc. The blade should have at least 6 teeth per inch. All the teeth should be of the same shape, height, and point to point distance. Set the blade height just a little above the thickness of the sheet to prevent chipping. Hold Plexiglas down firmly when cutting. Do not force feed. Follow edge finishing instructions in Section 4.

3. Drilling By Hand With Standard Twist Drills

Standard twist drills commonly used for metals can be used to drill Plexiglas if reasonable care is exercised. Back Plexiglas with wood, clamp or hold firmly, use a sharp drill, very slow speed, and minimum pressure.

Caution: *If too much speed is used, Plexiglas will tend to climb the drill. If too much pressure is used, chipping will occur on the back side of the hole. (See instructions for through fastening).*

4. Edge Finishing

Sawed edges and other tool marks should be removed by scraping the edge with a sharp knife, filing with a fine tooth file, and/or sanding with medium grit (60-80) paper. This will insure maximum breakage resistance of the Plexiglas part. To further improve the appearance of the surface or edge, follow the initial finishing with "wet or dry" (150-220) grit sand paper. For a transparent edge, follow this step with grits to 400 and buff with a clean muslin wheel dressed with a good grade of fine grit buffing compound. Finish up with a clean soft cotton flannel wheel.

5. Cementing

Capillary cementing with a solvent such as methylene chloride ("MDC") or ethylene dichloride ("EDC") or 1,1,2-trichloroethane is an easy method of joining two pieces of Plexiglas. Sand surfaces to be cemented, do not polish. Remove protective masking paper. Hold pieces together with strips of masking tape.

Apply solvent to the joint with a syringe, oil can with a very fine spout, eye dropper, or small paint brush. Let joint dry thoroughly. Caution: solvents may be toxic if inhaled for extended periods of time or if swallowed; many are also flammable. Use in a well ventilated area, keep away from children.

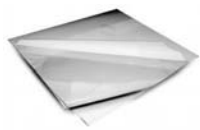
6. Through-Fastening of Plexiglas

Drill oversize holes (allow 1/16" oversize per foot of length of the Plexiglas to provide for expansion and contraction), following drilling instructions in Section 3. Holes should be located to provide at least 1/4" solid material from edge of hole to edge of sheet. Smoothing hole surface with a round file should provide maximum resistance to breakage. Bring screws up just snugly and back off 1/4 turn to provide freedom of movement for expansion or contraction of the Plexiglas.

7. Cleaning of Plexiglas

Wash Plexiglas with a mild soap and lukewarm water solution. Use a clean soft cloth or sponge and as much of the solution as possible. Rinse well. Dry by blotting with a damp cloth or chamois. A periodic waxing with a good grade of hard automobile paste wax (not a cleaner-wax combination) will fill in minor surface scratches and help maintain the lustre. Apply sparingly and buff lightly with clean cotton flannel or jersey. Sanding and buffing as described in #4 (Edge Finishing) will remove deeper scratches.

EVERYTHING IN PLASTICS



PLEXIGLAS

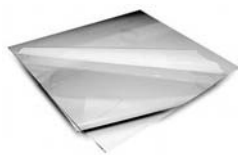
American made Plexiglas Grade C to Specification LP-391 is unshrunk. When heated to forming temperature of 220-250°F, it will shrink about 2.2% in length and width and will increase about 4% in thickness. When heated to a pliable state it can be drilled, sawed and machined. It has

excellent resistance to weathering. It is less than half as heavy as glass and has good impact resistance. .060" or .080" thickness is generally used for side windows and .125" for windshields. Both sides are paper covered for protection. Sheet size: 48"x96". Sold in 2'x2' increments only. Order by part number (see table).

| Thickness Inch | Weight Lb./Sq.Ft. | Part No.*** | Price Per Sq. Ft. |
|----------------|-------------------|-------------|-------------------|
| .060 Clear | .37 | 03-498— | |
| .080 Clear | .49 | 03-499— | |
| .125 Clear | .62 | 03-500— | |
| .125 Tinted* | .77 | 03-501— | |
| .125 Tinted** | .77 | 03-502— | |

* **Smoke tint** ** #2111 **Green tint**
 *** **Order by basic part number and add last two digits according to dimensions of piece, as follows: 2'x2' (4 Sq.Ft.) add "02"; 2'x4' (8 Sq.Ft.) add "04"; 4'x4' (16 Sq.Ft.) add "08"; 4'x8' (32 Sq.Ft.) add "10". Example: 2'x4' .080 Clear is P/N 03-49904.**

LEXAN



American made Kirex polycarbonate sheet (an equivalent to G.E. Lexan) is a very strong plastic which is guaranteed by manufacturer against breakage when used as a window for a 3 year period. It will scratch like Plexiglas, but will not break. Clear, masked both sides. Sheet size: 48"x96". Sold in 2'x2' increments only. Order by part number (see table)

| Thickness Inch | Weight Lb./Sq.Ft. | Part No.* | Price Per Sq. Ft. |
|----------------|-------------------|-----------|-------------------|
| .060 | .38 | 03-503— | |
| .080 | .50 | 03-504— | |
| .093 | .59 | 03-505— | |
| .125 | .78 | 03-506— | |

* **Order by basic part number and add last two digits according to dimensions of piece, as follows: 2'x2' (4 Sq.Ft.), add "02"; 2'x4' (8 Sq.Ft.) add "04"; 4'x4' (16 Sq.Ft.) add "08"; 4'x8' (32 Sq.Ft.) add "10". Example: 4'x4' of .093 is P/N 03-50508.**



CLEAR CELLULOSE ACETATE SHEET

May be used to make inspection rings, grommets and shapes which will adhere to fabric with dope or fabric cement. Sheet size: 20" x 50". Thickness: .030". P/N 03-50700 /Sheet

GRAPHLITE CARBON FIBER ROD



Prepreg tape has an inherent waviness which can reduce the strength and stiffness of a laminate. Graphlite rod eliminates fiber waviness and unlike tape, it can be placed along any curved surface and retain fiber alignment. Graphlite can be used in layers to form building blocks for stiffeners, spar caps, longerons and other axially loaded parts. Components made with Graphlite offer tension strength on the lower wing surface and compression

strength on the upper surface that are almost equal. In addition, a single layer of rods is as thick as 10 layers of tape, meaning fewer passes and less effort. Graphlite rods increase compression strength, reduce fabrication costs by 50%, can be laid on compound curves, and require no special storage. Available in two rod types: standard module (SM) which is 33-34 MSI and intermediate module which is 42 msi. Sold by the roll. Typical light aircraft requires minimum of 1000 ft. Graphlite rod.

| Rod Type | Rod Diameter | Tensile Strength | P/N | Price per roll |
|----------|--------------|------------------|----------|----------------|
| IM | 0.067 | 503 | 03-50706 | ./12 ft. |
| SM | 0.125 | 503 | 03-50707 | ./12 ft. |
| SM | 0.158 | 503 | 03-50708 | ./12 ft. |
| SM | 0.063 | 785 | 03-50710 | ./12 ft. |



3M™ WINDOW SEALANTS

3M STRIP CAULK - This black, nonhardening compound in 12" strips is the most satisfactory product for sealing windshields and windows. 61 strips per box, more than enough for an average, leakproof windshield installation.

P/N 08578 /Box

FOR OTHER 3M™ PRODUCTS SEE PAGES 345-352

SILASTIC RTV SEALANTS



Dow Corning "SILASTIC" - These 1-part RTV silicone rubber adhesive/sealants adhere to metals, glass, paint, ceramics, wood and most plastics. Form a tack-free skin in one hour & cure to a firm silicone rubber in 24 hrs.

#732 RTV (Clear), 4.7 Oz. Tube P/N 09-27800.....
 #732 RTV (White), 4.7 Oz. Tube P/N 09-27810.....
 #732 RTV (Black), 4.7 Oz. Tube P/N 09-27815.....
 #736 High temp. (to 500°F) Red RTV, 3oz.tube... P/N 09-27900.....

DOW CORNING RTV-3145 ADHESIVE / SEALANT



Sealing openings in modules and housings; adding mechanical stability to individual components; assembly of components on PWBs; sealing in and around wires and electrical leads; yoke assembly.

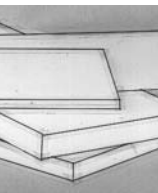
Clear P/N 09-02041
 Gray P/N 09-02042

NYLON



Nylon, a polyimide resin, is a light yet tough thermoplastic material. Its density is approximately .041 lb./cu.in. It is a tough, resilient material with a low coefficient of friction. Abrasion tests show that Nylon loses less material than do many metals, other plastics, and hard rubber. It can deform under load, then return to its original shape. Nylon retains its impact strength over a wide range of temperatures (-60° to 400°F). It has good resistance to most chemicals. It can be easily machined on most standard metal working machines, power hacksaws, band saws, or circular saws. It is desirable to use a saw with a coarse tooth blade.

NYLON PLATE



| Thickness (Inch) (Lbs.) | Wt. per Sq. Ft. | Part No. | Price/Sq. Ft.* |
|-------------------------|-----------------|----------|----------------|
| 1/16 | .39 | 03-51000 | . |
| 1/8 | .77 | 03-51100 | . |
| 1/4 | 1.54 | 03-51200 | . |
| 1/2 | 3.07 | 03-51300 | . |
| 3/4 | 4.61 | 03-51400 | . |
| 1 | 6.15 | 03-51500 | . |

*Sold in 6"x6" (1/4 sq. Ft.) increments only

NYLON ROUND ROD



Less 10% for 4 ft. lengths.
 Less 20% for full 8 ft. lengths.
 Furnish cutting instructions for UPS shipment.

| DIAMETER (IN.) | P/N | PRICE/ FT. |
|----------------|----------|------------|
| 1/8 | 03-51600 | . |
| 1/4 | 03-51700 | . |
| 1/2 | 03-51800 | . |
| 3/4 | 03-51900 | . |
| 1 | 03-52000 | . |
| 1-1/4 | 03-52100 | . |
| 1-1/2 | 03-52200 | . |
| 2 | 03-52300 | . |

ME

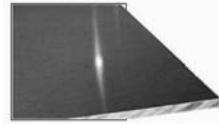
EVERYTHING IN PLASTICS

HIGH PRESSURE LAMINATED PHENOLIC

Commonly called "Micarta", a trademark of Westinghouse. Laminated sheets, tube and rods are produced in many grades, sizes and colors. These laminates combine a base material - canvas, linen, paper, glass cloth or Nylon cloth, with a resin- phenolic, melamine, epoxy or silicone, under high heat and pressure to produce a new material with specific characteristics. These characteristics vary with the grade and its use.

GRADE L (LINEN BASE) PHENOLIC SHEET

Used for precision machining and high strength applications. Sheet Size: 36" x 48". Sold in 6" x 6", 6" x 12", 12" x 12", etc. pieces only.



| Thickness (In.) | Wt. /Sq. Ft(Lbs.) | Part No. | Price. Per Sq. Ft. |
|-----------------|-------------------|----------|--------------------|
| 1/16 | .422 | 03-52400 | . |
| 1/8 | .844 | 03-52500 | . |
| 3/16 | 1.349 | 03-00111 | . |
| 1/4 | 1.853 | 03-52600 | . |
| 3/8 | 2.772 | 03-52700 | . |
| 1/2 | 3.685 | 03-52800 | . |
| 3/4 | 5.495 | 03-52900 | . |
| 1 | 7.302 | 03-53000 | . |

GRADE L (LINEN BASE) PHENOLIC ROD



Used to provide high-strength close-tolerance bolt holes in wooden spars. Cut rod to spar thickness, drill and ream for proper bolt fit. Drill hole in spar for slip fit of rod, then bond in spar with epoxy cement. Produced in 4 ft. lengths.

5/8" dia. P/N 03-53100 /In.
3/4" dia. P/N 03-53200 /In.

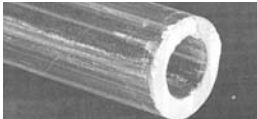
GRADE XXX (PAPER BASE) PHENOLIC TUBING

Other sizes and wall thicknesses available at comparable prices .



| O.D. (In.) | I.D. (In.) | Wall (In.) | Part No. | Price Per Ft. |
|------------|------------|------------|----------|---------------|
| 3/8 | 1/4 | 1/16 | 03-53300 | . |
| 1/2 | 3/8 | 1/16 | 03-53400 | . |
| 5/8 | 1/2 | 1/16 | 03-53500 | . |
| 3/4 | 5/8 | 1/16 | 03-53600 | . |
| 7/8 | 3/4 | 1/16 | 03-53700 | . |

CLEAR EXTRUDED ACRYLIC TUBING



| O.D. (In.) | I.D. (In.) | Wall (In.) | Part No. | Price Per Ft. |
|------------|------------|------------|----------|---------------|
| 3/8 | 1/8 | .125 | 03-53800 | . |
| 1/2 | 1/4 | .125 | 03-53900 | . |
| 5/8 | 3/8 | .125 | 03-54000 | . |

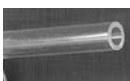
GLASS EPOXY ROD



G-10 Glass Epoxy Rod - 5/8" Dia.
P/N 03-50900 Ft.

Other sizes available in 4-ft. lengths.

CLEAR PVC PIPE



Clear, rigid Schedule 40 PVC pipe for sight gauges. Used in Quickie as fuel level gauge. Excellent resistance to gasoline. Nominal 1/4" pipe size (0.54" O.D., 0.33" I.D.) .
P/N 03-54100 Ft.

UNMASK

For easy removal of stubborn masking paper from plastic sheets. This worksaver also removes adhesive residue.

Quart P/N 03-55100
Gal. P/N 03-55105



PROTEX

Description: 20 mil latex impregnated paper with external vinyl coating for more abrasion resistance. **Application:** Heavy duty protection of acrylic windows, canopies, windshields and certain metal and painted surfaces where high abrasion resistance is required. Protex 20V is used to protect wood interiors of high quality business jets during manufacturing. P/N 09-02314.....

Description: 2 mil polyester film tinted light green. Capable of withstanding outdoor exposure **Application:** Window protection. Liner allows for die-cutting or hand-cutting masks to required size. Protects various plastic surfaces during installation, shipment and painting operations. Solvent and heat resistance properties same as PROTEX 8216-2. 48" Width Can be printed on by silk screen method.
P/N 09-02315.....

DELTRIN® ROD

Deltrin® is a thermoplastic acetal resin. The most important attributes of Deltrin® are high mechanical strength and rigidity, fatigue endurance and high resistance to moisture, gasoline and solvents. This product contains Deltrin® resin. Deltrin® is a registered trademark of E. I. du Pont de Nemours & Co. Color: Natural. Sold by the foot.



| Diameter | Part No. | Price / Ft. | Diameter | Part No. | Price/Ft. |
|----------|----------|-------------|----------|----------|-----------|
| 1/8" | 02-52018 | . | 3/4" | 02-52034 | . |
| 3/16" | 02-52316 | . | 7/8" | 02-52078 | . |
| 1/4" | 02-52014 | . | 1" | 02-52001 | . |
| 5/16" | 02-52516 | . | 1-1/8" | 02-52118 | . |
| 3/8" | 02-52038 | . | 1-1/4" | 02-52114 | . |
| 7/16" | 02-52716 | . | 1-3/8" | 02-52138 | . |
| 1/2" | 02-52012 | . | 1-1/2" | 02-52112 | . |
| 9/16" | 02-52916 | . | 1-3/4" | 02-52134 | . |
| 5/8" | 02-52058 | . | 2" | 02-52002 | . |



PLEXIGLAS CUTTING TOOL

Cut up to 1/4" thick Plexiglas by scribing and breaking with this cutting tool. Complete with instructions.
P/N 03-54200

ACRYLIC DRILL BITS



5/16" & 7/16" Acrylic Drill Bit.

5/16" P/N 12-01075.....
7/16" P/N 12-01076.....

PLEXIGLAS DRILLS

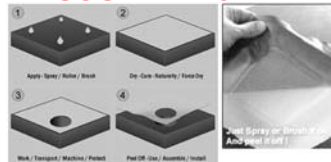


Specially ground point, 60° included tip angle, 0°rake angle, shoulder relieved, for drilling Plexiglas to prevent fractures, chipping or cracking. With instructions.

| Drill Size | Part No. | Price Ea. |
|------------|----------|-----------|
| 1/8" | 03-54300 | . |
| 5/32" | 03-54400 | . |
| 3/16" | 03-54500 | . |
| 1/4" | 03-54600 | . |

| Drill Size | Part No. | Price Ea. |
|------------|----------|-----------|
| 5/16" | 03-00114 | . |
| 3/8" | 03-54700 | . |
| 7/16" | 03-00115 | . |
| 1/2" | 03-00116 | . |

DISCOAT 4220 PLEXIGLASS PROTECTOR



General Chemical's Discoat 4220 is a CLEAR water resistant, water based peelable temporary protective coating for Aircraft windshields & windows which provides a long lasting durable protective layer that protects from scratches and oxidation. Used for protecting canopies and windshields during construction. Discoat 4220 air dries quickly, leaving a tough, yet flexible coating that is easily removed and requires no other additional step. 4220 represents the ultimate in water-based removable coating technology. It is stabilized against brittleness and is not softened or penetrated by most water-based compounds.

4220 is impregnated with transparent blue dye for easy visual inspection as well as identification and is non-staining and stable to 100 degrees Celsius. Approximate coverage: 35 sq. ft. per quart. May be applied by spray or brush. Minimum of 4 coats recommended for best results.

Discoat 4220 Plexiglass Protector QT P/N 03-00158.....
Discoat 4220 Plexiglass Protector GL..... P/N 03-00159.....

SPRAY LAT PLEXIGLAS PROTECTOR

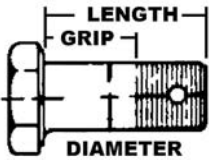


Sprayable, clear compound specially formulated as a strippable, protective coating for Plexiglas, flat and formed. Used for protecting canopies from scratches during construction. Coverage: Approx. 35 sq.ft. per quart. Caution: Spray Lat can be difficult to remove if left on for more than 1 year.

Spray Lat Plexiglas Protector - Quart 03-54900.....
Spray Lat Plexiglas Protector - Gallon 03-55000.....

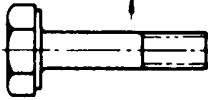
ME

AN BOLTS



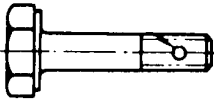
Hex head aircraft bolts are made of high-strength type 4037 or 8740 alloy steel (type 8740 is most commonly used). The bolts are threaded after heat treatment. Minimum tensile strength 125,000 PSI. Cadmium plated per specification QQ-P-416, Type II, Class 3. Available with shank drilled for cotter pin or undrilled for stop nut application, and with or without drilled head for safety wire. Specify bolts to have undrilled shank by adding letter "A" after dash number. For bolts with drilled head add letter "H" after AN number. See illustrated examples. The length of AN aircraft bolts is measured from under the head to the end of the shank. The "grip" is the unthreaded portion of the shank. See table for conversion of length and/or grip to proper AN callout.

**FOR UNDRILLED
ADD THE LETTER "A"
EXAMPLE:
AN6 - 10A**



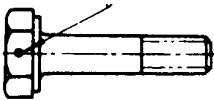
UNDRILLED

**FOR DRILLED SHANK NO
LETTER
EXAMPLE!
AN6 - 10**



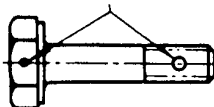
**SHANK ONLY
DRILLED**

**FOR DRILLED HEAD
ADD "H" AND "A"
EXAMPLE:
AN6H-10A**



**HEAD ONLY
DRILLED**

**FOR DRILLED HEAD AND
SHANK
ADD "H" ONLY
EXAMPLE:
AN6H-10**

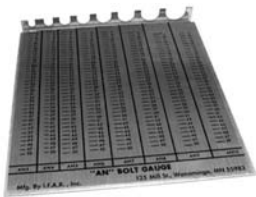


**BOTH HEAD AND
SHANK DRILLED**

| Bolts are sold "EACH" | | AN3 | | | | | AN4 | | | | |
|-----------------------|----------------|----------------------------|---------------|------------------------|---------------|---------------------|-----------------------------|---------------|-------------------------|---------------|---------------------|
| ALL BOLTS | | Cadmium Plated AN3 (10-32) | | Stainless AN3C (10-32) | | | Cadmium Plated AN4 (1/4-28) | | Stainless AN4C (1/4-28) | | |
| Dash No. | Nominal Length | Grip Length | Drilled Price | Undrilled "A" Price | Drilled Price | Undrilled "A" Price | Grip Price | Drilled Price | Undrilled "A" Price | Drilled Price | Undrilled "A" Price |
| -3 | 15/32 | 1/16 | . | . | . | . | 1/16 | . | . | . | . |
| -4 | 17/32 | 1/8 | . | . | . | . | 1/16 | . | . | . | . |
| -5 | 21/32 | 1/4 | . | . | . | . | 3/16 | . | . | . | . |
| -6 | 25/32 | 3/8 | . | . | . | . | 5/16 | . | . | . | . |
| -7 | 29/32 | 1/2 | . | . | . | . | 7/16 | . | . | . | . |
| -10 | 1-1/32 | 5/8 | . | . | . | . | 9/16 | . | . | . | . |
| -11 | 1-5/32 | 3/4 | . | . | . | . | 11/16 | . | . | . | . |
| -12 | 1-9/32 | 7/8 | . | . | . | . | 13/16 | . | . | . | . |
| -13 | 1-13/32 | 1 | . | . | . | . | 15/16 | . | . | . | . |
| -14 | 1-17/32 | 1-1/8 | . | . | . | . | 1-1/16 | . | . | . | . |
| -15 | 1-21/32 | 1-1/4 | . | . | . | . | 1-3/16 | . | . | . | . |
| -16 | 1-25/32 | 1-3/8 | . | . | . | . | 1-5/16 | . | . | . | . |
| -17 | 1-29/32 | 1-1/2 | . | . | . | . | 1-7/16 | . | . | . | . |
| -20 | 2-1/32 | 1-5/8 | . | . | . | . | 1-9/16 | . | . | . | . |
| -21 | 2-5/32 | 1-3/4 | . | . | . | . | 1-11/16 | . | . | . | . |
| -22 | 2-9/32 | 1-7/8 | . | . | . | . | 1-13/16 | . | . | . | . |
| -23 | 2-13/32 | 2 | . | . | . | . | 1-15/16 | . | . | . | . |
| -24 | 2-17/32 | 2-1/8 | . | . | . | . | 2-1/16 | . | . | . | . |
| -25 | 2-21/32 | 2-1/4 | . | . | . | . | 2-3/16 | . | . | . | . |
| -26 | 2-25/32 | 2-3/8 | . | . | . | . | 2-5/16 | . | . | . | . |
| -27 | 2-29/32 | 2-1/2 | . | . | . | . | 2-7/16 | . | . | . | . |
| -30 | 3-1/32 | 2-5/8 | . | . | . | . | 2-9/16 | . | . | . | . |
| -31 | 3-5/32 | 2-3/4 | . | . | . | . | 2-11/16 | . | . | . | . |
| -32 | 3-9/32 | 2-7/8 | . | . | . | . | 2-13/16 | . | . | . | . |
| -33 | 3-13/32 | 3 | . | . | . | . | 2-15/16 | . | . | . | . |
| -34 | 3-17/32 | 3-1/8 | . | . | . | . | 3-1/16 | . | . | . | . |
| -35 | 3-21/32 | 3-1/4 | . | . | . | . | 3-3/16 | . | . | . | . |
| -36 | 3-25/32 | 3-3/8 | . | . | . | . | 3-5/16 | . | . | . | . |
| -37 | 3-29/32 | 3-1/2 | . | . | . | . | 3-7/16 | . | . | . | . |
| -40 | 4-1/32 | 3-5/8 | . | . | . | . | 3-9/16 | . | . | . | . |
| -41 | 4-5/32 | 3-3/4 | . | . | . | . | 3-11/16 | . | . | . | . |
| -42 | 4-9/32 | 3-7/8 | . | . | . | . | 3-13/16 | . | . | . | . |
| -43 | 4-13/32 | 4 | . | . | . | . | 3-15/16 | . | . | . | . |
| -44 | 4-17/32 | 4-1/8 | . | . | . | . | 4-1/16 | . | . | . | . |
| -45 | 4-21/32 | 4-1/4 | . | . | . | . | 4-3/16 | . | . | . | . |
| -46 | 4-25/32 | 4-3/8 | . | . | . | . | 4-5/16 | . | . | . | . |
| -47 | 4-29/32 | 4-1/2 | . | . | . | . | 4-7/16 | . | . | . | . |
| -50 | 5-1/32 | 4-5/8 | . | . | . | . | 4-9/16 | . | . | . | . |
| -51 | 5-5/32 | 4-3/4 | . | . | . | . | 4-11/16 | . | . | . | . |
| -52 | 5-9/32 | 4-7/8 | . | . | . | . | 4-13/16 | . | . | . | . |
| -53 | 5-13/32 | 5 | . | . | . | . | 4-15/16 | . | . | . | . |
| -54 | 5-17/32 | 5-1/8 | . | . | . | . | 5-1/16 | . | . | . | . |
| -55 | 5-21/32 | 5-1/4 | . | . | . | . | 5-3/16 | . | . | . | . |
| -56 | 5-25/32 | 5-3/8 | . | . | . | . | 5-5/16 | . | . | . | . |
| -57 | 5-29/32 | 5-1/2 | . | . | . | . | 5-7/16 | . | . | . | . |
| -60 | 6-1/32 | 5-5/8 | . | . | . | . | 5-9/16 | . | . | . | . |

HA

AN BOLTS



AN BOLT GAUGE

Automatically sizes all AN bolts up to 5/8" diameter and 5 inches long.

P/N 04-05400.....

POCKET BOLT GAUGE

This new aluminum gauge measures just 3-3/4" x 5-7/8" to fit easily in a shirt pocket. Determines exact part numbers for AN 3 thru AN 8 diameter bolts thru 5" in length. P/N 04-05300.....



SAMPLE PART NUMBERS

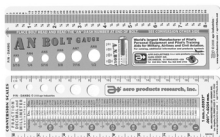
AN3-4 Cad-plated, drilled shank
 AN3-4A Cad-plated, undrilled
 AN3C-4 Stainless steel, drilled shank
 AN3C-4A Stainless steel, undrilled

AN BOLT KIT

CONTAINS: • AN6-16A (8 qty) • AN6-12A (2 qty) • AN4-15A (20 qty) • AN8-13A (8 qty) • AN6-10A (12 qty) • AN8-33A (24 qty) • AN7-33A (4 qty) • AN9-17 (4 qty)
 P/N 04-01727

APR AN BOLT GAUGE

AN bolt gauge deluxe heavy duty model measures diameter and length of AN bolts up to 8", 388 precision conversions. Fraction / decimal / millimeter equivalents, with 8" Inch and 20 cm metric rulers. 4 colors. Pocket size. PVC plastic 8-5/8" x 2-1/2" x .030" P/N 11-07726.....



HA

| Bolts are sold "EACH" | | | AN5 | | | | AN6 | | | | |
|-----------------------|----------------|-------------|------------------------------|---------------------|--------------------------|---------------------|-----------------------------|---------------|-------------------------|---------------|---------------------|
| ALL BOLTS | | | Cadmium Plated AN5 (5/16-24) | | Stainless AN5C (5/16-24) | | Cadmium Plated AN6 (3/8-24) | | Stainless AN6C (3/8-24) | | |
| Dash No. | Nominal Length | Grip Length | Drilled Price | Undrilled "A" Price | Drilled Price | Undrilled "A" Price | Grip Length | Drilled Price | Undrilled "A" Price | Drilled Price | Undrilled "A" Price |
| -4 | 19/32 | 1/16 | . | . | . | . | 1/16 | - | . | - | - |
| -5 | 23/32 | 3/16 | . | . | . | . | 1/16 | . | . | . | . |
| -6 | 27/32 | 5/16 | . | . | . | . | 3/16 | . | . | . | . |
| -7 | 31/32 | 7/16 | . | . | . | . | 5/16 | . | . | . | . |
| -10 | 1-3/32 | 9/16 | . | . | - | . | 7/16 | . | . | - | . |
| -11 | 1-7/32 | 11/16 | . | . | - | . | 9/16 | . | . | . | . |
| -12 | 1-11/32 | 13/16 | . | . | . | . | 11/16 | . | . | . | . |
| -13 | 1-15/32 | 15/16 | . | . | - | . | 13/16 | . | . | . | . |
| -14 | 1-19/32 | 1-1/16 | . | . | - | . | 15/16 | . | . | . | . |
| -15 | 1-23/32 | 1-3/16 | . | . | - | . | 1-1/16 | . | . | . | . |
| -16 | 1-27/32 | 1-5/16 | . | . | - | . | 1-3/16 | . | . | . | . |
| -17 | 1-31/32 | 1-7/16 | . | . | - | . | 1-5/16 | . | . | - | . |
| -20 | 2-3/32 | 1-9/16 | . | . | - | . | 1-7/16 | . | . | . | - |
| -21 | 2-7/32 | 1-11/16 | . | . | - | . | 1-9/16 | . | . | - | - |
| -22 | 2-11/32 | 1-13/16 | . | . | - | . | 1-11/16 | . | . | - | - |
| -23 | 2-15/32 | 1-15/16 | . | . | - | . | 1-13/16 | . | . | - | - |
| -24 | 2-19/32 | 2-1/16 | . | . | - | . | 1-15/16 | . | . | - | - |
| -25 | 2-23/32 | 2-4/16 | . | . | - | . | 2-1/16 | . | . | - | - |
| -26 | 2-27/32 | 2-5/16 | . | . | - | . | 2-3/16 | . | . | - | - |
| -27 | 2-31/32 | 2-7/16 | . | . | - | . | 2-5/16 | . | . | - | - |
| -30 | 3-3/32 | 2-9/16 | . | . | - | . | 2-7/16 | . | . | - | - |
| -31 | 3-7/32 | 2-11/16 | . | . | - | . | 2-9/16 | . | . | - | - |
| -32 | 3-11/32 | 2-13/16 | . | . | - | . | 2-11/16 | . | . | - | - |
| -33 | 3-15/32 | 2-15/16 | . | . | - | . | 2-13/16 | . | . | - | - |
| -34 | 3-19/32 | 3-1/16 | . | . | - | . | 2-15/16 | . | . | - | - |
| -35 | 3-23/32 | 3-3/16 | . | . | - | . | 3-1/16 | . | . | - | - |
| -36 | 3-27/32 | 3-5/16 | . | . | - | . | 3-3/16 | . | . | - | - |
| -37 | 3-31/32 | 3-7/16 | . | . | - | . | 3-5/16 | . | . | - | - |
| -40 | 4-3/32 | 3-9/16 | . | . | - | . | 3-7/16 | . | . | - | - |
| -41 | 4-7/32 | 3-11/16 | . | . | - | . | 3-9/16 | . | . | - | - |
| -42 | 4-11/32 | 3-13/16 | - | . | - | - | 3-11/16 | . | . | - | - |
| -43 | 4-15/32 | 3-15/16 | . | . | - | - | 3-13/16 | . | . | - | - |
| -44 | 4-19/32 | 4-1/16 | - | . | - | - | 3-15/16 | . | . | - | - |
| -45 | 4-23/32 | 4-3/16 | . | . | - | - | 4-1/16 | . | . | - | - |
| -46 | 4-27/32 | 4-5/16 | . | . | - | - | 4-3/16 | . | . | - | - |
| -47 | 4-31/32 | 4-7/16 | . | . | - | - | 4-5/16 | . | . | - | - |
| -50 | 5-3/32 | 4-9/16 | . | . | - | - | 4-7/16 | . | . | - | - |
| -51 | 5-7/32 | 4-11/16 | . | . | - | - | 4-9/16 | . | . | - | - |
| -52 | 5-11/32 | 4-13/16 | . | . | - | - | 4-11/16 | . | . | - | - |
| -53 | 5-15/32 | 4-15/16 | . | . | - | - | 4-13/16 | . | . | - | - |
| -54 | 5-19/32 | 5-1/16 | . | . | - | - | 4-15/16 | . | . | - | - |
| -55 | 5-23/32 | 5-3/16 | . | . | - | - | 5-1/16 | . | . | - | - |
| -56 | 5-27/32 | 5-5/16 | . | . | - | - | 5-3/16 | . | . | - | - |
| -57 | 5-31/32 | 5-7/16 | . | . | - | - | 5-5/16 | . | . | - | - |
| -60 | 6-3/32 | 5-9/16 | . | . | - | - | 5-7/16 | . | . | - | - |

AN BOLTS

USE REFERENCE CHART

| Bolt Size | AN960 Flat Washer | AN970 Lg. Area Flat Washer | AN365 Nylon Insert Locknut | AN310 Castle Nut | AN380 Cotter Pin |
|-----------|-------------------|----------------------------|----------------------------|------------------|------------------|
| AN3 | -10 | -3 | -1032 | -3 | -2 or longer |
| AN4 | -416 | -4 | -428 | -4 | -25-2 or longer |
| AN5 | -516 | -5 | -524 | -5 | -25-3 |
| AN6 | -616 | -6 | -624 | -6 | -3-3 or longer |
| AN7 | -716 | -7 | -720 | -7 | -3-3 or longer |
| AN8 | -816 | -8 | -820 | -8 | -3-4 or longer |

SAMPLE PART NUMBERS

AN3-4 Cad-plated, drilled shank
 AN3-4A Cad-plated, undrilled
 AN3C-4 Stainless steel, drilled shank
 AN3C-4A Stainless steel, undrilled

TOBACCO BAGS



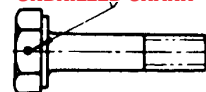
Cloth bags for holding hardware as it is removed from the aircraft. Set of 25.

P/N 04-05310

NOTICE - Aircraft Spruce & Specialty Company is committed to supplying only top quality aircraft grade hardware. In most cases we receive our hardware certified to applicable AN, MS, or NAS specifications from our suppliers, but on certain items, it is necessary for us to accept hardware without certifiable traceability in order to continue supplying that particular part number.

| Bolts are sold "EACH" | | AN7 | | | | | AN8 | | |
|-----------------------|-------------|-------------|------------------------------|---------------------|--------------------------|---------------------|-------------|-----------------------------|---------------------|
| ALL BOLTS | | Grip Length | Cadmium Plated AN7 (7/16-20) | | Stainless AN7C (7/16-20) | | Grip Length | Cadmium Plated AN8 (1/2-20) | |
| Dash | Nominal No. | | Drilled Price | Undrilled "A" Price | Drilled Price | Undrilled "A" Price | | Drilled Price | Undrilled "A" Price |
| -5 | 23/32 | 1/16 | . | . | - | - | - | - | - |
| -6 | 27/32 | 3/16 | -- | . | - | - | 1/16 | - | . |
| -7 | 31/32 | 5/16 | -- | . | - | - | 3/16 | . | . |
| -10 | 1-3/32 | 7/16 | . | . | - | - | 5/16 | -- | . |
| -11 | 1-7/32 | 9/16 | -- | . | - | - | 7/16 | . | . |
| -12 | 1/11/32 | 11/16 | . | . | - | - | 9/16 | . | . |
| -13 | 1-15/32 | 13/16 | . | . | - | - | 11/16 | . | . |
| -14 | 1-19/32 | 15/16 | . | . | - | - | 13/16 | . | . |
| -15 | 1-23/32 | 1-1/16 | . | . | - | - | 15/16 | . | . |
| -16 | 1-27/32 | 1-3/16 | . | . | - | - | 1-1/16 | . | . |
| -17 | 1-31/32 | 1-5/16 | . | . | - | - | 1-3/16 | . | . |
| -20 | 2-3/32 | 1-7/16 | . | . | - | - | 1-5/16 | . | . |
| -21 | 2-7/32 | 1-9/16 | . | . | - | - | 1-7/16 | . | . |
| -22 | 2-11/32 | 1-11/16 | . | . | - | - | 1-9/16 | . | . |
| -23 | 2-15/32 | 1-13/16 | . | . | - | - | 1-11/16 | . | . |
| -24 | 2-19/32 | 1-15/16 | . | . | - | - | 1-13/16 | . | . |
| -25 | 2-23/32 | 2-1/16 | . | . | - | - | 1-15/16 | . | . |
| -26 | 2-27/32 | 2-3/16 | . | . | - | - | 2-1/16 | . | . |
| -27 | 2-31/32 | 2-5/16 | . | . | - | - | 2-3/16 | . | . |
| -30 | 3-3/32 | 2-7/16 | -- | . | - | - | 2-5/16 | . | . |
| -31 | 3-7/32 | 2-9/16 | . | . | - | - | 2-7/16 | . | . |
| -32 | 3-11/32 | 2-11/16 | . | . | - | - | 2-9/16 | . | . |
| -33 | 3-15/32 | 2-13/16 | . | . | - | - | 2-11/16 | . | . |
| -34 | 3-19/32 | 2-15/16 | . | . | - | - | 2-13/16 | . | . |
| -35 | 3-23/32 | 3-1/16 | . | . | - | - | 2-15/16 | -- | . |
| -36 | 3-27/32 | 3-3/16 | . | . | - | - | 3-1/16 | . | . |
| -37 | 3-31/32 | 3-5/16 | . | . | - | - | 3-3/16 | . | . |
| -40 | 4-3/32 | 3-7/16 | . | . | - | - | 3-5/16 | -- | . |
| -41 | 4-7/32 | 3-9/16 | -- | -- | - | - | 3-7/16 | . | . |
| -42 | 4-11/32 | 3-11/16 | . | . | - | - | 3-9/16 | . | -- |
| -43 | 4-15/32 | 3-13/16 | . | . | - | - | 3-11/16 | . | . |
| -44 | 4-19/32 | 3-15/16 | . | . | - | - | 3-13/16 | . | . |
| -45 | 4-23/32 | 4-1/16 | . | . | - | - | 3-15/16 | . | . |
| -46 | 4-27/32 | 4-3/16 | . | . | - | - | 4-1/16 | -- | -- |
| -47 | 4-31/32 | 4-5/16 | . | . | - | - | 4-3/16 | . | -- |
| -50 | 5-3/32 | 4-7/16 | . | . | - | - | 4-5/16 | . | . |
| -51 | 5-7/32 | 4-9/16 | -- | -- | - | - | 4-7/16 | -- | . |
| -52 | 5-11/32 | 4-11/16 | . | . | - | - | 4-9/16 | . | . |
| -53 | 5-15/32 | 4-13/16 | -- | - | - | - | 4-11/16 | . | -- |
| -54 | 5-19/32 | 4-15/16 | - | -- | - | - | 4-13/16 | -- | . |
| -55 | 5-23/32 | 5-1/16 | . | . | - | - | 4-15/16 | . | -- |
| -56 | 5-27/32 | 5-3/16 | -- | . | - | - | 5-1/16 | . | . |
| -57 | 5-31/32 | 5-5/16 | -- | . | - | - | 5-3/16 | . | -- |
| -60 | 6-3/32 | 5-7/16 | . | . | - | - | 5-5/16 | . | -- |

DRILLED HEAD, UNDRILLED SHANK

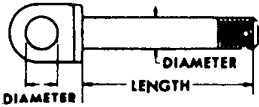


HA

| AN3 | Ea. |
|------|-------|
| H4A | |
| H5A | |
| H6A | |
| H10A | |
| H12A | |
| H13A | |
| H15A | |
| | |
| AN4 | Ea. |
| H3A | |
| H4A | |
| H5A | |
| H6A | |
| H7A | |
| H12A | |
| H13A | |
| H14A | |
| H16A | |
| H21A | |
| H26A | |
| H30A | |
| H32A | |
| | |
| AN5 | Ea. |
| H6A | |
| H12A | |
| H13A | |
| H16A | |
| H17A | |
| H20A | |
| H31A | |
| H33A | |
| | |
| AN6 | Ea. |
| H11A | |
| H16A | |
| H20A | |
| H31A | |
| H32A | |
| H34A | |
| H37A | |
| H40A | |
| H41A | |
| H43A | |
| H45A | |
| H46A | |
| H50A | |
| | |
| AN8 | Ea. |
| H7A | |

EYE BOLTS

AN42 - AN46 EYE BOLTS



Eye bolts are special purpose bolts to be used where external tension loads are to be applied. The eye is designed for attachment of such devices as a turnbuckle fork, a clevis or a cable shackle. Manufactured and plated in same manner as AN3 - AN8 bolts. Minimum tensile strength 125, 000 PSI. Eye bolts will be furnished with either drilled or undrilled shank subject to stock on hand. Add letter "A" after dash number for undrilled shank.

HA

| NOMINAL LENGTH | AN42B | | | | | AN43B | | | | |
|----------------|-------------|------------------|------------|--------------------|--------------|-------------|------------------|------------|--------------------|---------------|
| | SHANK 3/16" | | HOLE 3/16" | | THREAD 10-32 | SHANK 1/4" | | HOLE 3/16" | | THREAD 1/4-28 |
| | GRIP LENGTH | DRILLED PART NO. | PRICE EACH | UNDRILLED PART NO. | PRICE EACH | GRIP LENGTH | DRILLED PART NO. | PRICE EACH | UNDRILLED PART NO. | PRICE EACH |
| 1/2 | 1/8 | AN42B-4 | . | AN42B-4A | . | 1/16 | AN43B-4 | . | AN43B-4A | . |
| 5/8 | 1/4 | AN42B-5 | . | AN42B-5A | . | 3/16 | AN43B-5 | . | AN43B-5A | . |
| 3/4 | 3/8 | AN42B-6 | . | AN42B-6A | . | 5/16 | AN43B-6 | . | AN43B-6A | . |
| 7/8 | 1/2 | AN42B-7 | . | AN42B-7A | . | 7/16 | AN43B-7 | . | AN43B-7A | . |
| 1 | 5/8 | AN42B-10 | . | AN42B-10A | . | | AN43B-10 | . | AN43B-10A | . |
| 1-1/8 | 3/4 | AN42B-11 | . | AN42B-11A | . | 11/16 | AN43B-11 | . | AN43B-11A | . |
| 1-1/4 | 7/8 | AN42B-12 | . | AN42B-12A | . | 13/16 | AN43B-12 | . | AN43B-12A | . |
| 1-3/8 | 1 | AN42B-13 | . | AN42B-13A | . | 15/16 | AN43B-13 | . | AN43B-13A | . |
| 1-1/2 | 1-1/8 | AN42B-14 | . | AN42B-14A | . | 1-1/16 | AN43B-14 | . | AN43B-14A | . |
| 1-5/8 | 1-1/4 | AN42B-15 | . | AN42B-15A | . | 1-3/16 | AN43B-15 | . | AN43B-15A | . |
| 1-3/4 | 1-3/8 | AN42B-16 | . | AN42B-16A | . | 1-5/16 | AN43B-16 | . | AN43B-16A | . |
| 1-7/8 | 1-1/2 | AN42B-17 | . | AN42B-17A | . | 1-7/16 | AN43B-17 | . | AN43B-17A | . |
| 2 | 1-5/8 | AN42B-20 | . | AN42B-20A | . | 1-9/16 | AN43B-20 | . | AN43B-20A | . |
| 2-1/8 | 1-3/4 | AN42B-21 | . | AN42B-21A | . | 1-11/16 | AN43B-21 | . | AN43B-21A | . |
| 2-1/4 | 1-7/8 | AN42B-22 | . | AN42B-22A | . | 1-13/16 | AN43B-22 | . | AN43B-22A | . |
| 2-3/8 | 2 | AN42B-23 | . | AN42B-23A | . | 1-15/16 | AN43B-23 | . | AN43B-23A | . |
| 2-1/2 | 2-1/8 | AN42B-24 | . | AN42B-24A | . | 2-1/16 | AN43B-24 | . | - | - |
| 2-5/8 | 2-1/4 | AN42B-25 | . | AN42B-25A | . | 2-3/16 | AN43B-25 | . | AN43B-25A | . |
| 2-3/4 | 3-3/8 | - | - | AN42B-26A | . | 2-5/16 | AN43B-26 | . | AN43B-26A | . |
| 2-7/8 | 2-1/2 | AN42B-27 | . | AN42B-27A | . | 2-7/16 | AN43B-27 | . | - | - |
| 3 | 2-5/8 | AN42B-30 | . | AN42B-30A | . | 2-9/16 | AN43B-30 | . | - | - |

| Nominal Length | AN44 | | | AN44A (Undrilled) | | | AN45 | | | AN45A (Undrilled) | | |
|----------------|-------------|-------------|----------------|-------------------|-------------|----------------|-------------|-------------|----------------|-------------------|-------------|----------------|
| | Shank 5/16" | Hole 1/4" | Thread 5/16-24 | Shank 5/16" | Hole 1/4" | Thread 5/16-24 | Shank 5/16" | Hole 5/16" | Thread 5/16-24 | Shank 5/16" | Hole 5/16" | Thread 5/16-24 |
| | Grip Length | Drilled P/N | Price Each | Grip Length | Drilled P/N | Price Each | Grip Length | Drilled P/N | Price Each | Grip Length | Drilled P/N | Price Each |
| 7/8 | 3/16 | AN44-5 | . | 3/16 | AN44-5A | . | 7/16 | - | - | - | - | - |
| 1 | 7/16 | AN44-7 | . | 7/16 | AN44-7A | . | 9/16 | AN45-7 | . | 9/16 | AN45-10A | . |
| 1-1/8 | 9/16 | AN44-10 | . | 9/16 | AN44-10A | . | 11/16 | AN45-10 | . | - | - | - |
| 1-1/4 | 11/16 | AN44-11 | . | 11/16 | AN44-11A | . | 13/16 | AN45-11 | . | - | - | - |
| 1-1/4 | 13/16 | AN44-12 | . | 13/16 | AN44-12A | . | 13/16 | AN45-12 | . | 13/16 | AN45-12A | . |
| 1-3/8 | 15/16 | AN44-13 | . | 15/16 | AN44-13A | . | - | AN45-13 | . | - | - | - |
| 1-1/2 | 1-1/16 | AN44-14 | . | 1-1/16 | AN44-14A | . | - | AN45-14 | . | - | AN45-14A | . |
| 1-5/8 | 1-3/16 | AN44-15 | . | 1-3/16 | AN44-15A | . | - | AN45-15 | . | - | - | - |
| 1-3/4 | 1-5/16 | AN44-16 | . | 1-5/16 | AN44-16A | . | 1-5/16 | AN45-16 | . | - | - | - |
| 1-7/8 | 1-7/16 | AN44-17 | . | 1-7/16 | AN44-17A | . | - | AN45-17 | . | - | AN45-17A | . |
| 2 | 1-9/16 | AN44-20 | . | 1-9/16 | AN44-20A | . | 1-9/16 | AN45-20 | . | 1-9/16 | AN45-20A | . |
| 2-1/8 | - | AN44-21 | . | - | AN44-21A | . | - | - | . | - | - | - |
| 2-1/4 | - | - | . | - | AN44-22A | . | - | - | . | - | - | - |
| 2-3/8 | - | - | . | - | - | . | - | AN45-23 | . | - | - | - |
| 2-1/2 | - | - | . | - | AN44-23A | . | - | - | . | - | - | - |
| 2-5/8 | - | AN44-24 | . | - | AN44-24A | . | 2-1/16 | AN45-24 | . | 2-1/16 | AN45-24A | . |
| 2-3/4 | - | - | . | - | AN44-25A | . | - | - | . | - | AN45-25A | . |
| 2-7/8 | - | AN44-26 | . | - | AN44-26A | . | 2-5/16 | AN45-26 | . | - | - | - |
| 3 | - | - | . | - | AN44-27A | . | - | AN45-27 | . | - | AN45-27A | . |

| Nominal Length | AN46 | | | AN46A (Undrilled) | | |
|----------------|-------------|------------------|---------------|-------------------|------------------|---------------|
| | Shank 3/8" | Hole 3/8" | Thread 3/8-24 | Shank 3/8" | Hole 3/8" | Thread 3/8-24 |
| | Grip Length | Drilled Part No. | Price Each | Grip Length | Drilled Part No. | Price Each |
| 7/8 | 5/16 | AN46-7 | . | - | - | - |
| 1 | - | - | . | - | - | - |
| 1-1/8 | - | - | . | - | - | - |
| 1-1/4 | - | - | . | - | - | - |
| 1-3/8 | - | - | . | - | - | - |
| 1-1/2 | - | AN46-14 | . | - | AN46-14A | . |
| 1-5/8 | - | AN46-15 | . | - | AN46-15A | . |
| 1-3/4 | - | AN46-16 | . | - | - | - |
| 1-7/8 | 1-5/16 | AN46-17 | . | 1-5/16 | AN46-17A | . |
| 2 | 1-7/16 | AN46-20 | . | 1-7/16 | AN46-20A | . |
| 2-1/8 | 1-9/16 | AN46-21 | . | - | - | - |
| 2-1/4 | - | - | . | - | AN46-22A | . |
| 2-3/8 | - | - | . | - | AN46-23A | . |
| 2-1/2 | - | - | . | - | - | - |
| 2-5/8 | 2-1/16 | AN46-25 | . | 2-1/16 | AN46-25A | . |
| 2-3/4 | 2-3/16 | AN46-26 | . | 2-3/16 | AN46-26A | . |
| 2-7/8 | 2-1/16 | AN46-27 | . | - | - | - |
| 3 | 2-3/16 | AN46-30 | . | - | - | - |

HARDWARE KITS

BEGINNER'S BOLT KITS

UNDRILLED KIT 102 PIECES

| AN3 | QTY | AN4 | QTY | AN5 | QTY |
|-----------|-----|-----------|-----|-----------|-----|
| -3A..... | 4 | -5A..... | 6 | -4A..... | 6 |
| -4A..... | 6 | -6A..... | 6 | -6A..... | 6 |
| -5A..... | 6 | -7A..... | 6 | -10A..... | 6 |
| -6A..... | 6 | -10A..... | 6 | -11A..... | 6 |
| -7A..... | 6 | -11A..... | 6 | -13A..... | 4 |
| -10A..... | 6 | -15A..... | 4 | -14A..... | 6 |

P/N 04-00090

DRILLED KIT 102 PIECES

| AN3 | QTY | AN4 | QTY | AN5 | QTY |
|----------|-----|----------|-----|----------|-----|
| -4..... | 6 | -6..... | 6 | -6..... | 6 |
| -5..... | 6 | -7..... | 6 | -10..... | 6 |
| -6..... | 6 | -10..... | 6 | -14..... | 6 |
| -7..... | 6 | -12..... | 6 | -15..... | 4 |
| -10..... | 6 | -13..... | 6 | -16..... | 6 |
| -11..... | 4 | -14..... | 4 | -17..... | 6 |

P/N 04-00100

HOMEBUILDER'S KIT

CADMIUM PLATED 629 PIECES AN BOLTS CONTAINS 4 EACH

| DRILLED | | UNDRILLED | |
|---------|--------|-----------|---------|
| AN3-4 | | AN3-4A | |
| AN3-5 | | AN3-5A | |
| AN3-6 | AN4-6 | AN3-6A | AN4-6A |
| AN3-7 | AN4-7 | AN3-7A | AN4-7A |
| AN3-10 | AN4-10 | AN3-10A | AN4-10A |
| AN3-11 | AN4-11 | AN3-11A | AN4-11A |
| AN3-12 | AN4-12 | AN3-12A | AN4-12A |
| AN3-13 | AN4-13 | AN3-13A | AN4-13A |
| AN3-14 | AN4-14 | AN3-14A | AN4-14A |
| AN3-15 | AN4-15 | AN3-15A | AN4-15A |
| AN3-16 | AN4-16 | AN3-16A | AN4-16A |
| AN3-17 | AN4-17 | AN3-17A | AN4-17A |
| AN3-20 | AN4-20 | AN3-20A | AN4-20A |

Also Included:

| NYLON INSERT LOCKNUTS | |
|-----------------------|------|
| ITEM # | QTY. |
| AN365-1032..... | 52 |
| AN365-428..... | 44 |

| CASTLE NUTS | |
|--------------|------|
| ITEM # | QTY. |
| AN310-3..... | 52 |
| AN310-4..... | 44 |

| FLAT WASHERS | |
|-----------------|------|
| ITEM # | QTY. |
| AN960-10..... | 30 |
| AN960-10L..... | 30 |
| AN960-416..... | 30 |
| AN960-416L..... | 30 |

| COTTER PINS | |
|----------------|------|
| ITEM # | QTY. |
| AN380-2-2..... | 125 |

P/N 04-00230

ADVANCED MECHANIC'S KIT

1,229 PIECES - CADMIUM PLATED

| DRILLED | UNDRILLED | AN3 | AN4 | AN5 | AN6 |
|----------|-----------|--------|--------|--------|--------|
| -4..... | -4A..... | 3..... | 3..... | 3..... | 3..... |
| -5..... | -5A..... | 3..... | 3..... | 3..... | 3..... |
| -6..... | -6A..... | 3..... | 3..... | 3..... | 3..... |
| -7..... | -7A..... | 3..... | 3..... | 3..... | 3..... |
| -10..... | -10A..... | 3..... | 3..... | 3..... | 3..... |
| -11..... | -11A..... | 3..... | 3..... | 3..... | 3..... |
| -12..... | -12A..... | 3..... | 3..... | 3..... | 3..... |
| -13..... | -13A..... | 3..... | 3..... | 3..... | 3..... |
| -15..... | -15A..... | 3..... | 3..... | 3..... | 3..... |

Also Includes:

| FLAT WASHERS | | NYLON INSERT LOCKNUTS | |
|----------------|------|-----------------------|------|
| ITEM # | QTY. | ITEM# | QTY. |
| AN960-10..... | 100 | AN365-1032..... | 27 |
| AN960-416..... | 100 | AN365-428..... | 27 |
| AN960-516..... | 100 | AN365-524..... | 27 |
| AN960-616..... | 100 | AN365-624..... | 27 |

| COTTER PINS | | CASTLE NUTS | |
|-----------------|------|--------------|------|
| ITEM # | QTY. | ITEM# | QTY. |
| AN380-2-3..... | 100 | AN310-3..... | 27 |
| AN380-25-3..... | 200 | AN310-4..... | 27 |
| AN380-3-3..... | 100 | AN310-5..... | 27 |
| | | AN310-6..... | 27 |

AN6-4 NOT INCLUDED

P/N 04-00240.....

DELUXE BOLT PACK UNDRILLED KIT BOLTS 500 PIECES

| AN3 | QTY | AN4 | QTY | AN5 | QTY |
|-----------|-----|-----------|-----|-----------|-----|
| -3A..... | 10 | -5A..... | 10 | -6A..... | 10 |
| -4A..... | 10 | -6A..... | 10 | -10A..... | 10 |
| -5A..... | 10 | -7A..... | 10 | -12A..... | 10 |
| -6A..... | 10 | -10A..... | 10 | -16A..... | 10 |
| -7A..... | 10 | -11A..... | 10 | | |
| -10A..... | 10 | -12A..... | 10 | | |
| -11A..... | 10 | -13A..... | 10 | | |
| -12A..... | 10 | -14A..... | 10 | | |
| -13A..... | 10 | -15A..... | 10 | | |
| -14A..... | 10 | -16A..... | 10 | | |
| -15A..... | 10 | -17A..... | 10 | | |
| -16A..... | 10 | -22A..... | 10 | | |
| -17A..... | 10 | -24A..... | 10 | | |
| -20A..... | 10 | -26A..... | 10 | | |

DRILLED KIT BOLTS

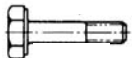
| AN3 | QTY | AN4 | QTY | AN5 | QTY |
|----------|-----|----------|-----|----------|-----|
| -5..... | 10 | -6..... | 10 | -7..... | 10 |
| -6..... | 10 | -7..... | 10 | -14..... | 10 |
| -7..... | 10 | -10..... | 10 | -17..... | 10 |
| -10..... | 10 | -12..... | 10 | -24..... | 10 |
| -12..... | 10 | -16..... | 10 | | |
| -15..... | 10 | -20..... | 10 | | |
| -20..... | 10 | | | | |
| -24..... | 10 | | | | |

P/N 04-00245

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HARDWARE KITS

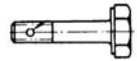
ECONOMY AN BOLT ASSORTMENTS



BOLT ASSORTMENT - UNDRILLED

| Qty | P/N | Qty | P/N | Qty | P/N |
|-----|---------|-----|---------|-----|---------|
| 10 | AN3-3A | 4 | AN4-4A | 4 | AN5-5A |
| 10 | AN3-4A | 4 | AN4-5A | 4 | AN5-6A |
| 10 | AN3-5A | 4 | AN4-6A | 4 | AN5-7A |
| 10 | AN3-6A | 4 | AN4-7A | 4 | AN5-10A |
| 10 | AN3-7A | 4 | AN4-10A | 4 | AN5-11A |
| 10 | AN3-10A | 4 | AN4-11A | 4 | AN5-12A |
| 4 | AN3-11A | 4 | AN4-12A | 4 | AN5-13A |
| 4 | AN3-12A | 4 | AN4-13A | 4 | AN5-14A |
| 4 | AN3-13A | 4 | AN4-14A | 4 | AN5-15A |
| 4 | AN3-14A | 4 | AN4-15A | 4 | AN5-16A |
| 4 | AN3-15A | 4 | AN4-16A | 4 | AN5-17A |
| 4 | AN3-16A | 4 | AN4-17A | 4 | AN5-20A |
| 4 | AN3-17A | 4 | AN4-20A | 4 | AN5-24A |
| 4 | AN3-20A | 4 | AN4-24A | | |
| 4 | AN3-24A | | | | |

204-piece Undrilled Assortment P/N 04-00105.....
 Above with 44-Drawer Cabinet P/N 04-00110.....




BOLT ASSORTMENT - DRILLED

| Qty | P/N | Qty | P/N | Qty | P/N |
|-----|--------|-----|--------|-----|--------|
| 10 | AN3-3 | 4 | AN4-4 | 4 | AN5-5 |
| 10 | AN3-4 | 4 | AN4-5 | 4 | AN5-6 |
| 10 | AN3-5 | 4 | AN4-6 | 4 | AN5-7 |
| 10 | AN3-6 | 4 | AN4-7 | 4 | AN5-10 |
| 10 | AN3-7 | 4 | AN4-10 | 4 | AN5-11 |
| 10 | AN3-10 | 4 | AN4-11 | 4 | AN5-12 |
| 4 | AN3-11 | 4 | AN4-12 | 4 | AN5-13 |
| 4 | AN3-12 | 4 | AN4-13 | 4 | AN5-14 |
| 4 | AN3-13 | 4 | AN4-14 | 4 | AN5-15 |
| 4 | AN3-14 | 4 | AN4-15 | 4 | AN5-16 |
| 4 | AN3-15 | 4 | AN4-16 | 4 | AN5-17 |
| 4 | AN3-16 | 4 | AN4-17 | 4 | AN5-20 |
| 4 | AN3-17 | 4 | AN4-20 | 4 | AN5-24 |
| 4 | AN3-20 | 4 | AN4-24 | 4 | |
| 1 | AN3-24 | 4 | | 4 | |

204-piece Drilled Assortment P/N 04-00115.....
 Above with 44-Drawer Cabinet P/N 04-00120.....

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ECONOMY COMBINED AN BOLT ASSORTMENT

Both drilled and undrilled assortments shown above
 P/N 04-00125.....

Both assortments shown above with 16-Drawer & 64-Drawer storage cabinets
 P/N 04-00130.....




ECONOMY WASHER & COTTER PIN ASSORTMENTS

To Accompany AN Bolt Assortments Shown Above



| | | |
|---|--|--|
| Washers For Undrilled Assortment P/N 04-00135..... | Washers & Cotter Pins For Drilled Bolt Assortment P/N 04-00140..... | Washers & Cotter Pins For Combined Assortment P/N 04-00145..... |
|---|--|--|




WASHER ASSORTMENTS

1,500 PIECES - STAINLESS

Contains 100 each of the following:

- 6, 8 & 10 AN960C & AN960CL
- 6, 8 & 10 Nylon
- 6, 8 & 10 MS35333
- 6, 8 & 10 MS35338

P/N 04-00220.....



WASHER ASSORTMENTS

1,500 PIECES - CAD-PLATED

Contains 100 each of the following:

- 6, 8 & 10 AN960 & AN960L
- 6, 8 & 10 Nylon Washer
- 6, 8 & 10 MS35333
- 6, 8 & 10 MS35338

P/N 04-00215.....

HARDWARE KITS

ECONOMY SCREW PACKS



1/2" 100° 600-Piece Screw Pack

Flat Phillips - AN507C Machine Screws

| | |
|-----|-------------|
| 100 | 6-32 x 1/2 |
| 100 | 8-32 x 1/2 |
| 100 | 10-32 x 1/2 |

Flat Phillips Sheet Metal Screws

| | |
|-----|-----------|
| 100 | 6 x 1/2B |
| 100 | 8 x 1/2B |
| 100 | 10 x 1/2B |

Steel plated..... P/N 04-00180
Stainless..... P/N 04-00185.....

1/2" 600-Piece Screw Pack

Truss Phillips - AN526C Machine Screws

| | |
|-----|-------------|
| 100 | 6-32 x 1/2 |
| 100 | 8-32 x 1/2 |
| 100 | 10-32 x 1/2 |

Truss Phillips Sheet Metal Screws

| | |
|-----|-----------|
| 100 | 6 x 1/2A |
| 100 | 8 x 1/2A |
| 100 | 10 x 1/2A |

Steel plated..... P/N 04-00190
Stainless..... P/N 04-00195.....

1/2" 900-Piece Screw Pack

The entire contents of 600-piece pack shown above plus the following:

AN507C 100° CSK Flat Phillips Machine Screws

| | |
|-----|-------------|
| 100 | 6-32 x 1/2 |
| 100 | 8-32 x 1/2 |
| 100 | 10-32 x 1/2 |

Steel plated..... P/N 04-00205
Stainless..... P/N 04-00210

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SCREW KITS LARGE ASSORTMENT 2,250 PIECES



AN526 Machine Screw, Truss Phillips

| | |
|-----|-------------|
| 100 | 4-40 x 1/2 |
| 100 | 6-32 x 1/2 |
| 100 | 8-40 x 3/8 |
| 100 | 8-32 x 1/2 |
| 100 | 10-32 x 1/2 |
| 100 | 10-32 x 3/4 |



Sheet Metal Screw, Truss Phillips

| | |
|-----|----------|
| 100 | 4 x 1/2 |
| 100 | 6 x 1/2 |
| 100 | 8 x 1/2 |
| 100 | 8 x 1/2B |
| 100 | 10 x 1/2 |

AN507 100° CSK Machine Screw, FP

| | |
|-----|-------------|
| 100 | 6-32 x 1/2 |
| 100 | 8-32 x 1/2 |
| 100 | 10-32 x 1/2 |

Nylon Insert Locknuts

| | |
|----|-------|
| 50 | 6-32 |
| 50 | 8-32 |
| 50 | 10-32 |

Flat Washer AN960

| | |
|-----|----|
| 100 | 6 |
| 100 | 8 |
| 100 | 10 |

Nylon Washers

| | |
|-----|----|
| 100 | 6 |
| 100 | 8 |
| 100 | 10 |

100° CSK Washers

| | |
|----|----|
| 50 | 8 |
| 50 | 10 |

Stainless Kit P/N 04-00295.....

Steel Plated Kit..... P/N 04-00296.....



STRAIGHT BUSHINGS

Oilite Impregnated Bronze. SAE 841.

| Model No. | Part No. | Hole I.D. | Hole O.D. | Length | Price Ea. |
|-----------|----------|-----------|-----------|--------|-----------|
| AA304-20 | 05-01856 | 1/4 | 3/8 | 1 | . |
| AA309-5 | 05-01857 | 3/16 | 5/16 | 3/4 | . |
| B812-6 | 05-02098 | 1/2 | 3/4 | 3/4 | . |
| B812-7 | 05-02099 | 1/2 | 3/4 | 7/8 | . |
| B610-6 | 04-01944 | 3/8 | 5/8 | 3/4 | . |
| 8363 | 05-04543 | 5/8 | 1 | 1-1/8 | . |

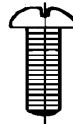


PN 04-01646

BRASS FLANGED BUSHINGS

| Model No. | Part No. | Hole I.D. | Hole O.D. | Length | Flange O.D. | Flange Thickness | Price Each |
|------------|----------|-----------|-----------|--------|-------------|------------------|------------|
| FB46-02 | 04-01646 | 1/4 | 3/8 | 1/4 | 1/2 | 3/64 | . |
| FB810-04 | 04-01647 | 1/2 | 5/8 | 1/2 | 7/8 | 1/8 | . |
| FB810-08 | 04-01648 | 1/2 | 5/8 | 1 | 7/8 | 1/8 | . |
| FB812-08 | 04-01649 | 1/2 | 3/4 | 1 | 1 | 1/8 | . |
| FB1012-04 | 04-01639 | 5/8 | 3/4 | 1/2 | 1 | 1/8 | . |
| FB1012-08 | 04-01640 | 5/8 | 3/4 | 1 | 1 | 1/8 | . |
| FB-1013-08 | 04-01641 | .6270 | .8150 | 1 | 1-1/16 | 5/32 | . |
| FB1214-06 | 04-01642 | 3/4 | 7/8 | 3/4 | 1-1/8 | 5/32 | . |
| FB-1620-06 | 04-01644 | 1 | 1-1/4 | 3/4 | 1-1/2 | 3/16 | . |
| FB1620-10 | 04-01645 | 1 | 1-1/4 | 1-1/4 | 1-1/2 | 3/16 | . |
| FF303-01 | 04-01650 | 3/16 | 5/16 | 3/16 | 7/16 | 1/16 | . |
| FF312-02 | 04-01651 | .252 | .3775 | 1/2 | 15/32 | 1/16 | . |
| FF435-1 | 04-01652 | 1/4 | 7/16 | 1/2 | 1/2 | 1/16 | . |
| FF512-03 | 04-01653 | .3765 | .5030 | 5/8 | 5/8 | 3/32 | . |
| FF520-10 | 05-02114 | 3/8 | 1/2 | 3/8 | 5/8 | 1/16 | . |
| FF520-15 | FF520-15 | 3/8 | 1/2 | 1/4 | 5/8 | 1/16 | . |
| FF620-01 | 04-01654 | .5020 | .6270 | 1/2 | 7/8 | 1/16 | . |
| FF730-03 | 04-01655 | 5/8 | 3/4 | 5/8 | 1 | 3/32 | . |

ECONOMY SCREW KIT STAINLESS STEEL - 2,100 PIECES



AN526C Machine Truss Phillips

Sizes 6-32, 8-32, 10-32

| Qty. | Length |
|------|--------|
| 100 | 1/2" |
| 50 | 5/8" |
| 25 | 3/4" |
| 25 | 1" |



AN507C Machine 100° CSK, Flat Phillips

| Qty. | Length |
|------|--------|
| 100 | 1/2" |
| 50 | 5/8" |
| 25 | 3/4" |
| 25 | 1" |



Sheet Metal Truss Phillips

Sizes 6, 8, 10

| Qty. | Length |
|------|--------|
| 100 | 1/2" |
| 50 | 5/8" |
| 25 | 3/4" |
| 25 | 1" |



Sheet Metal 100° CSK, Flat Phillips

| Qty. | Length |
|------|--------|
| 100 | 1/2" |

Stainless Kit P/N 04-00290.....

HARDWARE KITS

NUT-COTTER PIN ASSORTMENTS

CAD-PLATED COTTER PIN KIT 350 PCS



| | | | |
|----------|-------------|---------|-----------|
| 100..... | 1/16 x 1/2" | 50..... | 1/8 x 1" |
| 100..... | 5/64 x 1/2" | 25..... | 5/32 x 2" |
| 50..... | 3/32 x 1/2" | 25..... | 3/16 x 2" |

P/N 04-00155

STAINLESS STEEL COTTER PIN KIT 400 PCS



| | | | |
|----------|-------------|---------|-----------|
| 100..... | 1/16 x 1/2" | 50..... | 1/8 x 1" |
| 100..... | 5/64 x 1/2" | 25..... | 5/32 x 2" |
| 100..... | 3/32 x 1/2" | 25..... | 3/16 x 2" |

P/N 04-00150

CAD-PLATED COTTER PIN KIT 500 PCS



| | | | |
|----------|-------------|---------|---------------|
| 100..... | 1/16 x 1/2" | 50..... | 1/16 x 1-1/2" |
| 100..... | 5/64 x 3/4" | 50..... | 5A/32 x 2" |
| 100..... | 3/32 x 1" | 25..... | A3/16 x 2" |
| 50..... | 1/8 x 3/4" | 25..... | 3/16 x 2-1/2" |

P/N 04-00165

STAINLESS STEEL COTTER PIN KIT 500 PCS



| | | | |
|----------|-------------|---------|---------------|
| 100..... | 1/16 x 1/2" | 50..... | 1/16 x 1-1/2" |
| 100..... | 5/64 x 3/4" | 50..... | 5/32 x 2" |
| 100..... | 3/32 x 1" | 25..... | 3/16 x 2" |
| 50..... | 1/8 x 3/4" | 25..... | 3/16 x 2-1/2" |

P/N 04-00160

DELUXE COTTER PIN KITS 850 PCS

AN380 - Cad-Plated

| Dash | Size | Qty. | Dash | Size | Qty. |
|-------|-------------|------|-------|---------------|------|
| -1-2 | 1/32 x 1/2" | 50 | -3-4 | 3/32 x 1" | 75 |
| -1-4 | 1/32 x 1" | 50 | -3-6 | 3/32 x 1-1/2" | 25 |
| -2-2 | 1/16 x 1/2" | 100 | -3-8 | 3/32 x 2" | 25 |
| -2-3 | 1/16 x 3/4" | 100 | -4-3 | 1/8 x 3/4" | 25 |
| -2-4 | 1/16 x 1" | 100 | -4-5 | 1/8 x 1-1/4" | 75 |
| -25-2 | 5/64 x 1/2" | 25 | -4-8 | 1/8 x 2" | 50 |
| -25-3 | 5/64 x 3/4" | 25 | -4-10 | 1/8 x 2-1/2" | 50 |
| -3-3 | 3/32 x 3/4" | 75 | | | |

P/N 04-00375

AN381 - Stainless

| Dash | Size | Qty. | Dash | Size | Qty. |
|--------|---------------|------|-------|---------------|------|
| -1-8 | 1/16 x 1/2" | 100 | -3-16 | 3/32 x 1" | 75 |
| -2-12 | 1/16 x 3/4" | 100 | -3-24 | 3/32 x 1-1/2" | 25 |
| -2-16 | 1/16 x 1" | 100 | -4-12 | 1/8 x 3/4" | 25 |
| -2-24 | 1/16 x 1-1/2" | 50 | -4-16 | 1/8 x 1" | 50 |
| -25-8 | 5/64 x 3/4" | 50 | -4-24 | 1/8 x 1-1/2" | 25 |
| -25-12 | 5/64 x 1/2" | 75 | -4-32 | 1/8 x 2" | 25 |
| -3-8 | 3/32 x 1/2" | 75 | -4-40 | 1/8 x 2-1/2" | 25 |
| -3-12 | 3/32 x 3/4" | 50 | | | |

P/N 04-00380

ECONOMY AN365 NUT PACKS



AN365C NUT KIT Stainless

| Qty. | Part No. |
|---------|----------|
| 25..... | 4-40 |
| 50..... | 6-32 |
| 50..... | 8-32 |
| 50..... | 10-32 |
| 25..... | 1/4-28 |

AN365 NUT KIT Cad-Plated

| Qty. | Part No. |
|----------|----------|
| 50..... | 4-40 |
| 100..... | 6-32 |
| 100..... | 8-32 |
| 100..... | 10-32 |
| 50..... | 1/4-28 |

Stainless Kit P/N 04-00170

Cad Plated Kit P/N 04-00175

LOCKNUT KIT 208 PIECES

Cad-Plated. For undrilled bolt assortment.



| | |
|-------------|------------|
| 100 ea..... | AN365-1032 |
| 56 ea..... | AN365-428 |
| 52 ea..... | AN365-524 |

P/N 04-00330

CASTLE NUT KIT 208 PIECES

*Cad-Plated.
For drilled bolt assortment*



| | |
|-------------|---------|
| 100 ea..... | AN310-3 |
| 56 ea..... | AN310-4 |
| 52 ea..... | AN310-5 |

P/N 04-00335

AN365C NUT KIT STAINLESS 200 PIECES



| | | | |
|------------|------|------------|-----|
| 50 ea..... | 632 | 25 ea..... | 428 |
| 50 ea..... | 832 | 25 ea..... | 524 |
| 50 ea..... | 1032 | | |

P/N 04-00340

AN365 NUT KIT CAD-PLATED - 400 PIECES



| | | | |
|-------------|------|------------|-----|
| 100 ea..... | 632 | 50 ea..... | 428 |
| 100 ea..... | 832 | 50 ea..... | 524 |
| 100 ea..... | 1032 | | |

P/N 04-00345

470 PIECE COMBO NUT ASSORTMENT

Nylon Insert Locknuts

| Item # | Qty. |
|------------|------|
| AN365-632 | 15 |
| AN365-832 | 50 |
| AN365-1032 | 50 |
| AN365-428 | 50 |
| AN365-524 | 15 |

Plain Hex Nuts

| Item # | Qty. |
|---------|------|
| AN315-3 | 25 |
| AN315-4 | 25 |
| AN315-5 | 15 |
| AN315-6 | 15 |

Castle Nuts

| Item # | Qty. |
|---------|------|
| AN310-3 | 50 |
| AN310-4 | 50 |
| AN310-5 | 15 |
| AN310-6 | 15 |

Shear Castle Nuts

| Item # | Qty. |
|---------|------|
| AN320-3 | 25 |
| AN320-4 | 25 |
| AN320-5 | 15 |
| AN320-6 | 15 |

P/N 04-00350

HA

AIRFRAME NUTS



AN310 CASTLE, AN320 SHEAR NUTS

Fabricated from steel & cadmium plated per QQ-P-416, Type II, Class 2. AN310 castle nuts are used with drilled-shank bolts, clevis bolts, eye bolts and studs. The slots in the nut accommodate a cotter pin for safety purposes. The thinner AN320 castellated shear nut, with half tensile rating of the AN310 nut, used with clevis bolts & threaded taper pins which are subject to shearing stress only.

| AN310, AN320 Dash No. | Thread Size | Cotter Pin Size | AN310 Cad Plated Nuts Price | AN310C Stainless Nuts | AN320 Cad Plated Each | AN320C Stainless Nuts |
|-----------------------|-------------|-----------------|-----------------------------|-----------------------|-----------------------|-----------------------|
| -3 | 10-32 | AN380-2-2 | . | . | . | . |
| -4 | 1/4-28 | | . | . | . | . |
| -5 | 5/16-24 | | . | . | . | . |
| -6 | 3/8-24 | AN380-3-3 | . | . | . | . |
| -7 | 7/16-20 | | . | . | . | . |
| -8 | 1/2-20 | | . | . | . | . |
| -9 | 9/16-18 | AN380-4-4 | . | --- | . | . |
| -10 | 5/8-18 | | . | --- | . | . |
| -12 | 3/4-16 | AN380-4-5 | . | --- | . | . |



AN315 FULL HEX, AN316 THIN CHECK NUTS

Fabricated from steel and cadmium plated per QQ-P-416, Type II, Class 2. The AN315 plain hex nut is of rugged construction and can carry the same high tension load as the AN310 castle nut. It requires an auxiliary locking device such as a check nut or lock washer. AN316 hex check nuts can carry half the tension load of the AN315 nut. They are used as a locking device for plain nuts, set screws, rod ends, etc. Order by AN number. Add R or L after dash number for right-hand or left-hand thread. **Example:** AN316-5L is a thin check nut with 5/16-24 left-hand thread.

| AN315 | Price Ea. | | Thread Size | AN316 | Price Ea. | |
|-------|-----------|-----|-------------|-------|-----------|------|
| | R | L | | | R | L |
| -640 | . | . | 6-40 | None | None | None |
| -3 | . | . | 10-32 | None | None | None |
| -4 | . | . | 1/4-28 | -4 | . | . |
| -5 | . | . | 5/16-24 | -5 | . | . |
| -6 | . | . | 3/8-24 | -6 | . | . |
| -7 | . | . | 7/16-20 | -7 | . | . |
| -8 | . | --- | 1/2-20 | -8 | . | . |
| -9 | . | --- | 9/16-18 | -9 | . | --- |



HEX NUT - LOW HEIGHT

Heat treated, cadmium plated steel with dry film lubricant applied. Self-locking. Standard temp. to 450°F.

| Thread Size | NAS No. | Part No. | Price Ea. | Thread Size | NAS No. | Part No. | Price Ea. |
|-------------|---------|----------|-----------|-------------|---------|----------|-----------|
| 6-32 | 679-A06 | 04-00143 | . | 5/16-24 | 679-A5 | 04-00148 | . |
| 8-32 | 679-A08 | 04-00144 | . | 3/8-24 | 679-A6 | 04-00149 | . |
| 10-32 | 679-A3 | 04-00146 | . | 7/16-20 | 679-A7 | 04-00154 | . |
| 1/4-28 | 679-A4 | 04-00147 | . | | | | |



CAP NUTS ("ACORN NUTS")

Use these solid brass cap nuts to attach instrument panels to stud-type shock mounts. Give the panel an attractive, finished appearance and do not introduce magnetic interference.

| Part No. | Thread Size | Price Ea. | Part No. | Thread Size | Price Ea. |
|----------|-------------|-----------|----------|-------------|-----------|
| AC632 | 6-32 | . | AC1032 | 10-32 | . |
| AC832 | 8-32 | . | AC1428 | 1/4-28 | . |

AN345 PLAIN HEX MACHINE SCREW NUT



| Fine Thread Thread | Cad-Plated Cat.# | Price | Stainless Cat.# | Price |
|--------------------|------------------|-------|-----------------|-------|
| 10-32 | AN345-10 | . | AN345C10 | . |
| 1/4-28 | AN345-428 | . | AN345C428 | . |
| 5/16 | AN345-524 | . | | |
| 3/8-24 | AN345-624 | . | | |

AN340 PLAIN HEX MACHINE SCREW NUT

Coarse Thread - Use brass type for instruments.



| Thread | Dash# | AN340 Cad-Plated Price | AN340C Stainless Price | AN340B Brass Price |
|--------|-------|------------------------|------------------------|--------------------|
| 4-40 | -4 | . | . | . |
| 6-32 | -6 | . | . | . |
| 8-32 | -8 | . | . | . |
| 10-24 | -10 | . | . | . |

AN350 WING NUTS



AN350 WING NUTS Fabricated from carbon steel and cadmium plated per specification QQ-P416A, Type II, Class 3. Tensile strength 50,000 PSI. A .070" hole is drilled in one wing for safety wire.

| Dash No. | Thread Size | Price Each | Dash No. | Thread Size | Price Each |
|----------|-------------|------------|----------|-------------|------------|
| -632 | 3-32 | --- | -4 | 1/4-28 | . |
| -832 | 8-32 | --- | -5 | 5/16-24 | --- |
| -1032 | 10-32 | . | | | |

MS27151 PAL NUTS



MS27151 engine nuts replace AC356 Pal nuts. They are stamped from 1050 spring steel and cadmium plated per QQ-P-416A, Type II, Class 2.

| Dash No. | Thread Size | Price Each | Dash No. | Thread Size | Price Each |
|----------|-------------|------------|----------|-------------|------------|
| -7 | 10-32 | . | -19 | 3/8-24 | . |
| -13 | 1/4-28 | . | -21 | 7/16-24 | . |
| -16 | 5/16-24 | . | -24 | 1/2-20 | . |

MS17825 SELF-LOCKING CASTLE NUTS

Manufactured to standard castle or shear nut specifications with a nylon insert added for positive safety. Use it throughout the control system. Should the cotter pin used with castle nuts be overlooked, the nut cannot work loose. The nylon insert will act as a stop nut.



| Dash No. | Thread Size | Price Each | Dash No. | Thread Size | Price Each |
|----------|-------------|------------|----------|-------------|------------|
| -3 | 10-32 | . | -6 | 3/8-24 | . |
| -4 | 1/4-28 | . | -7 | 7/16-20 | . |
| -5 | 5/16-24 | . | | | |

EXHAUST MANIFOLD NUTS



| Part No. | Thread Size | Type | Engine Application | Price Each |
|----------|-------------|-------|--|------------|
| 22022 | 5/16-24 | Brass | Cont. A-65, (C-75 thru O-90, O-200, O-300) | . |
| STD1410 | 5/16-18 | Steel | Lycoming | . |
| STD1411 | 1/4-20 | Steel | Lycoming | . |

MS21042 HEX NUTS (LUBED)

These are the same as MS21042- but have a dry film lube (dark grey).

| Dash No. | Thread Size | Price Each | Dash No. | Thread Size | Price Each | Dash No. | Thread Size | Price Each |
|----------|-------------|------------|----------|-------------|------------|----------|-------------|------------|
| -L04 | 4-40 | . | -L3 | 10-32 | . | -L5 | 5/16-24 | . |
| -L06 | 6-32 | . | -L4 | 1/4-28 | . | -L6 | 3/8-24 | . |
| -L08 | 8-32 | . | | | | | | |

MS21043 HEX NUTS (STAINLESS STEEL)

These are the same as MS21042 but are made from A-286 stainless steel and are silver plated.

| Dash No. | Thread Size | Price Each | Dash No. | Thread Size | Price Each | Dash No. | Thread Size | Price Each |
|----------|-------------|------------|----------|-------------|------------|----------|-------------|------------|
| -04 | 4-40 | . | -3 | 10-32 | . | -5 | 5/16-24 | . |
| -06 | 6-32 | . | -4 | 1/4-28 | . | -6 | 3/8-24 | . |
| -08 | 8-32 | . | | | | | | |

AXLE NUTS



Castle type nuts manufactured to MIL Specification MS21025 using 4140 steel. Mild steel nuts are not acceptable for use on certificated aircraft. 1-1/4" dia. nuts for 500 x 5 axles, 1-1/2" dia. nuts for 600 x 6 axles.

| Nut Type | Thread Size | Part No. | Price | Nut Type | Thread Size | Part No. | Price |
|----------|-------------|----------|-------|----------|-------------|----------|-------|
| Castle | 1-1/4x16 | 06-11800 | . | Round | 1-1/4x12 | 11725 | . |
| Castle | 1-1/2x16 | 06-11900 | . | Round | 1-1/2x16 | 11726 | . |

HA

STOP NUTS – ANCHOR NUTS



AN363
MS21045
NAS1021A

AN363 & MS21042 ALL METAL STOP NUTS

The AN363 and MS21042 all-metal stop nuts are designed for use in high temperature installations (up to 450°F). The MS21042 nuts are shorter than the AN363 nut but develop the same tensile strength. Fabricated from carbon steel and cadmium plated per specification QQ-P-416C.

MS21042

| AN363 CAD Plated Dash No. | Price Each | AN363C Stainless Dash No. | Price Each | Thread Size | MS21042 Dash No. | Price Each |
|---------------------------|------------|---------------------------|------------|-------------|------------------|------------|
| -632 | . | -632 | . | 6-32 | -06 | . |
| -832 | . | -832 | . | 8-32 | -08 | . |
| -1032 | . | -1032 | . | 10-32 | -3 | . |
| -428 | . | -428 | . | 1/4-28 | -4 | . |
| -524 | . | -524 | . | 5/16-24 | -5 | . |
| -624 | . | -624 | . | 3/8-24 | -6 | . |
| -720 | . | --- | --- | 7/16-20 | -7 | . |
| -820 | . | --- | --- | 1/2-20 | -8 | . |
| -918 | . | --- | --- | 9/16-18 | -9 | --- |

AN364, AN365 ELASTIC STOP NUTS



AN364
MS21083
NAS1022N

These precision-made nuts are reliable and economical fastening devices. The nylon insert gives a friction grip on the threads of the bolt and holds securely. The AN364 (thin) stop nut is for use in structural applications where the bolt is loaded primarily in shear or in any application where the tensile strength of the regular height AN365 is not required. Cad stop nuts are furnished to military specifications. Insert color designates manufacturer only.



AN365
MS20365
NAS1021N

| Dash No. | Thread Size | Price Ea. | | Dash No. | Thread Size | Price Ea. | |
|----------|-------------|-----------|-------|----------|-------------|-----------|-------|
| | | AN364 | AN365 | | | AN364 | AN365 |
| -440A | 4-40 | ---- | ---- | -524A | 5/16-24 | . | . |
| -440 | 4-40 | ---- | ---- | -624A | 3/8-24 | . | . |
| -632A | 6-32 | . | . | -720A | 7/16-20 | . | . |
| -832A | 8-32 | . | . | -820A | 1/2-20 | . | . |
| -1024A | 10-24 | --- | --- | -918A | 9/16-18 | . | . |
| -1032A | 10-32 | . | . | -1018A | 5/8-18 | . | . |
| -428A | 1/4-28 | . | . | -1216A | 3/4-16 | . | . |

NSWC ELASTIC STOP NUT KIT

Contains: • AN364-428A (20 qty) • AN364-918A (4 qty) • AN364-624A(22 qty) • AN364-720A (4 qty) • AN364-820A (32 qty)
P/N 04-01729



MS21044 / MS21083 STAINLESS STOP NUTS

| Part Number | Bolt Size | Price Ea. | Part Number | Bolt Size | Price Ea. |
|-------------|-----------|-----------|-------------|-----------|-----------|
| MS21044C04 | #4 | . | MS21083C4 | 1/4 | . |
| MS21044C9 | 9/16 | . | MS21083C7 | 7/16 | . |
| MS21044C10 | 5/8 | . | MS21083C8 | 1/2 | . |
| MS21083C9 | 9/16 | . | MS21083C10 | 5/8 | . |

COMMERCIAL GRADE STAINLESS STOP NUTS

| Dash No. | Thread Size | Price Ea. | | Dash No. | Thread Size | Price Ea. | |
|----------|-------------|-----------|--------|----------|-------------|-----------|--------|
| | | Com364 | Com365 | | | Com364 | Com365 |
| -440 | 4-40 | . | . | -624 | 3/8-24 | --- | --- |
| -632 | 6-32 | . | . | -720 | 7/16-20 | --- | --- |
| -832 | 8-32 | . | . | -820 | 1/2-20 | --- | --- |
| -1024 | 10-24 | --- | --- | -918 | 9/16-18 | --- | --- |
| -1032 | 10-32 | . | . | -1018 | 5/8-18 | --- | --- |
| -428 | 1/4-28 | . | . | -1216 | 3/4-16 | --- | --- |
| -524 | 5/16-24 | . | . | | | | |



ALL-METAL FLOATING ANCHOR NUTS



| Two-Lug Nut | Price Ea. | Thread Size | One-Lug Nut | Price Ea. |
|-------------|-----------|-------------|-------------|-----------|
| MS21059L06 | . | 6-32 | MS21061L06 | . |
| MS21059L08 | . | 8-32 | MS21061L08 | . |
| MS21059L3 | . | 10-32 | MS21061L3 | . |

ANCHOR NUTS

Anchor nuts are designed for blind mounted applications where it is impractical to use hex nuts or where it is desirable to have an attached nut for ease of maintenance. Use 3/32" dia. rivets with nut sizes 632, 832, 1032 and 428. Use 1/8" dia. rivets with 524 and 624.

TWO LUG ANCHOR NUTS



AN366F
NA1, MS21078,
NAS1023N



K1000
MS21047, NAS680N,
NAS1023A



MK1000
MS21069, NAS697N

ELASTIC-INSERT ANCHOR NUT

| Part No. | Thread Size | Price Each | Part No. | Thread Size | Price Each |
|--------------|-------------|------------|-------------|-------------|------------|
| MS21078-06 | 6-32 | . | AN366F-428A | 1/4-28 | . |
| AN366F-832 | 8-32 | - | AN366F-524 | 5/16-24 | . |
| AN366F-1032A | 10-32 | . | | | |

ALL METAL ANCHOR NUT

| Dash No. | Thread Size | MS21047 (Full Size) Price Ea. | MS21069 (Miniature) Price Ea. | Dash No. | Thread Size | MS21047 (Full Size) Price Ea. | MS21069 (Miniature) Price Ea. |
|----------|-------------|-------------------------------|-------------------------------|----------|-------------|-------------------------------|-------------------------------|
| L06 | 6-32 | . | . | -4 | 1/4-28 | . | . |
| L08 | 8-32 | . | . | -5 | 5/16-24 | . | --- |
| L3 | 10-32 | . | . | -6 | 3/8-24 | . | --- |

ONE LUG ANCHOR NUTS



NA17
MS21080, NAS1025N



K2000
MS21051, NAS682A, NAS1025A



MK2000
MS21071, NAS696A

| Part No. | Price Each | Thread Size | All-Metal Anchor Nut Price Each | |
|-----------|------------|-------------|---------------------------------|---------------------------------|
| | | | Dash No. | MS21051 (Full Size) (Miniature) |
| | | 6-32 | L06 | . |
| | | 8-32 | L08 | . |
| MS21080-3 | | 10-32 | L3 | . |
| | | 1/4-28 | L4 | . |



ANCHOR NUT, DIMPLED, STANDARD SIZE

Anchor Nut, Dimpled Standard Size
K1100-0.....6-32 Thread P/N 04-01724
K1100-08.....8-32 Thread P/N 04-01725

Anchor Nut, One Leg, Dimpled, Standard size
MS21053-L08.....8-32 Thread P/N 04-01726

NA5

MS21081
NAS1027N



CORNER NUTS



K3000
MS21055
NAS684A
NAS1027A

| All-Metal Anchor Nut | Price Ea. | Size | Anchor Nut | Price Ea. |
|----------------------|-----------|--------|------------|-----------|
| MS21081-3 | . | 8-32 | MS21055L08 | . |
| MS21081-4 | . | 10-32 | MS21055L3 | . |
| | | 1/4-28 | MS21055L4 | . |



NA27 (AN1033N)

RIGHT ANGLE NUTS (Fixed)

| Part No. | Thread Size | Price Ea. |
|-------------|-------------|-----------|
| 22NA7-68-62 | 6-32 | . |



NA27 (AN256F)

RIGHT ANGLE FLOATING NUTS

| Part No. | Thread Size | Price Ea. |
|--------------|-------------|-----------|
| 22NA27-22-62 | 6-32 | . |
| 22NA27-22-82 | 8-32 | --- |

TWO LUG MINI ANCHOR NUTS



| Part Number | Thread Size | Price Each |
|----------------------------|-------------|------------|
| MS21075L06 | 6-32 | . |
| MS21075L08 | 8-32 | . |
| MS21075L3 | 10-32 | . |
| MS21059L4 | 1/4-28 | . |
| MF500-3 (Surplus Material) | 10-32 | . |

TINNERMAN FASTENERS

TINNERMAN NUTS FOR SHEET METAL SCREWS



"B"-type Sheet Metal Screw

These speed nuts are self-locking steel fasteners. Locking action is derived from the force exerted by the two arched prongs against the root of the screw thread and by the spring tension of the prongs and base. The combined forces of the thread lock and spring tension provide a vibration proof fastening. Speed nuts retain their spring tension and may be used repeatedly without losing their self-locking effectiveness. Suitable for numerous non-structural applications.

Finish: Phosphate-coated with three coats of olive drab paint.

Important: Speed nuts for aircraft are designed to fit standard AN530-AN531 type B sheet metal screws only. Do not use pointed type A sheet metal screws with aircraft Speed nuts. There is a difference in root diameter and thread pitch. Screw lengths: B type sheet metal screws have a blunt taper at the end. To be certain the fastener prongs grip on the full root diameter, the screw should protrude two to three threads beyond the prongs. See the illustration.

FLAT TYPE (NAS 446)

Used to replace threaded nuts, lock washers, and spanner washers; weigh less than other types of self-locking aircraft fasteners. Can be applied faster, easier, and are vibration resistant. Provide maximum holding power at minimum cost per fastener. Turned-up ends prevent scoring of surfaces. Use with type B tapping screws.

"U" TYPE (NAS 395)



| Part No. | Screw Size | Price ea. |
|--------------|------------|-----------|
| A1776-4Z-1D | #4 | . |
| A1777-6Z-1D | #6 | . |
| A1778-8Z-1D | #8 | . |
| A1779-10Z-1D | #10 | . |

ANCHOR NUTS (NAS 444)

Riveted or welded in position. Attach access plates, doors or any part that must be fastened securely, yet easily removed with fasteners retained in a blind location. Install with AN426AD-3 rivets.



| Part No. | Screw Size | Price/Ea. |
|-------------|------------|-----------|
| A6195-6Z-1D | #6 | . |
| A6195-8Z-1D | #8 | . |



LHA 4972 FLOATING CLIPNUT CADMIUM-PLATED STEEL

| Part No. | Thread | Price Each |
|--------------|--------|------------|
| 4972-5-62 | 6-32 | . |
| 4972-6-82 | 8-32 | . |
| LHA4972-1032 | 10-32 | . |

INSTRUMENT MOUNTING NUTS



Cage type. Permit mounting of aircraft instruments from the front of the panel. No charge in panel or instrument design required. Non-magnetic (speed nut is brass; cage is phosphor bronze). Conform to MIL-N-3336. Cage is easily compressed with finger-pressure to allow insertion of legs into clearance holes. When fully inserted and pressure is released, legs spring apart; retain SPEED NUT in screw-receiving position. Turned-down corners hold firm against force of inserting screw and screw-tightening torque. All instrument mounting nuts listed below take a 6-32 machine screw.

| Tinnerman Part No. | Our Part No. | NAS Part No. | Instrument Thickness | Price Ea. |
|--------------------|--------------|--------------|----------------------|-----------|
| A8938-632-493 | MS33737-9C | 487-13 | .062 | . |
| A8939-632-493 | MS33737-10C | 487-14 | .091 | . |
| A6939-632-493 | MS33737-11C | 487-15 | .125 | . |
| A8940-632-493 | MS33737-12C | 487-16 | .187 | . |
| A8941-632-493 | MS33737-13C | 487-17 | .250 | . |
| A8942-632-493 | MS33737-14C | 487-18 | .313 | . |
| A8943-632-493 | MS33737-15C | 487-20 | .375 | . |
| A8944-632-493 | MS33737-16C | 487-21 | over .375 | . |

MONADNOCK CLIP NUTS

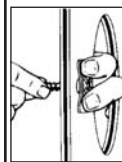
High strength Forged hex nuts suitable for structural and non-structural applications in metal, plastic and composite materials.



| Size | Distance | Edge Tkns | Part Number | Price Ea. |
|-------|-----------|-----------|-------------|-----------|
| 6-32 | .180-.120 | .030-.051 | 04-00151 | . |
| 8-32 | .310-.500 | .020-.090 | 04-00152 | . |
| 10-32 | .350-.500 | .020-.090 | 04-00153 | . |

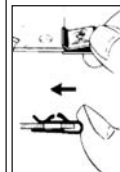
HOW TO APPLY SPEED NUT FASTENERS

FLAT TYPE



Fastener is positioned over screw clearance hole with screw-engaging prongs pointing up or outward. Screw is started into nut by hand from the underside.

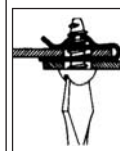
"U" TYPE



Push into position with thumb until extrusion on lower leg snaps into screw hole. The fastener "floats" in screw-receiving position to correct for normal misalignment in panel mounting holes.



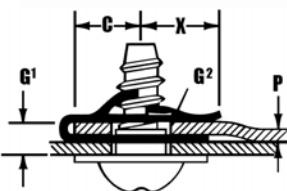
Screw can be power-driven into locked position (when base arch of fastener is flat) or a hand screw driver can be used. No wrench is required, finger pressure will prevent it from turning.



Place second panel in position & drive screw. Access to opposite side is unnecessary. Flush mounting can be made by embossing either panel.

"U" TYPE (NAS 395)

Snaps over edge of panels or into center hole locations. Holds itself in place for blind assembly. "Floats" free for easy hole alignment.



| Part Number | TypeB Scrw Size | Design Variation | P-panel Thickness Range | A Length | B Length | C-max. ctr. hole to edge | G-panel hole dia. | T-mat'l. Thickness | Price |
|--------------|-----------------|------------------|-------------------------|----------|----------|--------------------------|-------------------|--------------------|-------|
| A1784-6Z-1D | #6 | E | .025-.051 | 0.61 | 0.44 | 0.281 | 0.250 | 0.025 | . |
| A1785-6Z-1D | #6 | E | .025-.064 | 0.84 | 0.44 | 0.500 | 0.281 | 0.025 | . |
| A1789-8Z-1D | #8 | E | .025-.051 | 0.61 | 0.44 | 0.281 | 0.250 | 0.028 | . |
| A1787-8Z-1D | #8 | E | .025-.064 | 0.84 | 0.44 | 0.500 | 0.281 | 0.028 | . |
| A1788-8Z-1D | #8 | A E | .025-.064 | 0.84 | 0.44 | 0.500 | 0.170 | 0.028 | . |
| A1348-8Z-1D | #8 | A E | .025-.064 | 0.73 | 0.50 | 0.343 | 0.170 | 0.028 | . |
| A1932-8Z-1D | #8 | B E | .032-.051 | 0.58 | 0.50 | 0.265 | 0.343 | 0.025 | . |
| A1786-8Z-1D | #8 | C E H | .040-.051 | 0.53 | 0.50 | 0.218 | 0.250 | 0.028 | . |
| A178710Z-1D | #10 | E | .025-.064 | 0.84 | 0.44 | 0.500 | 0.281 | 0.031 | . |
| A1758-10Z-1D | #10 | E | .081-.094 | 0.62 | 0.44 | 0.281 | 0.281 | 0.031 | . |

HA

MACHINE SCREWS

MS27039 & MS27039C MACHINE SCREWS

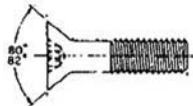


Pan head low alloy steel machine screws have 125,000 to 145,000 psi tensile strength with cadmium plate finish to QQ-P-416, Type 2, Class 3.

MS27039C screws are stainless steel Manufactured to MIL-S-6050 or MIL-8695. Equivalent to NAS 220.

| Part Number | Diam.-Thrd. Size | Length (In.) | MS27039 Price | MS27039C Price |
|--------------|------------------|--------------|---------------|----------------|
| MS27039-0804 | 8-32 | 9/32 | . | . |
| MS27039-0805 | 8-32 | 11/32 | . | . |
| MS27039-0806 | 8-32 | 13/32 | . | . |
| MS27039-0807 | 8-32 | 15/32 | . | . |
| MS27039-0808 | 8-32 | 17/32 | . | . |
| MS27039-0809 | 8-32 | 19/32 | . | . |
| MS27039-0810 | 8-32 | 21/32 | . | . |
| MS27039-0811 | 8-32 | 23/32 | . | . |
| MS27039-0812 | 8-32 | 25/32 | . | . |
| MS27039-0813 | 8-32 | 27/32 | . | . |
| MS27039-0814 | 8-32 | 29/32 | . | . |
| MS27039-0815 | 8-32 | 31/32 | . | . |
| MS27039-0816 | 8-32 | 1-1/32 | . | . |
| MS27039-0817 | 8-32 | 1-3/32 | . | . |
| MS27039-0818 | 8-32 | 1-5/32 | . | . |
| MS27039-0819 | 8-32 | 1-7/32 | . | . |
| MS27039-0820 | 8-32 | 1-9/32 | . | . |
| MS27039-0821 | 8-32 | 1-11/32 | . | . |
| MS27039-0822 | 8-32 | 1-13/32 | . | . |
| MS27039-0823 | 8-32 | 1-15/32 | . | . |
| MS27039-0824 | 8-32 | 1-17/32 | . | . |
| MS27039-1-04 | 10-32 | 9/32 | . | . |
| MS27039-1-05 | 10-32 | 11/32 | . | . |
| MS27039-1-06 | 10-32 | 13/32 | . | . |
| MS27039-1-07 | 10-32 | 15/32 | . | . |
| MS27039-1-08 | 10-32 | 17/32 | . | . |
| MS27039-1-09 | 10-32 | 19/32 | . | . |
| MS27039-1-10 | 10-32 | 21/32 | . | . |
| MS27039-1-11 | 10-32 | 23/32 | . | . |
| MS27039-1-12 | 10-32 | 25/32 | . | . |
| MS27039-1-13 | 10-32 | 27/32 | . | . |
| MS27039-1-14 | 10-32 | 29/32 | . | . |
| MS27039-1-15 | 10-32 | 31/32 | . | . |
| MS27039-1-16 | 10-32 | 1-1/32 | . | . |
| MS27039-1-17 | 10-32 | 1-3/32 | . | . |
| MS27039-1-18 | 10-32 | 1-5/32 | . | . |
| MS27039-1-19 | 10-32 | 1-7/32 | . | . |
| MS27039-1-20 | 10-32 | 19/32 | . | . |
| MS27039-1-21 | 10-32 | 1-11/32 | . | . |
| MS27039-1-22 | 10-32 | 1-13/32 | . | . |
| MS27039-1-23 | 10-32 | 1-15/32 | . | . |
| MS27039-1-24 | 10-32 | 1-17/32 | . | . |
| MS27039-1-25 | 10-32 | 1-19/32 | . | . |
| MS27039-1-26 | 10-32 | 1-21/32 | . | . |
| MS27039-1-27 | 10-32 | 1-23/32 | . | . |
| MS27039-1-28 | 10-32 | 1-25/32 | . | . |
| MS27039-1-29 | 10-32 | 1-27/32 | . | . |
| MS27039-1-30 | 10-32 | 1-29/32 | . | . |
| MS27039-1-31 | 10-32 | 1-31/32 | . | . |
| MS27039-1-32 | 10-32 | 2-1/32 | . | . |
| MS27039-4-06 | 1/4-28 | 13/32 | . | . |
| MS27039-4-07 | 1/4-28 | 15/32 | . | . |
| MS27039-4-08 | 1/4-28 | 17/32 | . | . |
| MS27039-4-09 | 1/4-28 | 19/32 | . | . |
| MS27039-4-10 | 1/4-28 | 21/32 | . | . |
| MS27039-4-11 | 1/4-28 | 23/32 | . | . |
| MS27039-4-12 | 1/4-28 | 25/32 | . | . |
| MS27039-4-13 | 1/4-28 | 27/32 | . | . |
| MS27039-4-14 | 1/4-28 | 29/32 | . | . |
| MS27039-4-15 | 1/4-28 | 31/32 | . | . |
| MS27039-4-16 | 1/4-28 | 1-1/32 | . | . |
| MS27039-4-17 | 1/4-28 | 1-3/32 | . | . |
| MS27039-4-18 | 1/4-28 | 1-5/32 | . | . |
| MS27039-4-19 | 1/4-28 | 1-7/32 | . | . |
| MS27039-4-20 | 1/4-28 | 1-9/32 | . | . |
| MS27039-4-21 | 1/4-28 | 1-11/32 | . | . |
| MS27039-4-22 | 1/4-28 | 1-13/32 | . | . |
| MS27039-4-23 | 1/4-28 | 1-15/32 | . | . |
| MS27039-4-24 | 1/4-28 | 1-17/32 | . | . |

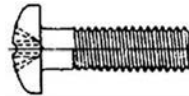
MS35190 MACHINE SCREWS (CROSS RECESSED)



82° flat head machine screws have 55,000psi minimum tensile strength and feature cadmium plate finish per QQ P-416, Type 2, Class 3.

Manufactured from carbon steel to Federal Standard #66.

| Part Number | Old AN505R | Diam.-Thrd. Size | Length (In.) | Price |
|-------------|------------|------------------|--------------|-------|
| MS35190-221 | -4R4 | 4-40 | 1/4 | . |
| MS35190-222 | -4R5 | 4-40 | 5/16 | . |
| MS35190-225 | -4R8 | 4-40 | 1/2 | . |
| MS35190-226 | -4R10 | 4-40 | 5/8 | . |
| MS35190-234 | -6R4 | 6-32 | 1/4 | . |
| MS35190-236 | -6R6 | 6-32 | 3/8 | . |
| MS35190-238 | -6R8 | 6-32 | 1/2 | . |
| MS35190-239 | -6R10 | 6-32 | 5/8 | . |
| MS35190-240 | -6R12 | 6-32 | 3/4 | . |
| MS35190-250 | -8R5 | 8-32 | 5/16 | . |
| MS35190-253 | -8R8 | 8-32 | 1/2 | . |
| MS35190-254 | -8R10 | 8-32 | 5/8 | . |



MS35207 MACHINE SCREWS (CROSS RECESSED)

These pan head machine screws have 55,000 psi minimum tensile strength and are cadmium plated to Specification QQ-P-416, Type 2, Class 3. Manufactured from carbon steel per Federal Standard #66.

| Part Number | Old AN520R | Diam.-Thrd. Size | Length (In.) | Price ea. |
|-------------|------------|------------------|--------------|-----------|
| MS35207-260 | -10R5 | 10-32 | 5/16 | . |
| MS35207-261 | -10R6 | 10-32 | 3/8 | . |
| MS35207-262 | -10R7 | 10-32 | 7/16 | . |
| MS35207-263 | -10R8 | 10-32 | 1/2 | . |
| MS35207-264 | -10R10 | 10-32 | 5/8 | . |
| MS35207-265 | -10R12 | 10-32 | 3/4 | . |
| MS35207-266 | -10R14 | 10-32 | 7/8 | . |
| MS35207-267 | -10R16 | 10-32 | 1 | . |
| MS35207-268 | -10R20 | 10-32 | 1-1/4 | . |
| MS35207-269 | -10R24 | 10-32 | 1-1/2 | . |
| MS35207-270 | -10R28 | 10-32 | 1-3/4 | . |
| MS35207-271 | -10R32 | 10-32 | 2 | . |

MS35206 MACHINE SCREWS (CROSS RECESSED)

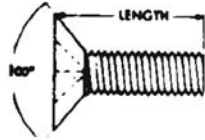


These pan head machine screws feature 60,000 psi minimum tensile strength and are cadmium plated to specification QQ-P-416, Type 2, Class 3. Manufactured from carbon steel to Federal Standard #66, these screws can be used as replacements for AN526 machine screws. Phillips head.

| Part Number | Old AN515R | Diam.-Thrd. Size | Length (In.) | Price ea. |
|-------------|------------|------------------|--------------|-----------|
| MS35206-203 | -2R2 | 2-56 | 1/4 | . |
| MS35206-204 | -2R5 | 2-56 | 5/16 | . |
| MS35206-205 | -2R6 | 2-56 | 3/8 | . |
| MS35206-206 | -2R7 | 2-56 | 7/16 | . |
| MS35206-207 | -2R8 | 2-56 | 1/2 | . |
| MS35206-208 | -2R10 | 2-56 | 5/8 | . |
| MS35206-209 | -2R12 | 2-56 | 3/4 | . |
| MS35206-212 | -4R3 | 4-40 | 3/16 | . |
| MS35206-213 | -4R4 | 4-40 | 1/4 | -- |
| MS35206-214 | -4R5 | 4-40 | 5/16 | . |
| MS35206-215 | -4R6 | 4-40 | 3/8 | . |
| MS35206-216 | -4R7 | 4-40 | 7/16 | . |
| MS35206-217 | -4R8 | 4-40 | 1/2 | . |
| MS35206-218 | -4R10 | 4-40 | 5/8 | . |
| MS35206-219 | -4R12 | 4-40 | 3/4 | . |
| MS35206-220 | -4R14 | 4-40 | 7/8 | . |
| MS35206-221 | -4R16 | 4-40 | 1 | . |
| MS35206-222 | -4R20 | 4-40 | 1-1/4 | . |
| MS35206-223 | -4R24 | 4-40 | 1-1/2 | . |
| MS35206-226 | -6R4 | 6-32 | 1/4 | . |
| MS35206-227 | -6R5 | 6-32 | 5/16 | . |
| MS35206-228 | -6R6 | 6-32 | 3/8 | . |
| MS35206-229 | -6R7 | 6-32 | 7/16 | . |
| MS35206-230 | -6R8 | 6-32 | 1/2 | . |
| MS35206-231 | -6R10 | 6-32 | 5/8 | . |
| MS35206-232 | -6R12 | 6-32 | 3/4 | . |
| MS35206-233 | -6R14 | 6-32 | 7/8 | . |
| MS35206-234 | -6R16 | 6-32 | 1 | . |
| MS35206-235 | -6R20 | 6-32 | 1-1/4 | . |
| MS35206-236 | -6R24 | 6-32 | 1-1/2 | . |
| MS35206-238 | -6R32 | 6-32 | 2 | . |
| MS35206-241 | -8R4 | 8-32 | 1/4 | . |
| MS35206-242 | -8R5 | 8-32 | 5/16 | . |
| MS35206-243 | -8R6 | 8-32 | 3/8 | . |
| MS35206-244 | -8R7 | 8-32 | 7/16 | . |
| MS35206-245 | -8R8 | 8-32 | 1/2 | . |
| MS35206-246 | -8R10 | 8-32 | 5/8 | . |
| MS35206-247 | -8R12 | 8-32 | 3/4 | . |
| MS35206-248 | -8R14 | 8-32 | 7/8 | . |
| MS35206-249 | -8R16 | 8-32 | 1 | . |
| MS35206-250 | -8R20 | 8-32 | 1-1/4 | . |
| MS35206-251 | -8R24 | 8-32 | 1-1/2 | . |
| MS35206-252 | -8R28 | 8-32 | 1-3/4 | . |
| MS35206-253 | -8R32 | 8-32 | 2 | . |
| MS35206-261 | -10R6 | 10-24 | 3/8 | . |
| MS35206-262 | -10R7 | 10-24 | 7/16 | . |
| MS35206-263 | -10R8 | 10-24 | 1/2 | . |
| MS35206-264 | -10R10 | 10-24 | 5/8 | . |
| MS35206-265 | -10R12 | 10-24 | 3/4 | . |
| MS35206-267 | -10R16 | 10-24 | 1 | . |

MACHINE SCREWS

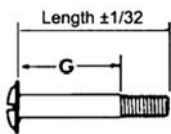
MS24693 & MS24693C MACHINE SCREWS



(FORMERLY AN 507)

These non-structural screws have a 100° countersunk flat head. Cadmium plated, Type 2, Class 3. Tensile strength 55,000 PSI. For both CAD plated and Stainless MS24693C are stainless steel.

| Thread | Length | MS24693 Cad Plated P/N | Price Each | MS24693C Stainless P/N | Price Each |
|--------|--------|---------------------------|---------------|---------------------------|---------------|
| 4-40 | 3/8 | MS24693S4 | . | MS24693C4 | --- |
| | 7/16 | MS24693S5 | . | --- | --- |
| | 1/2 | MS24693S6 | . | MS24693C6 | . |
| | 5/8 | MS24693S7 | --- | MS24693C7 | . |
| | 1 | MS24693S10 | . | MS24693C10 | . |
| 6-32 | 1/4 | MS24693S24 | . | MS24693C24 | . |
| | 3/8 | MS24693S26 | . | MS24693C26 | . |
| | 7/16 | MS24693S27 | --- | MS24693C27 | . |
| | 1/2 | MS24693S28 | . | MS24693C28 | . |
| | 5/8 | MS24693S29 | . | MS24693C29 | --- |
| 8-32 | 3/4 | MS24693S30 | . | MS24693C30 | . |
| | 1 | MS24693S32 | . | MS24693C32 | . |
| | 1/4 | MS24693S46 | . | MS24693C46 | . |
| | 3/8 | MS24693S48 | . | MS24693C48 | . |
| | 7/16 | MS24693S49 | --- | MS24693C49 | . |
| 10-32 | 1/2 | MS24693S50 | . | MS24693C50 | . |
| | 5/8 | MS24693S51 | . | MS24693C51 | . |
| | 3/4 | MS24693S52 | . | MS24693C52 | . |
| | 1 | MS24693S54 | . | MS24693C54 | . |
| | 1-1/4 | MS24693S56 | --- | MS24693C56 | . |
| 1/4-28 | 1/4 | MS24693S268 | . | MS24693C268 | . |
| | 3/8 | MS24693S270 | . | MS24693C270 | . |
| | 7/16 | MS24693S271 | --- | MS24693C271 | . |
| | 1/2 | MS24693S272 | . | MS24693C272 | . |
| | 5/8 | MS24693S273 | . | MS24693C273 | . |
| 1/4-28 | 3/4 | MS24693S274 | . | MS24693C274 | . |
| | 1 | MS24693S276 | . | MS24693C276 | . |
| | 1-1/4 | MS24693S278 | --- | MS24693C278 | . |
| | 7/16 | ---- | --- | MS24693C293 | . |
| | 1/2 | MS24693S294 | --- | MS24693C294 | . |
| 1/4-28 | 5/8 | MS24693S295 | --- | MS24693C295 | . |
| | 1 | ---- | --- | MS24693C298 | . |



AN525 WASHER HEAD SCREWS

High-strength machine screws fabricated from alloy steel per specification AMS6300. Tensile strength 125,000 PSI. Cadmium plated per QQ-P-416, Type II, Class 3. Cross-recessed head.

| Dash No. | Length In. | Grip In. | Thread Size | Price Each |
|----------|------------|----------|-------------|------------|
| -832R6 | 3/8 | 1/32 | 8-32 | . |
| -832R7 | 7/16 | 1/16 | | . |
| -832R8 | 1/2 | 1/8 | | . |
| -832R10 | 5/8 | 7/32 | | . |
| -832R12 | 3/4 | 11/32 | | . |
| -832R14 | 7/8 | 15/32 | 10-32 | . |
| -832R16 | 1 | 19/32 | | . |
| -832R20 | 1-1/4 | 27/32 | | . |
| -10R6 | 3/8 | 1/32 | | . |
| -10R7 | 7/16 | 1/16 | | . |
| -10R8 | 1/2 | 1/8 | 10-65 | . |
| -10R9 | 9/16 | 5/32 | | . |
| -10R10 | 5/8 | 7/32 | | . |
| -10R12 | 3/4 | 11/32 | | . |
| -10R14 | 7/8 | 15/32 | | . |
| -10R16 | 1 | 19/32 | 10-32 | . |
| -10R18 | 1-1/8 | 23/32 | | . |
| -10R20 | 1-1/4 | 27/32 | | . |
| -10R24 | 1-1/2 | 1-3/32 | | . |
| -416R14 | 7/8 | 15/32 | | 1/4-28 |
| -416R16 | 1 | 19/32 | . | |
| -416R18 | 1-1/8 | 23/32 | . | |
| -416R20 | 1-1/4 | 27/32 | . | |
| -416R20 | 1-1/4 | 27/32 | ---- | |

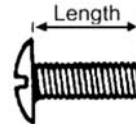
AN526 MACHINE SCREWS

Truss-head non-structural machine screws made of carbon steel, cadmium plated. Minimum tensile strength 55,000 PSI. Available in slot head or Phillips recessed head.

| Thread | Length | Phillips Part No. | Price Ea. | Slotted Part No. | Price Ea. |
|--------|--------|-------------------|-----------|------------------|-----------|
| 4-40 | 1/2 | AN526-440R8 | . | ---- | --- |
| | 1 | AN526-440R16 | ---- | ---- | --- |
| 6-32 | 1/4 | AN526-632R4 | . | ---- | --- |
| | 5/16 | AN526-632R5 | . | ---- | --- |
| | 3/8 | AN526-632R6 | . | AN526-632-6 | . |
| | 7/16 | AN526-632R7 | . | ---- | --- |
| | 1/2 | AN526-632R8 | . | AN526-632-8 | . |
| 8-32 | 9/16 | AN526-632R9 | . | ---- | --- |
| | 5/8 | AN526-632R10 | . | AN526-632-10 | . |
| | 3/4 | AN526-632R12 | . | AN526-632-12 | . |
| | 7/8 | AN526-632R14 | . | ---- | --- |
| | 1 | AN526-632R16 | . | ---- | --- |
| 10-32 | 1/4 | AN526-832R4 | . | ---- | --- |
| | 5/16 | AN526-832R5 | . | ---- | --- |
| | 3/8 | AN526-832R6 | . | ---- | --- |
| | 7/16 | AN526-832R7 | . | ---- | --- |
| | 1/2 | AN526-832R8 | . | AN526-832-8 | . |
| 10-32 | 9/16 | AN526-832R9 | . | ---- | --- |
| | 5/8 | AN526-832R10 | . | AN526-832-10 | . |
| | 3/4 | AN526-832R12 | . | AN526-832-12 | . |
| | 7/8 | AN526-832R14 | . | ---- | --- |
| | 1 | AN526-832R16 | . | AN526-832-16 | . |
| 10-32 | 1/4 | AN526-1032R4 | . | ---- | --- |
| | 5/16 | AN526-1032R5 | . | ---- | --- |
| | 3/8 | AN526-1032R6 | . | ---- | --- |
| | 7/16 | AN526-1032R7 | . | ---- | --- |
| | 1/2 | AN526-1032R8 | . | ---- | --- |
| | 9/16 | AN526-1032R9 | . | ---- | --- |
| | 5/8 | AN526-1032R10 | . | AN526-1032-10 | . |
| | 3/4 | AN526-1032R12 | . | AN526-1032-12 | . |
| | 7/8 | AN526-1032R14 | . | AN526-1032-14 | . |
| | 1 | AN526-1032R16 | . | ---- | --- |
| 1/4-28 | 1-1/8 | AN526-1032R18 | . | ---- | --- |
| | 1-1/4 | AN526-1032R20 | . | AN526-1032-20 | . |
| | 1-1/2 | AN526-1032R24 | . | ---- | --- |
| | 1-3/4 | AN526-1032R28 | . | ---- | --- |
| | 2 | AN526-1032R32 | . | ---- | --- |

AN526C STAINLESS STEEL MACHINE SCREWS

Stainless steel Phillips and slotted, Use slotted screws for antiques.

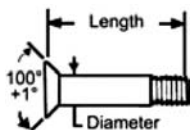


| Thread | Length | Phillips Part No. | Price Ea. | Slotted Part No. | Price Ea. |
|--------|--------|-------------------|-----------|------------------|-----------|
| 4-40 | 1/2 | AN526C-440R8 | . | ---- | --- |
| | 1/4 | AN526C-632R4 | . | AN526C-632-4 | . |
| | 3/8 | AN526C-632R6 | . | ---- | --- |
| 6-32 | 1/2 | AN526C-632R8 | . | AN526C-632-8 | . |
| | 5/8 | AN526C-632R10 | . | AN526C-632-10 | . |
| | 3/4 | AN526C-632R12 | . | ---- | --- |
| | 1 | AN526C-632R16 | . | AN526C-632-16 | . |
| 8-32 | 1/4 | AN526C-832R4 | . | ---- | --- |
| | 3/8 | AN526C-832R6 | . | ---- | --- |
| | 1/2 | AN526C-832R8 | . | AN526C-832-8 | . |
| | 5/8 | AN526C-832R10 | . | AN526C-832-10 | . |
| | 3/4 | AN526C-832R12 | . | AN526C-832-12 | . |
| 10-32 | 1 | AN526C-832R16 | . | AN526C-832-16 | . |
| | 1/4 | AN526C-1032R4 | . | ---- | --- |
| | 3/8 | AN526C-1032R6 | . | AN526C-1032-6 | . |
| | 1/2 | AN526C-1032R8 | . | AN526C-1032-8 | . |
| | 5/8 | AN526C-1032R10 | . | AN526C-1032-10 | . |
| 1/4-20 | 3/4 | AN526C-1032R12 | . | AN526C-1032-12 | --- |
| | 1 | AN526C-1032R16 | . | ---- | --- |
| | 1-1/4 | AN526C-1032R20 | ---- | ---- | --- |
| | 1-1/2 | AN526C-1032R24 | . | ---- | --- |
| 1/4-28 | 1/2 | AN526C-420R8 | . | ---- | --- |
| | 1/2 | AN526C-428R8 | . | ---- | --- |
| 1/4-28 | 3/4 | AN526C-428R12 | . | ---- | --- |
| | 1-1/8 | ---- | --- | AN526C-428-18 | . |

Note: Some sizes of AN526C screws are furnished as commercial equipment as AN screws are no longer available.

HA

FILLISTER HEAD SCREWS – MACHINE SCREWS

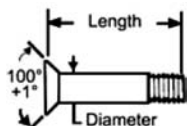


MS24694 MACHINE SCREWS (FORMERLY AN509)

These structural screws have a 100° countersunk head. Cadmium plated per QQ-P-416, Type II, Class 3. Minimum tensile strength 125,000 PSI.

HA

| MS24694 Dash No. | AN509 Dash No. | Length In. | Grip In. | Thread Size | Price Each | MS24694 Dash No. | AN509 Dash No. | Length In. | Grip In. | Thread Size | Price Each |
|------------------|----------------|------------|----------|-------------|------------|------------------|----------------|------------|----------|-------------|------------|
| -S1 | -8R4 | 9/32 | 3/32 | 8-32 | . | -S65 | -10R23 | 1-15/32 | 1 | 10-32 | . |
| -S2 | -8R5 | 11/32 | | 8-32 | . | -S66 | -10R24 | 1-17/32 | 1-1/16 | 10-32 | . |
| -S3 | -8R6 | 13/32 | | 8-32 | . | -S67 | -10R25 | 1-19/32 | 1-1/8 | 10-32 | --- |
| -S4 | -8R7 | 15/32 | | 8-32 | . | -S68 | -10R26 | 1-21/32 | 1-3/16 | 10-32 | --- |
| -S5 | -8R8 | 17/32 | | 8-32 | . | -S69 | -10R27 | 1-23/32 | 1-1/4 | 10-32 | --- |
| -S7 | -8R10 | 21/32 | 7/32 | 8-32 | . | -S70 | -10R28 | 1-25/32 | 1-5/16 | 10-32 | . |
| -S8 | -8R11 | 23/32 | 9/32 | 8-23 | --- | -S71 | -10R29 | 1-27/32 | 1-3/8 | 10-32 | --- |
| -S9 | -8R12 | 25/32 | 11/32 | 8-32 | . | -S72 | -10R30 | 1-29/32 | 1-7/16 | 10-32 | . |
| -S10 | -8R13 | 27/32 | 13/32 | 8-32 | --- | -S74 | -10R32 | 2-1/32 | 1-9/16 | 10-32 | . |
| -S11 | -8R14 | 29/32 | 15/32 | 8-32 | . | -S75 | -10R33 | 2-3/32 | 1-5/8 | 10-32 | . |
| -S12 | -8R15 | 31/32 | 17/32 | 8-32 | --- | -S76 | -10R34 | 2-5/32 | 1-11/16 | 10-32 | . |
| -S13 | -8R16 | 1-1/32 | 19/32 | 8-32 | . | -S79 | -10R37 | 2-11/32 | 1-7/8 | 10-32 | . |
| -S14 | -8R17 | 1-1/32 | 21/32 | 8-32 | --- | -S82 | -10R40 | 2-17/32 | 2-1/16 | 10-32 | . |
| -S15 | -8R18 | 1-5/32 | 23/32 | 8-32 | . | -S84 | -10R42 | 2-21/32 | 2-3/16 | 10-32 | . |
| -S16 | -8R19 | 1-7/32 | 25/32 | 8-32 | --- | -S88 | -10R46 | 2-29/32 | 2-7/16 | 10-32 | . |
| -S17 | -8R20 | 1-9/32 | 27/32 | 8-32 | . | -S90 | -10R48 | 3-1/32 | 2-9/16 | 10-32 | . |
| -S18 | -8R21 | 1-11/32 | 29/32 | 8-32 | . | -S93 | -416R6 | 13/32 | 9/64 | 1/4-28 | --- |
| -S19 | -8R22 | 1-13/32 | 31/32 | 8-32 | . | -S94 | -416R7 | 15/32 | | 1/4-28 | --- |
| -S20 | -8R23 | 1-15/32 | 1-1/32 | 8-32 | --- | -S95 | -416R8 | 17/32 | | 1/4-28 | --- |
| -S21 | -8R24 | 1-17/32 | 1-3/32 | 8-32 | . | -S96 | -416R9 | 19/32 | | 1/4-28 | --- |
| -S28 | -8R31 | 1-31/32 | 1-17/32 | 8-32 | . | -S97 | -416R10 | 21/32 | | 1/4-28 | . |
| -S29 | -8R32 | 2-1/32 | 1-19/32 | 8-32 | . | -S98 | -416R11 | 23/32 | | 3-16 | 1/4-28 |
| -S31 | -8R34 | 2-5/32 | 1-23/32 | 8-32 | . | -S99 | -416R12 | 25/32 | 1/4 | 1/4-28 | . |
| -S46 | -10R4 | 9/32 | 7/64 | 10-32 | --- | -S100 | -416R13 | 27/32 | 5/16 | 1/4-28 | . |
| -S47 | -10R5 | 11/32 | | 10-32 | --- | -S101 | -416R14 | 29/32 | 3/8 | 1/4-28 | . |
| -S48 | -10R6 | 13/32 | | 10-32 | . | -S102 | -416R15 | 31/32 | 7/16 | 1/4-28 | . |
| -S49 | -10R7 | 15/32 | | 10-32 | . | -S103 | -416R16 | 1-1/32 | 1/2 | 1/4-28 | . |
| -S50 | -10R8 | 17/32 | | 10-32 | . | -S104 | -416R17 | 1-3/32 | 9/16 | 1/4-28 | . |
| -S51 | -10R9 | 19/32 | | 10-32 | . | -S105 | -416R18 | 1-5/32 | 5/8 | 1/4-28 | . |
| -S52 | -10R10 | 21/32 | 3/16 | 10-32 | . | -S106 | -416R19 | 1-7/32 | 11/16 | 1/4-28 | . |
| -S53 | -10R11 | 23/32 | 1/4 | 10-32 | . | -S107 | -416R20 | 1-9/32 | 3/4 | 1/4-28 | --- |
| -S54 | -10R12 | 25/32 | 5/16 | 10-32 | . | -S108 | -416R21 | 1-11/32 | 13/16 | 1/4-28 | --- |
| -S55 | -10R13 | 27/32 | 3/8 | 10-32 | . | -S109 | -416R22 | 1-13/32 | 7/8 | 1/4-28 | . |
| -S56 | -10R14 | 29/32 | 7/16 | 10-32 | . | -S110 | -416R23 | 1-15/32 | 15/16 | 1/4-28 | . |
| -S57 | -10R15 | 31/32 | 1/2 | 10-32 | --- | -S111 | -416R24 | 1-17/32 | 1 | 1/4-28 | . |
| -S58 | -10R16 | 1-1/32 | 9/16 | 10-32 | . | -S113 | -416R26 | 1-21/32 | 1-1/8 | 1/4-28 | . |
| -S59 | -10R17 | 1-3/32 | 5/8 | 10-32 | . | -S115 | -416R28 | 1-25/32 | 1-1/4 | 1/4-28 | . |
| -S60 | -10R18 | 1-5/32 | 11/16 | 10-32 | . | -S119 | -416R32 | 2-1/32 | 1-1/2 | 1/4-28 | . |
| -S61 | -10R19 | 1-7/32 | 3/4 | 10-32 | --- | -S121 | -416R34 | 2-5/32 | 1-5/8 | 1/4-28 | . |
| -S62 | -10R20 | 1-9/32 | 13/16 | 10-32 | . | -S123 | -416R36 | 2-9/32 | 1-3/4 | 1/4-28 | . |
| -S63 | -10R21 | 1-11/32 | 7/8 | 10-32 | --- | -S148 | -516R16 | 1-1/32 | 15/32 | 5/16-24 | . |
| -S64 | -10R22 | 1-13/32 | 15/16 | 10-32 | . | -S178 | -516R46 | 2-29/32 | 2-11/32 | 5/16-24 | . |



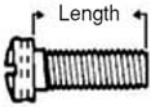
MS24694C STAINLESS STEEL MACHINE SCREWS

Same style screws as MS24694, except stainless steel. Phillips head. (Formerly AN509C)

| MS Part No. | AN509C No. | Thread Size | Length Inches | Price ea. |
|-------------|------------|-------------|---------------|-----------|
| MS24694C1 | -8R4 | 8-32 | 9/32 | . |
| MS24694C2 | -8R5 | 8-32 | 11/32 | . |
| MS24694C3 | -8R6 | 8-32 | 13/32 | . |
| MS24694C4 | -8R7 | 8-32 | 15/32 | . |
| MS24694C5 | -8R8 | 8-32 | 17/32 | . |
| MS24694C6 | -8R9 | 8-32 | 19/32 | . |
| MS24694C7 | -8R10 | 8-32 | 21/32 | . |
| MS24694C8 | -8R11 | 8-32 | 23/32 | . |
| MS24694C9 | -8R12 | 8-32 | 25/32 | . |
| MS24694C10 | -8R13 | 8-32 | 27/32 | . |
| MS24694C11 | -8R14 | 8-32 | 29/32 | . |
| MS24694C13 | -8R16 | 8-32 | 1-1/32 | . |
| MS24694C14 | -8R17 | 8-32 | 1-3/32 | . |
| MS24694C15 | -8R18 | 8-32 | 1-5/32 | . |
| MS24694C46 | -10R4 | 10-32 | 9/32 | . |
| MS24694C47 | -10R5 | 10-32 | 11/32 | . |
| MS24694C48 | -10R6 | 10-32 | 13/32 | . |

| MS Part No. | AN509C No. | Thread Size | Length Inches | Price ea. |
|-------------|------------|-------------|---------------|-----------|
| MS24694C49 | -10R7 | 10-32 | 15/32 | . |
| MS24694C50 | -10R8 | 10-32 | 17/32 | . |
| MS24694C51 | -10R9 | 10-32 | 19/32 | . |
| MS24694C52 | -10R10 | 10-32 | 21/32 | . |
| MS24694C53 | -10R11 | 10-32 | 23/32 | . |
| MS24694C54 | -10R12 | 10-32 | 25/32 | . |
| MS24694C55 | -10R13 | 10-32 | 27/32 | . |
| MS24694C56 | -10R14 | 10-32 | 29/32 | . |
| MS24694C57 | -10R15 | 10-32 | 31/32 | . |
| MS24694C58 | -10R16 | 10-32 | 1-1/32 | . |
| MS24694C59 | -10R17 | 10-32 | 1-3/32 | . |
| MS24694C60 | -10R18 | 10-32 | 1-5/32 | . |
| MS24694C61 | -10R19 | 10-32 | 1-7/32 | . |
| MS24694C62 | -10R20 | 10-32 | 1-9/32 | . |
| MS24694C92 | | 1/4-28 | 3/8 | . |

FILLISTER HEAD SCREWS - DRIVE SCREWS



AN500, AN501 DRILLED FILLISTER HEADSCREWS

AN500 (coarse thread) & AN501 (fine thread) slotted fillister head screws are fabricated from carbon steel. Tensile strength 60,000 PSI. Cadmium plated, Type II Class 3.
 * "A" IN DASH NO. DENOTES DRILLED HEAD

| AN500 (Coarse Thread) | | | | |
|-----------------------|------------------|--------------|-------------|------------|
| AN500 Dash No.* | MS35265 Dash No. | Length (In.) | Thread Size | Price Each |
| -A4-3 | MS35265-12 | 3/16 | 4-40 | . |
| -A4-4 | MS35265-13 | 1/4 | 4-40 | . |
| -A4-5 | MS35265-14 | 5/16 | 4-40 | . |
| -A4-6 | MS35265-15 | 1/4 | 4-40 | . |
| -A4-7 | MS35265-16 | 5/16 | 4-40 | . |
| -A4-8 | MS35265-17 | 1/4 | 4-40 | . |
| -A4-10 | MS35265-18 | 5/16 | 4-40 | . |
| -A4-12 | MS35265-19 | 1/4 | 4-40 | . |
| -A6-4 | MS35265-26 | 1/4 | 6-32 | . |
| -A6-5 | MS35265-27 | 5/16 | 6-32 | . |
| -A6-6 | MS35265-28 | 3/8 | 6-32 | . |
| -A6-7 | MS35265-29 | 7/16 | 6-32 | . |
| -A6-8 | MS35265-30 | 1/2 | 6-32 | . |
| -A6-10 | MS35265-31 | 5/8 | 6-32 | . |
| -A6-12 | MS35265-32 | 3/4 | 6-32 | . |
| -A6-14 | MS35265-33 | 7/8 | 6-32 | . |
| -A8-4 | MS35265-41 | 1/4 | 8-32 | . |
| -A8-5 | MS35265-42 | 5/16 | 8-32 | . |
| -A8-6 | MS35265-43 | 3/8 | 8-32 | . |
| -A8-7 | MS35265-44 | 7/16 | 8-32 | . |
| -A8-8 | MS35265-45 | 1/2 | 8-32 | . |
| -A8-10 | MS35265-46 | 5/8 | 8-32 | . |
| -A8-12 | MS35265-47 | 3/4 | 8-32 | . |
| -A8-14 | MS35265-48 | 7/8 | 8-32 | . |
| -A8-16 | MS35265-49 | 1 | 8-32 | . |
| -A10-4 | MS35265-59 | 1/4 | 10-24 | . |
| -A10-5 | MS35265-60 | 5/16 | 10-24 | . |
| -A10-6 | MS35265-61 | 3/8 | 10-24 | . |
| -A10-7 | MS35265-62 | 7/16 | 10-24 | . |
| -A10-8 | MS35265-63 | 1/2 | 10-24 | . |
| -A10-10 | MS35265-64 | 5/8 | 10-24 | . |
| -A10-12 | MS35265-65 | 3/4 | 10-24 | . |
| -A10-16 | MS35265-66 | 1 | 10-24 | . |
| -A416-8 | MS35265-79 | 1/2 | 1/4-20 | . |
| -A416-10 | MS35265-80 | 5/8 | 1/4-20 | . |
| -416-12 | MS35265-81 | 3/4 | 1/4-20 | . |
| AN501 (Fine Thread) | | | | |
| AN501 Dash No.* | MS35266 Dash No. | Length (In.) | Thread Size | Price Each |
| -8-12 | -47 | 3/4 | 8-36 | --- |
| -A10-4 | -59 | 1/4 | 10-32 | . |
| -A10-6 | -61 | 3/8 | 10-32 | . |
| -A10-8 | -63 | 1/2 | 10-32 | . |
| -A10-10 | -64 | 5/8 | 10-32 | . |
| -A10-12 | -65 | 3/4 | 10-32 | . |
| -A10-14 | -66 | 7/8 | 10-32 | . |
| -A10-16 | -67 | 1 | 10-32 | . |
| -A10-20 | -68 | 1-1/4 | 10-32 | . |

| AN500AD (Coarse Thread/Stainless Steel) | | | | |
|---|------------------|--------------|-------------|------------|
| AN500 Dash No.* | MS35275 Dash No. | Length (In.) | Thread Size | Price Each |
| -AD2-2 | -201 | 1/8 | 2/56 | . |
| -AD2-3 | -202 | 3/16 | 2/56 | . |
| -AD2-4 | -203 | 1/4 | 2/56 | . |
| -AD2-5 | -204 | 5/16 | 2/56 | . |
| -AD2-6 | -205 | 3/8 | 2/56 | . |
| -AD2-7 | -206 | 7/16 | 2/56 | . |
| -AD2-8 | -207 | 1/2 | 2/56 | . |
| -AD2-10 | -208 | 5/8 | 2/56 | . |
| -AD2-12 | -209 | 3/4 | 2/56 | . |
| -AD4-2 | -211 | 1/8 | 4-40 | . |
| -AD4-3 | -212 | 3/16 | 4-40 | . |
| -AD4-4 | -213 | 1/4 | 4-40 | . |
| -AD4-6 | -215 | 3/8 | 4-40 | . |
| -AD4-7 | -216 | 7/16 | 4-40 | . |
| -AD4-8 | -217 | 1/2 | 4-40 | . |
| -AD4-10 | -218 | 5/8 | 4-40 | . |
| -AD4-12 | -219 | 3/4 | 4-40 | . |
| -AD4-14 | -220 | 7/8 | 4-40 | . |
| -AD4-16 | -221 | 1 | 4-40 | . |
| -AD6-4 | -226 | 1/4 | 6-32 | . |
| -AD6-5 | -227 | 5/16 | 6-32 | . |
| -AD6-6 | -228 | 3/8 | 6-32 | . |
| -AD6-7 | -229 | 7/16 | 6-32 | . |
| -AD6-8 | -230 | 1/2 | 6-32 | . |
| -AD6-10 | -231 | 5/8 | 6-32 | . |
| -AD6-12 | -232 | 3/4 | 6-32 | . |
| -AD6-14 | -233 | 7/8 | 6-32 | . |
| -AD6-16 | -234 | 1 | 6-32 | . |
| -AD8-5 | -242 | 5/16 | 8-32 | . |
| -AD8-6 | -243 | 3/8 | 8-32 | . |
| -AD8-7 | -244 | 7/16 | 8-32 | . |
| -AD8-8 | -245 | 1/2 | 8-32 | . |
| -AD8-10 | -246 | 5/8 | 8-32 | . |
| -AD8-12 | -247 | 3/4 | 8-32 | . |
| -AD8-14 | -248 | 7/8 | 8-32 | . |
| -AD8-16 | -249 | 1 | 8-32 | . |
| AN501AD (Fine Thread/Stainless Steel) | | | | |
| AN501 Dash No.* | MS35276 Dash No. | Length (In.) | Thread Size | Price Each |
| -AD10-5 | -260 | 5/16 | 10-32 | . |
| -AD10-6 | -261 | 3/8 | 10-32 | . |
| -AD10-7 | -262 | 7/16 | 10-32 | . |
| -AD10-8 | -263 | 1/2 | 10-32 | . |
| -AD10-10 | -264 | 5/8 | 10-32 | . |
| -AD10-12 | -265 | 3/4 | 10-32 | . |
| -AD10-14 | -266 | 7/8 | 10-32 | . |
| -AD10-16 | -267 | 1 | 10-32 | . |

HA



AN502, AN503 FILLISTER HEAD SCREWS

AN502 (fine thread) and AN503 (coarse thread) drilled head, slotted fillister head screws are fabricated from steel meeting specification MIL-S-6050. Tensile strength 125,000 PSI. Cadmium plated, Type I, Class 3.

AN502 (FINE THREAD)

| AN502 Dash No.* | Length (In.) | Thread Size | Price Each | AN502 Dash No.* | Length (In.) | Thread Size | Price Each |
|-----------------|--------------|-------------|------------|-----------------|--------------|-------------|------------|
| -10-5 | 5/16 | 10-32 | . | -10-12 | 3/4 | 10-32 | . |
| -10-6 | 3/8 | 10-32 | . | -10-16 | 1 | 10-32 | . |
| -10-8 | 1/2 | 10-32 | . | -416-12 | 3/4 | 1/4-28 | . |
| -10-10 | 5/8 | 10-32 | . | -416-16 | 1 | 1/4-28 | . |

AN503 (COARSE THREAD)

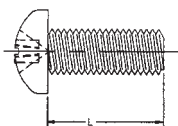
| AN503 Dash No.* | Length (In.) | Thread Size | Price Each | AN503 Dash No.* | Length (In.) | Thread Size | Price Each |
|-----------------|--------------|-------------|------------|-----------------|--------------|-------------|------------|
| -6-4 | 1/4 | 6-32 | . | -10-6 | 3/8 | 10-24 | . |
| -6-6 | 3/8 | 6-32 | . | -10-8 | 1/2 | 10-24 | . |
| -8-4 | 1/4 | 8-32 | . | -10-10 | 5/8 | 10-24 | . |
| -8-6 | 3/8 | 8-32 | . | -10-12 | 3/4 | 10-24 | . |
| -8-8 | 1/2 | 8-32 | . | -10-16 | 1 | 10-24 | . |
| -8-10 | 5/8 | 8-32 | . | -10-24 | 1-1/2 | 10-24 | . |
| -8-16 | 1 | 8-32 | . | -416-8 | 1/2 | 1/4-20 | . |
| | | | | -416-10 | 5/8 | 1/4-20 | . |
| | | | | -416-12 | 3/4 | 1/4-20 | . |

ALLOY/STRUCTURAL — MACHINE SCREWS

NAS600 - NAS603 MACHINE SCREWS



| Thread | Length | Part No. | Price Ea. | |
|--------|------------|------------|-----------|---|
| 4-40 | .188 | NAS600-3P | . | |
| | .250 | NAS600-4P | . | |
| | .312 | NAS600-5P | . | |
| | .375 | NAS600-6P | . | |
| | .438 | NAS600-7P | . | |
| | .500 | NAS600-8P | . | |
| 6-32 | .188 | NAS601-3P | . | |
| | .250 | NAS601-4P | . | |
| | .312 | NAS601-5P | . | |
| | .375 | NAS601-6P | . | |
| | .438 | NAS601-7P | . | |
| | .500 | NAS601-8P | . | |
| | .562 | NAS601-9P | . | |
| | .625 | NAS601-10P | . | |
| | .750 | NAS601-12P | . | |
| | 8-32 | .188 | NAS602-3P | . |
| | | .250 | NAS602-4P | . |
| | | .312 | NAS602-5P | . |
| .375 | | NAS602-6P | . | |
| .438 | | NAS602-7P | . | |
| .500 | | NAS602-8P | . | |
| .562 | | NAS602-9P | . | |
| .625 | | NAS602-10P | . | |
| .688 | | NAS602-11P | . | |
| .750 | | NAS602-12P | . | |
| .813 | | NAS602-13P | . | |
| .875 | | NAS602-14P | . | |
| 1.00 | | NAS602-16P | . | |
| 10-32 | | .250 | NAS603-4P | . |
| | | .312 | NAS603-5P | . |
| | | .375 | NAS603-6P | . |
| | | .438 | NAS603-7P | . |
| | | .500 | NAS603-8P | . |
| | .562 | NAS603-9P | . | |
| | .625 | NAS603-10P | . | |
| | .688 | NAS603-11P | . | |
| | .750 | NAS603-12P | . | |
| | .813 | NAS603-13P | . | |
| | .875 | NAS603-14P | . | |
| | .938 | NAS603-15P | . | |
| 1.00 | NAS603-16P | . | | |
| 1.125 | NAS603-18P | . | | |
| 1.25 | NAS603-20P | . | | |



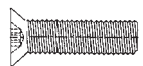
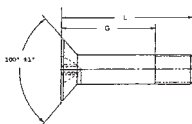
- Phillips Pan Head
- Alloy Steel (8740)
- Finish - Cadmium per QQ-P-416
- Tensile -160,000 - 180,000 PSI

NAS1202 / NAS1203 FLUSH HEAD SCREWS

- Phillips 100° Flat Head
- Tensile - 160,000 - 180,000 PSI
- Alloy Steel Per MIL-S-6049 • Finish - Cadmium per QQ-P-416, Type II



| Thrd. | Grip | Lgth. | Part No. | Price Ea. |
|-------|-------|-------|-----------|-----------|
| 8-32 | .125 | .401 | NAS1202-2 | . |
| | .188 | .464 | NAS1202-3 | . |
| | .250 | .526 | NAS1202-4 | . |
| | .312 | .588 | NAS1202-5 | . |
| | .375 | .651 | NAS1202-6 | . |
| | 10-32 | .125 | .401 | NAS1203-2 |
| .188 | | .464 | NAS1203-3 | . |
| .250 | | .526 | NAS1203-4 | . |
| .312 | | .588 | NAS1203-5 | . |
| .375 | | .651 | NAS1203-6 | . |
| .438 | | .714 | NAS1203-7 | . |
| .500 | | .776 | NAS1203-8 | . |



MS5199 MACHINE SCREWS

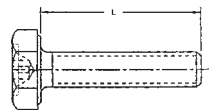
- Phillips 82° Flat Head • Stainless Steel

| Thrd. | Lgth. | Part No. | Each | Thrd. | Lgth. | Part No. | Each |
|-------|-------|------------|------|-------|------------|------------|------|
| 2-56 | .188 | MS51959-2 | . | 6-32 | .312 | MS51959-27 | . |
| | .250 | MS51959-3 | . | | .375 | MS51959-28 | . |
| | .312 | MS51959-4 | . | | .438 | MS51959-29 | . |
| | .375 | MS51959-5 | . | | .500 | MS51959-30 | . |
| | .250 | MS51959-13 | . | | .625 | MS51959-31 | . |
| 4-40 | .312 | MS51959-14 | . | 8-32 | .375 | MS51959-43 | . |
| | .375 | MS51959-15 | . | | .438 | MS51959-44 | . |
| | .438 | MS51959-16 | . | | .500 | MS51959-45 | . |
| | .500 | MS51959-17 | . | | .625 | MS51959-46 | . |
| | | | | .750 | MS51959-47 | . | |

NAS1096 HEX HEAD SCREWS



| Thread | Length | Part No. | Price Ea. |
|--------|--------|--------------|-----------|
| 6-32 | .375 | NAS1096-1-6 | . |
| | .438 | NAS1096-1-7 | . |
| | .500 | NAS1096-1-8 | . |
| | .562 | NAS1096-1-9 | . |
| | .625 | NAS1096-1-10 | . |
| | .750 | NAS1096-1-12 | . |
| 8-32 | .312 | NAS1096-2-5 | . |
| | .375 | NAS1096-2-6 | . |
| | .438 | NAS1096-2-7 | . |
| | .500 | NAS1096-2-8 | . |
| | .562 | NAS1096-2-9 | . |
| | .625 | NAS1096-2-10 | . |
| 10-32 | .750 | NAS1096-2-12 | . |
| | .312 | NAS1096-3-5 | . |
| | .375 | NAS1096-3-6 | . |
| | .438 | NAS1096-3-7 | . |
| | .500 | NAS1096-3-8 | . |
| | .562 | NAS1096-3-9 | . |
| | .625 | NAS1096-3-10 | . |
| | .750 | NAS1096-3-12 | . |
| | .875 | NAS1096-3-14 | . |
| | 1.00 | NAS1096-3-16 | . |
| | 1.25 | NAS1096-3-20 | . |

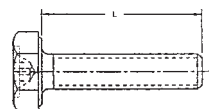


- Phillips Hex Head
- Alloy Steel per MIL-S-6049
- Finish - Cadmium per QQ-P-416 Type II
- Tensile - 125,000-145,000 PSI

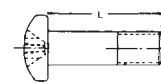
NAS1801 HEX HEAD SCREWS



| Thread | Length | Part No. | Price Ea. | |
|--------|--------------|---------------|-------------|---|
| 8-32 | .250 | NAS1801-08-4 | . | |
| | .312 | NAS1801-08-5 | . | |
| | .375 | NAS1801-08-6 | . | |
| | .438 | NAS1801-08-7 | . | |
| | .500 | NAS1801-08-8 | . | |
| | .562 | NAS1801-08-9 | . | |
| | .625 | NAS1801-08-10 | . | |
| | .750 | NAS1801-08-12 | . | |
| | .875 | NAS1801-08-14 | . | |
| | 1.00 | NAS1801-08-16 | . | |
| | 1.125 | NAS1801-08-18 | . | |
| | 1.25 | NAS1801-08-20 | . | |
| | 1.375 | NAS1801-08-22 | . | |
| | 10-32 | .312 | NAS1801-3-5 | . |
| | | .375 | NAS1801-3-6 | . |
| | | .438 | NAS1801-3-7 | . |
| | | .500 | NAS1801-3-8 | . |
| | | .562 | NAS1801-3-9 | . |
| .625 | | NAS1801-3-10 | . | |
| .750 | | NAS1801-3-12 | . | |
| .875 | | NAS1801-3-14 | . | |
| 1.00 | | NAS1801-3-16 | . | |
| 1.125 | | NAS1801-3-18 | . | |
| 1.25 | | NAS1801-3-20 | . | |
| 1.375 | | NAS1801-3-22 | . | |
| 1.50 | NAS1801-3-24 | . | | |



- Phillips Hex Head
- Alloy Steel Per MIL-S-6049
- Finish - Cad Plate per QQ-P-416, Type II
- Tensile - 160,000-185,000 PSI



NAS623 PAN HEAD SCREWS

- Phillips Pan Head • Alloy Steel per MIL-S-6049
- Finish: Cadmium per QQ-P-416, Type II
- Tensile: 160,000-180,000 PSI

| Thrd. | Lgth. | Part No. | Each | Thrd. | Lgth. | Part No. | Each |
|-------|-------|-------------|------|-------|-------------|-------------|------|
| 8-32 | .338 | NAS623-2-1 | . | 10-32 | .588 | NAS623-3-5 | . |
| | .401 | NAS623-2-2 | . | | .651 | NAS623-3-6 | . |
| | .464 | NAS623-2-3 | . | | .714 | NAS623-3-7 | . |
| | .526 | NAS623-2-4 | . | | .776 | NAS623-3-8 | . |
| | .588 | NAS623-2-5 | . | | .838 | NAS623-3-9 | . |
| | .651 | NAS623-2-6 | . | | .901 | NAS623-3-10 | . |
| | .714 | NAS623-2-7 | . | | .964 | NAS623-3-11 | . |
| | .776 | NAS623-2-8 | . | | 1.026 | NAS623-3-12 | . |
| | .838 | NAS623-2-9 | . | | 1.088 | NAS623-3-13 | . |
| | .901 | NAS623-2-10 | . | | 1.151 | NAS623-3-14 | . |
| | .964 | NAS623-2-11 | . | | 1.214 | NAS623-3-15 | . |
| | 1.026 | NAS623-2-12 | . | | 1.276 | NAS623-3-16 | . |
| 10-32 | .401 | NAS623-3-2 | . | 1.338 | NAS623-3-17 | . | |
| | .464 | NAS623-3-3 | . | 1.401 | NAS623-3-18 | . | |
| | .526 | NAS623-3-4 | . | | | | |

HA

SHEET METAL SCREWS

TRUSS HEAD TYPE A STAINLESS



| Size | Length | Phillips | | Slotted | |
|------|--------|----------|------------|----------|------------|
| | | Part No. | Price Each | Part No. | Price Each |
| 4 | 1/4 | T4X4 | . | TS4X4 | . |
| | 3/8 | T4X6 | . | TS4X6 | . |
| | 1/2 | T4X8 | . | TS4X8 | . |
| 6 | 1/4 | T6X4 | . | TS6X4 | . |
| | 3/8 | T6X6 | . | TS6X6 | . |
| | 1/2 | T6X8 | . | TS6X8 | . |
| | 5/8 | T6X10 | . | TS6X10 | . |
| | 3/4 | T6X12 | . | TS6X12 | . |
| | 1 | T6X16 | . | TS6X16 | . |
| 8 | 3/8 | T8X6 | . | TS8X6 | --- |
| | 1/2 | T8X8 | . | TS8X8 | . |
| | 5/8 | T8X10 | . | TS8X10 | . |
| | 3/4 | T8X12 | . | TS8X12 | . |
| | 1 | T8X16 | . | TS8X16 | . |
| 10 | 1-1/4 | T8X20 | . | TS8X20 | . |
| | 3/8 | T10X6 | . | TS10X6 | . |
| | 1/2 | T10X8 | . | TS10X8 | . |
| | 5/8 | T10X10 | . | TS10X10 | . |
| | 3/4 | T10X12 | . | TS10X12 | . |
| | 1 | T10X16 | . | TS10X16 | . |
| | 1-1/4 | T10X20 | . | TS10X20 | . |

HA

TRUSS HEAD TYPE B PHILLIPS STAINLESS



| Size | Length | P/N | Price | Size | Length | P/N | Price |
|------|----------|----------|-------|----------|----------|----------|-------|
| 4 | 1/4 | 04-00164 | . | 8 | 3/8 | 04-00174 | . |
| | 3/8 | 04-00166 | . | | 1/2 | T8X8B | . |
| | 1/2 | 04-00167 | . | | 5/8 | 04-00007 | . |
| | | | 3/4 | | 04-00176 | . | |
| 6 | 1/4 | 04-00168 | . | 1 | 04-00177 | . | |
| | 3/8 | 04-00169 | . | 10 | 3/8 | 04-00178 | . |
| | 1/2 | T6X8B | . | | 1/2 | T10X8B | . |
| | 5/8 | 04-00171 | . | | 5/8 | 04-00008 | . |
| | 3/4 | 04-00172 | . | | 3/4 | 04-00179 | . |
| 1 | 04-00173 | . | 1 | 04-00181 | . | | |

82° OVAL HEAD TYPE A, PHILLIPS (FOR UPHOLSTERY)



| Size | Length | Stainless P/N | Price Ea | Zinc P/N | Price Ea |
|------|--------|---------------|----------|----------|----------|
| 4 | 1/4 | O4X4 | . | O4X4Z | --- |
| | 3/8 | O4x6 | . | O4X6Z | . |
| | 1/2 | O4X8 | . | O4X8Z | . |
| | 5/8 | O4X10 | . | O4X10Z | . |
| 6 | 3/8 | O6X6 | . | O6X6Z | . |
| | 1/2 | O6X8 | . | O6X8Z | . |
| | 5/8 | O6X10 | . | O6X10Z | . |
| | 3/4 | O6X12 | . | O6X12Z | . |
| | 1 | O6X16 | . | O6X16Z | --- |
| 8 | 3/8 | O8X6 | . | O8X6Z | . |
| | 1/2 | O8X8 | . | O8X8Z | . |
| | 5/8 | O8X10 | . | O8X10Z | . |
| | 3/4 | O8X12 | . | O8X12Z | . |
| | 1 | O8X16 | . | O8X16Z | . |
| 10 | 1/2 | O10X8 | . | O10X8Z | . |
| | 3/4 | O10X12 | . | O10X12Z | . |

100° FLAT HEAD TYPE A, PHILLIPS, STAINLESS



| Size | Length | Part No. | Price Ea. |
|------|--------|----------|-----------|
| 6 | 1/2 | C6X8 | . |
| 8 | 1/2 | C8X8 | . |
| 10 | 1/2 | C10X8 | . |

AN530 ROUND HEAD Use slot- ted type for antiques.



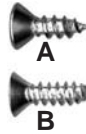
| Size | SLOTTED | | PHILLIPS | |
|--------|---------|-----------------|----------|-----------------|
| | Price | P/N AN530 Dash# | Price | P/N AN530 Dash# |
| 4X1/4 | --- | --- | . | 4R4 |
| 4X3/8 | . | -4-6 | --- | N/A |
| 4X1/2 | --- | --- | . | 4R8 |
| 6X3/8 | --- | -6-6 | . | 6R6 |
| 6X1/2 | --- | -6-8 | . | 6R8 |
| 6X5/8 | --- | --- | . | 6R10 |
| 6X3/4 | --- | -6-12 | . | 6R12 |
| 8X3/8 | --- | --- | . | 8R6 |
| 8X1/2 | --- | --- | . | 8R8 |
| 10X1/2 | --- | 10-8 | . | 10R8 |
| 10X1 | --- | --- | . | 10R16 |

ZINC-PLATED, TRUSS HEAD TYPE A & TYPE B



| Size | Length | Phillips | | | Slotted | |
|------|--------|-----------------|-----------------|------------|-----------------|------------|
| | | Part No. Type A | Part No. Type B | Price Each | Part No. Type A | Price Each |
| 4 | 1/4 | THA4X4 | THB4X4 | . | THA4-4 | --- |
| 4 | 3/8 | THA4X6 | THB4X6 | . | THA4-6 | . |
| 4 | 1/2 | THA4X8 | THB4X8 | . | THA4-8 | . |
| 4 | 5/8 | THA4X10 | THB4X10 | . | THA4-10 | . |
| 4 | 3/4 | THA4X12 | THB4X12 | . | THA4-12 | . |
| 4 | 7/8 | THA4X14 | ----- | ---- | ----- | ---- |
| 6 | 3/8 | THA6X6 | THB6X6 | . | THA6-6 | . |
| 6 | 1/2 | THA6X8 | THB6X8 | . | THA6-8 | . |
| 6 | 5/8 | THA6X10 | THB6X10 | . | THA6-10 | . |
| 6 | 3/4 | THA6X12 | THB6X12 | . | THA6-12 | . |
| 8 | 3/8 | THA8X6 | THB8X6 | . | THA8-6 | . |
| 8 | 1/2 | THA8X8 | THB8X8 | . | THA8-8 | . |
| 8 | 5/8 | THA8X10 | THB8X10 | . | THA8-10 | --- |
| 8 | 3/4 | THA8X12 | THB8X12 | . | THA8-12 | --- |
| 8 | 1 | THA8X16 | THB8X16 | . | THA8-16 | . |
| 10 | 1/2 | THA10X8 | THB10X8 | . | THA10-8 | . |
| 10 | 5/8 | THA10X10 | THB10X10 | . | THA10-10 | --- |
| 10 | 3/4 | THA10X12 | THB10X12 | . | THA10-12 | . |
| 10 | 1 | THA10X16 | THB10X16 | . | THA10-16 | . |

ZINC-PLATED, 82° FLAT HEAD TYPE A ZINC-PLATED STEEL (Use slotted screws for antiques)



| Size | Length | Phillips | | | Slotted | |
|------|--------|-----------------|-----------------|------------|-----------------|------------|
| | | Part No. Type A | Part No. Type B | Price Each | Part No. Type A | Price Each |
| 4 | 1/4 | FHA4X4 | FHB4X4 | . | FHA4-4 | --- |
| 4 | 3/8 | FHA4X6 | FHB4X6 | . | FHA4-6 | --- |
| 4 | 1/2 | FHA4X8 | FHB4X8 | . | FHA4-8 | --- |
| 4 | 5/8 | FHA4X10 | FHB4X10 | --- | FHA4-10 | --- |
| 4 | 3/4 | FHA4X12 | FHB4X12 | --- | FHA4-12 | --- |
| 6 | 3/8 | FHA6X6 | FHB6X6 | . | FHA6-6 | . |
| 6 | 1/2 | FHA6X8 | FHB6X8 | . | FHA6-8 | --- |
| 6 | 5/8 | FHA6X10 | FHB6X10 | . | FHA6-10 | . |
| 6 | 3/4 | FHA6X12 | FHB6X12 | . | FHA6-12 | --- |
| 8 | 3/8 | FHA8X6 | FHB8X6 | . | FHA8-6 | --- |
| 8 | 1/2 | FHA8X8 | FHB8X8 | . | FHA8-8 | . |
| 8 | 5/8 | FHA8X10 | FHB8X10 | . | FHA8-10 | . |
| 8 | 3/4 | FHA8X12 | FHB8X12 | . | FHA8-12 | --- |
| 8 | 1 | FHA8X16 | FHB8X16 | . | FHA8-16 | . |
| 10 | 1/2 | FHA10X8 | FHB10X8 | . | FHA10-8 | . |
| 10 | 5/8 | FHA10X10 | FHB10X10 | . | FHA10-10 | . |
| 10 | 3/4 | FHA10X12 | FHB10X12 | --- | THA10-12 | . |

100° FLAT HEAD TYPE B, PHILLIPS, STAINLESS



| Size | Length | Part No. | Price Ea |
|------|--------|---------------|----------|
| 6 | 1/2 | MS21207-C6-8 | . |
| 8 | 1/2 | MS21207-C8-8 | . |
| 8 | 5/8 | MS21207-C8-10 | . |
| 10 | 1/2 | MS21207-C10-8 | . |

FUEL TANK STRUCTURAL STAINLESS SCREW KITS (PER TANK)

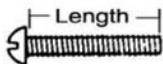
| Aircraft Model | Part No. | Price |
|--|----------|-------|
| Cessna 150/152 (Standard) | 04-01005 | . |
| Cessna 150/152 (Long Range) | 04-01004 | . |
| Cessna 172 | 04-01003 | . |
| Piper PA28 Cherokee (Standard) | 04-01002 | . |
| Piper PA28 Cherokee (Long Range) | 04-01001 | . |
| Cessna 150 Aerobat | 04-01006 | . |
| Cessna 150/152 (67-77) | 04-01008 | . |
| Cessna 170AF | 04-01009 | . |
| Cessna 182F | 04-01011 | . |
| Piper Cherokee 140/150/160/180/235 (Cad. Plated) | 04-01015 | . |

MACHINE SCREWS

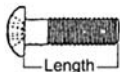
BRASS INSTRUMENT SCREWS

Use brass screws for all panel installations to eliminate magnetic interference. All brass screws are coated in black oxide.

AN515 & AN520 ROUND HEAD SCREWS

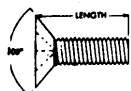


| Part Number | Length (In.) | Thread Size | Price Each |
|-----------------------|--------------|-------------|------------|
| AN515B6R8 (Recessed) | 1/2 | 6-32 | . |
| AN515B6-12 (Slot) | 3/4 | 6-32 | . |
| AN515B6R12 (Recessed) | 3/4 | 6-32 | . |
| AN515B8-16 (Slot) | 1 | 8-32 | . |
| AN515B10-16 (Slot) | 1 | 10-24 | . |



MS35214 & MS35215 PAN HEAD SCREWS

| Part No. | Length | Thread | Price | Part No. | Length | Thread | Price |
|------------|--------|--------|-------|------------|--------|--------|-------|
| MS35214-12 | 1/4" | 4-40 | . | MS35214-40 | 3/8" | 8-32 | . |
| MS35214-13 | 5/16" | 4-40 | . | MS35214-41 | 7/16" | 8-32 | . |
| MS35214-14 | 3/8" | 4-40 | . | MS35214-42 | 1/2" | 8-32 | . |
| MS35214-15 | 7/16" | 4-40 | . | MS35214-43 | 5/8" | 8-32 | . |
| MS35214-16 | 1/2" | 4-40 | . | MS35214-44 | 3/4" | 8-32 | . |
| MS35214-18 | 3/4" | 4-40 | . | MS35214-45 | 7/8" | 8-32 | . |
| MS35214-23 | 1/4" | 6-32 | . | MS35214-46 | 1" | 8-32 | . |
| MS35214-24 | 5/16" | 6-32 | . | MS35214-47 | 1-1/4" | 8-32 | . |
| MS35214-26 | 7/16" | 6-32 | . | MS35214-48 | 1-1/2" | 8-32 | . |
| MS35214-27 | 1/2" | 6-32 | . | MS35214-59 | 1" | 10-24 | . |
| MS35214-28 | 5/8" | 6-32 | . | MS35215-53 | 3/8" | 10-32 | . |
| MS35214-29 | 3/4" | 6-32 | . | MS35215-55 | 1/2" | 10-32 | . |
| MS35214-30 | 7/8" | 6-32 | . | MS35215-56 | 5/8" | 10-32 | . |
| MS35214-31 | 1" | 6-32 | . | MS35215-57 | 3/4" | 10-32 | . |
| MS35214-32 | 1-1/4" | 6-32 | . | MS35215-59 | 1" | 10-32 | . |
| MS35214-33 | 1-1/2" | 6-32 | . | MS35215-60 | 1-1/4" | 10-32 | . |



MS24693 FLAT HEAD SCREWS (RECESSED)

| Part Number | Length | Thread | Price | Part Number | Length | Thread | Price |
|-------------|--------|--------|-------|--------------|--------|--------|-------|
| MS24693BB2 | .250 | 4-40 | . | MS24693BB32 | 1.00 | 6-32 | . |
| MS24693BB3 | .312 | 4-40 | . | MS24693BB33 | 1.13 | 6-32 | . |
| MS24693BB4 | .375 | 4-40 | . | MS24693BB34 | 1.25 | 6-32 | . |
| MS24693BB5 | .438 | 4-40 | . | MS24693BB36 | 1.50 | 6-32 | . |
| MS24693BB6 | .500 | 4-40 | . | MS24693BB48 | .375 | 8-32 | . |
| MS24693BB7 | .625 | 4-40 | . | MS24693BB50 | .500 | 8-32 | . |
| MS24693BB24 | .250 | 6-32 | . | MS24693BB51 | .625 | 8-32 | . |
| MS24693BB25 | .312 | 6-32 | . | MS24693BB54 | 1 | 8-32 | . |
| MS24693BB26 | .375 | 6-32 | . | MS24693BB56 | 1.25 | 8-32 | . |
| MS24693BB27 | .438 | 6-32 | . | MS24693BB272 | .500 | 10-32 | . |
| MS24693BB28 | .500 | 6-32 | . | MS24693BB273 | .625 | 10-32 | . |
| MS24693BB29 | .625 | 6-32 | . | MS24693BB274 | .750 | 10-32 | . |
| MS24693BB30 | .750 | 6-32 | . | MS24693BB276 | 1.00 | 10-32 | . |
| MS24693BB31 | .875 | 6-32 | . | MS24693BB278 | 1.25 | 10-32 | . |

STAINLESS STEEL SCREW, WASHER & STOP NUT ASSORTMENT

This 2400 piece assortment is ideal for aircraft homebuilders, owners, mechanics and FBO's. It is packaged in a handy divided storage kit and contains 2100 stainless steel screws and washers and 300 stop nuts. Kit contains 100 each of the following:

NON-STRUCTURAL MACHINE SCREWS

| Countersunk Flat Head | Truss Head |
|-----------------------|---------------|
| AN507C632R8 | AN526C632R8 |
| AN507C832R8 | AN526C832R8 |
| AN507C832R10 | AN526C832R10 |
| AN507C1032R8 | AN526C1032R8 |
| AN507C1032R10 | AN526C1032R10 |

ELASTIC STOP NUTS

AN365C632
AN365C832
AN365C1032

WASHERS

Tinnerman Countersunk
A3135- SS- 017 (#8)
A3235- SS- 020 (#10)
Flat: AN960C6
AN960C8 or AN960C10

SHEET METAL SCREWS

Truss Head Phillips, Type A (Sharp Point)
4R x 1/2 8R x 1/2
6R x 3/8 8R x 5/8
6R x 1/2 10R x 1/2

STAINLESS STEEL HARDWARE ASSORTMENT

P/N 04-05000

INDIVIDUAL AIRPLANE EXTERIOR STAINLESS TRIM SCREW AND WASHER KITS

These kits do not include any structural screws.

| Aircraft Type | # of Pieces | P/N | Price |
|-------------------------|-------------|----------|-------|
| BEECHCRAFT | | | |
| Baron | 1310 | 04-04400 | . |
| Bonanza | 675 | 04-04300 | . |
| Musketeer/Sport | 615 | 04-04350 | . |
| Slowdowner | 615 | 04-04350 | . |
| BELLANCA | | | |
| Citabria | 248 | 04-00990 | . |
| Viking | - | 04-00880 | . |
| CESSNA | | | |
| 120/140 | 310 | 04-01200 | . |
| 150/152 | 355 | 04-01000 | . |
| 170 | 310 | 04-01200 | . |
| 170-B | 310 | 04-01200 | . |
| 172/172 Skyhawk | 410 | 04-01100 | . |
| 172RG | 330 | 04-01400 | . |
| 172 XP | 520 | 04-01300 | . |
| 175 | 450 | 04-01500 | . |
| 177/177RG Cardinal | 600 | 04-01600 | . |
| 180/185 Skywagon | 530 | 04-01700 | . |
| 182/182RG Skylane | 580 | 04-01900 | . |
| 188 Agwagon | 775 | 04-02000 | . |
| 190/195 | 370 | 04-02100 | . |
| 205 | 510 | 04-02200 | . |
| 206-208 Stationair | 555 | 04-02300 | . |
| 210 Centurion | 630 | 04-02400 | . |
| 310 (before 1963) | 1110 | 04-02410 | . |
| 310 (1963 & up) | - | 04-02500 | . |
| 335/340 | 1492 | 04-02510 | . |
| 336/337 | 1347 | 04-02700 | . |
| 337 Super Skymaster | - | 04-02710 | . |
| 401/402 | 1468 | 04-00401 | . |
| 411/414/421 | 1342 | 04-02750 | . |
| 421 | 1580 | 04-02800 | . |
| COMMANDER - Lark/Darter | - | 04-04510 | . |
| ERCOUPE - 415C/Forney | 525 | 04-04900 | . |
| GRUMMAN | | | |
| AA1A/AA1B | 490 | 04-04600 | . |
| Ag Cat | 515 | 04-04800 | . |
| Cheetah/Tiger | 975 | 04-04700 | . |
| LAKE - Amphibian | 265 | 04-04710 | . |
| PIPER | | | |
| Aerostar | - | 04-04720 | . |
| Apache | - | 04-04730 | . |
| Arrow | 615 | 04-03800 | . |
| Arrow III | 590 | 04-03810 | . |
| Aztec | 1050 | 04-03200 | . |
| Cherokee | 570 | 04-03600 | . |
| 140/150/160/180/235 | | | |
| Cherokee Six | 455 | 04-04000 | . |
| Comanche (Single) | 485 | 04-03300 | . |
| Comanche (Twin) | 800 | 04-03900 | . |
| J-3 Cub | - | 04-03910 | . |
| Navajo | 2065 | 04-03920 | . |
| Pawnee | 1965 | 04-03400 | . |
| PA28 Arrow (Fat Wing) | 615 | 04-03800 | . |
| PA28 Challenger/Archer | 670 | 04-03500 | . |
| PA28R Arrow (Tap. Wing) | 590 | 04-03810 | . |
| PA32R Lance | 685 | 04-04010 | . |
| Seneca I & II | 1415 | 04-04100 | . |
| Super Cub | - | 04-04110 | . |
| Tomahawk | 440 | 04-04200 | . |
| Tripacer/Colt | 360 | 04-03100 | . |
| Warrior/Archer | 480 | 04-03700 | . |
| PITTS - S2A | 640 | 04-03710 | . |
| ROCKWELL - 12/114 | 570 | 04-03720 | . |
| MOONEY | | | |
| 68, 77, 78 | 1240 | 04-02900 | . |
| 201/231 | 970 | 04-03050 | . |
| M20C | 1022 | 04-02820 | . |
| M20-C 69, 76 | - | 04-03000 | . |
| M20E/G (up to 1976) | - | 04-02830 | . |
| M20E/G (1977 & up) | - | 04-02840 | . |
| M20F | - | 04-02850 | . |

HA

SOCKET HEAD CAP SCREWS

SOCKET HEAD CAP SCREW STAINLESS STEEL-DRILLED



COARSE THREADED

| PART NO. | MS NO. | THREAD | LENGTH | PRICE |
|---------------|-----------|--------|--------|-------|
| NAS1352C04H4 | | 4-40 | 1/4" | . |
| NAS1352C04H6 | | 4-40 | 3/8" | . |
| NAS1352C06H6 | MS24674-2 | 6-32 | 3/8" | . |
| NAS1352C06H8 | MS24674-3 | 6-32 | 1/2" | . |
| NAS1352C08H6 | MS24674-7 | 8-32 | 3/8" | . |
| NAS1352C08H8 | MS24674-8 | 8-32 | 1/2" | . |
| NAS1352C08H10 | MS24674-9 | 8-32 | 5/8" | . |

FINE THREADED

| PART NO. | MS NO. | THREAD | LENGTH | PRICE |
|--------------|------------|---------|--------|-------|
| NAS1351C3H6 | MS24673-1 | 10-32 | 3/8" | . |
| NAS1351C3H8 | MS24673-2 | 10-32 | 1/2" | . |
| NAS1351C3H10 | MS24673-3 | 10-32 | 5/8" | . |
| NAS1351C4H10 | MS24673-10 | 1/4"-28 | 5/8" | . |
| NAS1351C4H12 | MS24673-11 | 1/4"-28 | 3/4" | . |
| NAS1351C4H14 | MS24673-12 | 1/4"-28 | 7/8" | . |
| NAS1351C4H16 | MS24673-13 | 1/4"-28 | 1" | . |

SOCKET HEAD CAP SCREW STAINLESS STEEL-UNDRILLED



COARSE THREADED

| PART NO. | MS NO. | THREAD | LENGTH | PRICE |
|---------------|------------|--------|--------|-------|
| NAS1352C04-4 | MS16995-9 | 4-40 | 1/4" | . |
| NAS1352C04-8 | MS16995-11 | 4-40 | 1/2" | . |
| NAS1352C06-4 | MS16995-16 | 6-32 | 1/4" | . |
| NAS1352C06-6 | MS16995-17 | 6-32 | 3/8" | . |
| NAS1352C06-8 | MS16995-18 | 6-32 | 1/2" | . |
| NAS1352C06-10 | MS16995-19 | 6-32 | 5/8" | . |
| NAS1352C08-6 | MS16995-25 | 8-32 | 3/8" | . |
| NAS1352C08-8 | MS16995-26 | 8-32 | 1/2" | . |
| NAS1352C08-10 | MS16995-27 | 8-32 | 5/8" | . |
| NAS1352C08-12 | MS16995-28 | 8-32 | 3/4" | . |

FINE THREADED

| PART NO. | MS NO. | THREAD | LENGTH | PRICE |
|--------------|------------|--------|--------|-------|
| NAS1351C3-6 | MS16996-9 | 10-32 | 3/8" | . |
| NAS1351C3-8 | MS16996-10 | 10-32 | 1/2" | . |
| NAS1351C3-10 | MS16996-11 | 10-32 | 5/8" | . |
| NAS1351C3-12 | MS16996-12 | 10-32 | 3/4" | . |
| NAS1351C4-10 | MS16996-22 | 1/4-28 | 5/8" | . |
| NAS1351C4-12 | MS16996-23 | 1/4-28 | 3/4" | . |
| NAS1351C4-16 | MS16996-24 | 1/4-28 | 1" | . |

SOCKET HEAD CAP SCREW ALLOY STEEL-DRILLED



COARSE THREADED

| PART NO. | MS NO. | THREAD | LENGTH | PRICE |
|----------------|------------|--------|--------|-------|
| NAS1352-04H4P | MS24677-1 | 4-40 | 1/4" | . |
| NAS1352-04H6P | MS24677-2 | 4-40 | 3/8" | . |
| NAS1352-06H6P | MS24677-7 | 6-32 | 3/8" | . |
| NAS1352-06H8P | MS24677-8 | 6-32 | 1/2" | . |
| NAS1352-06H10P | MS24677-9 | 6-32 | 5/8" | . |
| NAS1352-08H6P | MS24677-14 | 8-32 | 3/8" | . |
| NAS1352-08H8P | MS24677-15 | 8-32 | 1/2" | . |
| NAS1352-08H10P | MS24677-16 | 8-32 | 5/8" | . |
| NAS1352-08H12P | MS24677-17 | 8-32 | 3/4" | . |

FINE THREADED

| PART NO. | MS NO. | THREAD | LENGTH | PRICE |
|---------------|------------|--------|--------|-------|
| NAS1351-3H6P | MS24678-9 | 10-32 | 3/8" | . |
| NAS1351-3H8P | MS24678-10 | 10-32 | 1/2" | . |
| NAS1351-3H10P | MS24678-11 | 10-32 | 5/8" | . |
| NAS1351-3H12P | MS24678-12 | 10-32 | 3/4" | . |
| NAS1351-4H10P | MS24678-21 | 1/4-28 | 5/8" | . |
| NAS1351-4H12P | MS24678-22 | 1/4-28 | 3/4" | . |
| NAS1351-4H14P | MS24678-23 | 1/4-28 | 4/8" | . |
| NAS1351-4H16P | MS24678-24 | 1/4-28 | 1" | . |

SOCKET HEAD CAP SCREW ALLOY STEEL-DRILLED



COARSE THREADED

| PART NO. | MS NO. | THREAD | LENGTH | PRICE |
|----------------|------------|--------|--------|-------|
| NAS1352-04-4P | MS16997-9 | 4-40 | 1/4" | . |
| NAS1352-04-6P | MS16997-10 | 4-40 | 3/8" | . |
| NAS1352-04-8P | MS16997-11 | 4-40 | 1/2" | . |
| NAS1352-06-6P | MS16997-19 | 6-32 | 3/8" | . |
| NAS1352-06-8P | MS16997-20 | 6-32 | 1/2" | . |
| NAS1352-06-10P | MS16997-21 | 6-32 | 5/8" | . |
| NAS1352-08-6P | MS16997-31 | 8-32 | 3/8" | . |
| NAS1352-08-8P | MS16997-32 | 8-32 | 1/2" | . |
| NAS1352-08-10P | MS16997-33 | 8-32 | 5/8" | . |
| NAS1352-08-12P | MS16997-34 | 8-32 | 3/4" | . |

FINE THREADED

| PART NO. | MS NO. | THREAD | LENGTH | PRICE |
|---------------|------------|--------|--------|-------|
| NAS1351-3-6P | MS16998-26 | 10-32 | 3/8" | . |
| NAS1351-3-8P | MS16998-27 | 10-32 | 1/2" | . |
| NAS1351-3-10P | MS16998-28 | 10-32 | 5/8" | . |
| NAS1351-3-12P | MS16998-29 | 10-32 | 3/4" | . |
| NAS1351-4-10P | MS16998-42 | 1/4-28 | 5/8" | . |
| NAS1351-4-12P | MS16998-43 | 1/4-28 | 3/4" | . |
| NAS1351-4-14P | MS16998-44 | 1/4-28 | 7/8" | . |
| NAS1351-4-16P | MS16998-45 | 1/4-28 | 1" | . |

HA

WASHERS

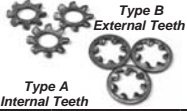


MS35338 LOCK WASHERS

MS35338 split, helical lock washers are made of carbon steel, cadmium plated per QQ-P-416A, Type II, Class 3. They replace AN935 medium-weight washers. Formerly AN935.

| Cad. Plated | | | Stainless | | |
|-------------|------------|-------|-------------|-------|--|
| Size | Part No. | Price | Part No. | Price | |
| 6 | MS35338-41 | | MS35338-136 | | |
| 8 | MS35338-42 | | MS35338-137 | | |
| 10 | MS35338-43 | | MS35338-138 | | |
| 1/4 | MS35338-44 | | MS35338-139 | | |
| 5/16 | MS35338-45 | | MS35338-140 | | |
| 3/8 | MS35338-46 | | MS35338-141 | | |
| 7/16 | MS35338-47 | | MS35338-142 | | |
| 1/2 | MS35338-48 | | MS35338-143 | | |

MS35333 & MS35335 LOCK WASHERS



Provide efficient locking action by spring tension and biting action of tapered twisted teeth. Made of 1050 spring steel and cadmium plated per specification QQ-P-416A, Type II, Class 3. Available with internal teeth (Type A) or external teeth (Type B).

| Size | Cad. Plated Part No. | Price Each | Stainless Part No. | Price Each | Cad. Plated Part No. | Price Each |
|------|----------------------|------------|--------------------|------------|----------------------|------------|
| 6 | MS35333-37 | | MS35333-71 | | MS35335-30 | |
| 8 | MS35333-38 | | MS35333-72 | | MS35335-31 | |
| 10 | MS35333-39 | | MS35333-73 | | MS35335-32 | |
| 1/4 | MS35333-40 | | MS35333-74 | | MS35335-33 | |
| 5/16 | MS35333-41 | | MS35333-75 | | MS35335-34 | |
| 3/8 | MS35333-42 | | MS35333-76 | | MS35335-35 | |
| 7/16 | MS35333-43 | | MS35333-77 | | ---- | --- |
| 1/2 | MS35333-44 | | MS35333-78 | | ---- | --- |

TOOTH LOCKWASHER



MIL-SPEC designations for tooth lockwashers include, but are not limited to MS35335. These are covered by military procurement specification FF-W-100

| Nominal Screw Size | Inside Diameter | | Outside Diameter | | Material Thickness | | MS 35335 Steel Plated | P/N | Price |
|--------------------|-----------------|-------|------------------|-------|--------------------|-------|-----------------------|----------|--------|
| | Min | Max | Min | Max | Min | Max | | | |
| 9/16 | 0.576 | 0.596 | 0.960 | 0.985 | 0.037 | 0.045 | -38 | 04-00099 | \$0.28 |
| 3/4 | 0.768 | 0.795 | 1.220 | 1.260 | 0.047 | 0.055 | -40 | 04-00101 | \$0.76 |
| 7/8 | 0.897 | 0.927 | 1.380 | 1.410 | 0.052 | 0.060 | -41 | 04-00103 | \$0.56 |

NAS549 PHENOLIC WASHERS

NAS549-10 Phenolic insulating washers for #10 screws. Size: 13/64" I.D. x 7/16" O.D. x 1/16 thick. Ea.

G-8 TINNERMAN WASHERS



A No. 8 "Tinnerman" style washer with the same O.D. as a No. 10 (0.75). Great for those oversize holes in fairings. Unlike the No. 10 washer with a No. 8 screw, these washers will tighten down on the fairing (not bottom out on the cone) thus providing the proper "clamp up" between the fastener and the fairing. The G-8 washers are Made in the USA from 304 (1/2 hard) Stainless Steel and are machine tumbled for a shiny finish.

P/N 04-01989

TINNERMAN COUNTERSUNK WASHERS



For use with 100° flat-head screws such as MS24693 and MS24694 machine screws and NAS548 sheet metal screws to provide reinforced, low-profile attachments. Made of spring steel, cadmium plated.

| Part No. | Screw Size | I.D. In. | O.D. In. | Price Each | Price per 100 |
|---------------|------------|----------|----------|------------|---------------|
| A3236-012-24A | #6 | .140 | .50 | | |
| A3135-017-24A | #8 | .171 | .56 | | |
| A3235-028-24A | #10 | .196 | .75 | | |
| A3475-028-24A | 1/4 | .255 | .81 | | |

This washer is raised above fabric surface and screw fits down into washer.

82° CSK STAINLESS FINISHING WASHERS



| Desc. | Part No. | Price | Desc. | Part No. | Price |
|-------|----------|-------|-------|----------|-------|
| WF-4 | 04-00393 | | WF-8 | 04-00395 | |
| WF-6 | 04-00394 | | WF-10 | 04-00396 | |

NYLON WASHERS

| Part No. | Thread Size | Price Ea. | Part No. | Thread Size | Price Ea. |
|----------|-------------|-----------|----------|-------------|-----------|
| 04-00219 | #4 | | 04-00217 | #8 | |
| 04-00216 | #6 | | 04-00218 | #10 | |

Less 20% Discount on 100 per size

100° CSK STAINLESS WASHERS



Use with 100° flathead screws to provide reinforced, low-profile attachments.

| Size | Dimensions | Part No. | Price |
|------|------------------|----------|-------|
| 6 | .500 OD x .012 T | 04-00397 | |
| 8 | .562 OD x .017 T | 04-00392 | |
| 10 | .750 OD x .020 T | 04-00398 | |

Less 20% Discount on 100 per size



AN975 TAPER PIN WASHERS

Taper pin washers are used with AN386 threaded taper pins. Manufactured of steel, cadmium plated per QQ-P-416, Type II, Class 2.

| AN975 Dash # | Fits Taper Pin # | Price Ea. |
|--------------|------------------|-----------|
| -3 | 1, 2 | |
| -4 | 3 | |
| -5 | 4 | |
| -6 | 5 | |

AN960 FLAT WASHERS



AN960 flat washers are used under hex nuts to provide a smooth bearing surface, as shims to obtain the correct grip length for a bolt and nut assembly, and to adjust the position of AN310 and AN320 castle nuts with respect to drilled cotter pin holes in bolts and clevis pins. Available in cadmium plated steel or anodized aluminum, and in regular and light thickness. Add the letter "L" to dash number to indicate light series. For anodized aluminum washers, add the letters "PD" after AN number.

Examples: AN960-416L is a light series cadmium plated steel washer for 1/4" dia. bolt. AN960PD-10 is an anodized aluminum washer for a 3/16" dia. bolt. AN960PD-10L is a light series anodized aluminum washer for a 3/16" dia. bolt.

NSWC FLAT WASHER KIT - Contains: • Flat AN960-916 (12 qty) • Flat AN960-616L (4 qty) • Flat AN960-416 (40 qty) • Flat AN960-716L (8 qty) • Flat AN960-616 (40 qty) • Flat AN960-816 (32 qty) • Flat AN960-816L (32 qty) P/N 04-01728

| Dash # | Bolt or Screw Size | O.D. (In.) | I.D. (In.) | Thickness | | Price | |
|--------|--------------------|------------|------------|-----------|---------|------------|------------|
| | | | | Light | Regular | Steel each | Alum. each |
| -4 | No. 4 | .312 | .125 | .016 | .032 | | |
| -6 | No. 6 | .375 | .149 | .016 | .032 | | |
| -8 | No. 8 | .375 | .174 | .016 | .032 | | |
| -10 | No. 10 | .438 | .203 | .032 | .063 | | |
| -416 | 1/4" | .500 | .265 | .032 | .063 | | |
| -516 | 5/16" | .562 | .328 | .032 | .063 | | |
| -616 | 3/8" | .625 | .390 | .032 | .063 | | |
| -716 | 7/16" | .750 | .453 | .032 | .063 | | |
| -816 | 1/2" | .875 | .515 | .032 | .063 | | |
| -916 | 9/16" | 1.062 | .578 | .032 | .063 | | |
| -1016 | 5/8" | 1.118 | .640 | .032 | .063 | | ---- |
| -1216 | 3/4" | 1.312 | .765 | .032 | .090 | | ---- |

AN960C STAINLESS WASHERS

| Size | Regular | | Light | |
|------|------------|-----------|-------------|-----------|
| | Part No. | Price Ea. | Part No. | Price Ea. |
| 4 | AN960C4 | | AN960C4L | |
| 5 | ---- | --- | ---- | --- |
| 6 | AN960C6 | | AN960C6L | |
| 8 | AN960C8 | | AN960C8L | |
| 3/16 | AN960C10 | | AN960C10L | |
| 1/4 | AN960C416 | | AN960C416L | |
| 5/16 | AN960C516 | | AN960C516L | |
| 3/8 | AN960C616 | | AN960C616L | |
| 7/16 | AN960C716 | | AN960C716L | |
| 1/2 | AN960C816 | | AN960C816L | |
| 9/16 | AN960C916 | | AN960C916L | |
| 5/8 | AN960C1016 | | AN960C1016L | |
| 3/4 | AN960C1216 | | ---- | ---- |



AN970 FLAT WASHERS

Manufactured of carbon steel, cadmium plated per QQ-P-416C, Type II, Class 2. They provide a greater bearing area than AN960 washers. Used on wooden structures under both the head of the bolt & the nut to prevent crushing the surface.

| Dash No. | Bolt Size | O.D. (In.) | I.D. (In.) | Thk (In.) | Price Each | Price per 100 |
|----------|-----------|------------|------------|-----------|------------|---------------|
| -3 | 3/16" | .875 | .203 | .063 | | |
| -4 | 1/4" | 1.125 | .265 | .063 | | |
| -5 | 5/16" | 1.375 | .328 | .063 | | |
| -6 | 3/8" | 1.625 | .390 | .063 | | |
| -7 | 7/16" | 1.812 | .453 | .109 | | |
| -8 | 1/2" | 2.000 | .515 | .109 | | |
| -10 | 5/8" | 2.375 | .640 | .125 | | |

FINISHING WASHERS

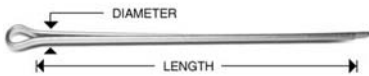


Finishing washers are used in non-structural interior and upholstery applications. The parts covered by NAS390 & NAS391 are getting harder to procure and do not necessarily conform exactly to all of the dimensions stated on the specs. Commercial equivalents can be supplied and are suggested. These are non-critical washers that are readily available and cost effective.

| Screw or Bolt Size | Countersink Washer Part No. | Price | | Flush Washer Part No. | Price | |
|--------------------|-----------------------------|-------|-----|-----------------------|-------|-----|
| | | Each | 100 | | Each | 100 |
| #4 | NAS391B4P | | | NAS390B4P | -- | -- |
| #6 | NAS391B6P | | | NAS390B6P | | |
| #8 | NAS391B8P | | | NAS390B8P | | |
| #10 | NAS391B10P | | | NAS390B10P | | |

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CLEVIS PINS - COTTER PINS



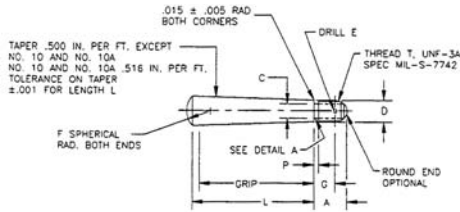
MS24665 COTTER PINS (FORMERLY AN380)

MS24665 cotter pins are stocked in cadmium plated steel (formerly AN380) and in passivated corrosion resisting steel (formerly AN381) in the priced sizes listed below. Other sizes available on special order. Write for quotation. Assortment of 100 Cadmium Plated Cotter Pins
P/N 04-05050

| CADMIUM PLATED | | | | CORROSION RESISTANT STEEL | | | |
|----------------|----------------|---------------|-------|---------------------------|----------------|---------------|-------|
| Part No. | AN381 Dash No. | Dia. & Length | Price | Part No. | AN381 Dash No. | Dia. & Length | Price |
| MS24665-5 | -1-2 | 1/32 X 1/2 | . | MS24665-22 | -1-8 | 1/32 X 1/2 | . |
| MS24665-7 | -1-3 | 1/32 X 3/4 | . | MS24665-24 | -1-12 | 1/32 X 3/4 | . |
| MS24665-9 | -1-4 | 1/32 X 1 | . | MS24665-26 | -1-16 | 1/32 X 1 | . |
| MS24665-132 | -2-2 | 1/16 X 1/2 | . | MS24665-151 | -2-8 | 1/16 X 1/2 | . |
| MS24665-134 | -2-3 | 1/16 X 3/4 | . | MS24665-153 | -2-12 | 1/16 X 3/4 | . |
| MS24665-136 | -2-4 | 1/16 X 1 | . | MS24665-155 | -2-16 | 1/16 X 1 | . |
| MS24665-138 | -2-5 | 1/16 X 1-1/4 | . | MS24665-157 | -2-20 | 1/16 X 1-1/4 | . |
| MS24665-140 | -2-6 | 1/16 X 1-1/2 | . | MS24665-159 | -2-24 | 1/16 X 1-1/2 | . |
| MS24665-142 | -2-7 | 1/16 X 1-3/4 | . | MS24665-161 | -2-28 | 1/16 X 1-3/4 | . |
| MS24665-143 | -2-8 | 1/16 X 2 | . | MS24665-162 | -2-32 | 1/16 X 2 | . |
| MS24665-208 | - | 5/64 X 1/2 | . | MS24665-227 | -25-8 | 5/64 X 1/2 | . |
| MS24665-281 | -3-2 | 3/32 X 1/2 | . | MS24665-229 | -25-12 | 5/64 X 3/4 | . |
| MS24665-283 | -3-3 | 3/32 X 3/4 | . | MS24665-298 | -3-8 | 3/32 X 1/2 | . |
| MS24665-285 | -3-4 | 3/32 X 1 | . | MS24665-300 | -3-12 | 3/32 X 3/4 | . |
| MS24665-287 | -3-5 | 3/32 X 1-1/4 | . | MS24665-302 | -3-16 | 3/32 X 1 | . |
| MS24665-289 | -3-6 | 3/32 X 1-1/2 | . | MS24665-304 | -3-20 | 3/32 X 1-1/4 | . |
| MS24665-292 | -3-8 | 3/32 X 2 | . | MS24665-306 | -3-24 | 3/32 X 1-1/2 | . |
| MS24665-349 | -4-2 | 1/8 X 1/2 | . | MS24665-309 | -3-32 | 3/32 X 2 | . |
| MS24665-351 | -4-3 | 1/8 X 3/4 | . | MS24665-366 | -4-8 | 1/8 X 1/2 | . |
| MS24665-353 | -4-4 | 1/8 X 1 | . | MS24665-368 | -4-12 | 1/8 X 3/4 | . |
| MS24665-355 | -4-5 | 1/8 X 1-1/4 | . | MS24665-370 | -4-16 | 1/8 X 1 | . |
| MS24665-357 | -4-6 | 1/8 X 1-1/2 | . | MS24665-372 | -4-20 | 1/8 X 1-1/4 | . |
| MS24665-359 | -4-7 | 1/8 X 1-3/4 | . | MS24665-374 | -4-24 | 1/8 X 1-1/2 | . |
| MS24665-360 | -4-8 | 1/8 X 2 | . | MS24665-377 | -4-32 | 1/8 X 2 | . |
| MS24665-362 | -4-10 | 1/8 X 2-1/2 | . | MS24665-379 | -4-40 | 1/8 X 2-1/2 | . |
| MS24665-426 | -5-9 | 5/32 X 2 | . | MS24665-444 | -5-32 | 5/32 X 2 | . |
| MS24665-498 | -6-8 | 3/16 X 2 | . | MS24665-516 | -6-32 | 3/16 X 2 | . |
| MS24665-500 | -6-10 | 3/16 X 2 1/2 | . | MS24665-518 | -6-40 | 3/16 X 2 1/2 | . |

Discount: 25% for quantities of 100 or more of the same Part No.

AN386 TAPER PINS



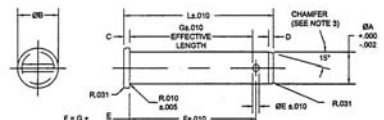
Manufactured from alloy steel, minimum tensile strength 125,000 PSI. Cadmium plated per spec. QQ-P-416, Type I, Class 3. Taper: 0.500"/ft. Use with AN975 taper pin washer, AN320 shear castle nut and cotter pin or with AN364 elastic stop nut. When installed, the small end of the tapered shank should protrude no more than 1/16" above the surface of the assembly. The first dash number is the Brown & Sharpe taper pin reamer number and the second dash number is the grip length in eighths of an inch. For undrilled threaded shank add the letter "A" after second dash number.

| First Dash No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 10A |
|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Thread T | 10-32 | 10-32 | 1/4-28 | 5/16-24 | 3/8-24 | 7/16-20 | 1/2-20 | 9/16-18 | 3/4-16 | 7/8-14 | 7/8-14 |
| A | 7/16 | 7/16 | 29/64 | 33/64 | 35/64 | 35/64 | 19/32 | 21/32 | 47/64 | 51/64 | 51/64 |
| C±.005 | .141 | .141 | .196 | .250 | .313 | .360 | .422 | .482 | .660 | .773 | .773 |
| D±.002 | .205 | .255 | .317 | .355 | .455 | .505 | .605 | .755 | .905 | 1.050 | 1.153 |
| E +.010, -.000 | No.50 (.070) | No.50 (.070) | No.48 (.076) | No.48 (.076) | No.36 (.106) | No.36 (.106) | No.36 (.106) | No.28 (.141) | No.28 (.141) | No.28 (.141) | No.28 (.141) |
| F | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 3/4 | 3/4 | 1 | 1 | 1-1/4 | 1-1/4 |
| G | 5/16 | 5/16 | 21/64 | 21/64 | 23/64 | 23/64 | 13/62 | 15/32 | 35/64 | 39/64 | 39/64 |
| P | 3/64 | 3/64 | 3/64 | 1/16 | 1/16 | 1/16 | 1/16 | 5/64 | 3/32 | 3/32 | 3/32 |

| | |
|-------------|-------------|
| AN386-1-6 | AN386-2-9A |
| AN386-1-6A | AN386-2-10 |
| AN386-1-7 | AN386-2-12 |
| AN386-1-7A | AN386-2-13 |
| AN386-1-8 | AN386-2-14 |
| AN386-1-9 | AN386-3-12 |
| AN386-1-9A | AN386-3-12A |
| AN386-1-10A | AN386-3-14 |
| AN386-1-11 | AN386-4-13 |
| AN386-2-8 | |



CLEVIS PINS



Made of alloy steel per specification MIL-P-5673 and cadmium plated per QQ-P-416, Type II, Class 3. Provided with drilled hole for cotter pin. Used with clevis forks and in secondary controls which are not subjected to continuous operation. Order by AN number and dash number. Example: AN395-41 is a 5/16" dia. pin with an effective length of 1-9/32". Equivalent MS number is MS20392-4C41. **Less 20% in lots of 25 per size. Request quotation on unlisted sizes. NOTE: Clevis pin prices fluctuate with changes in cost/availability at suppliers.**

| Dash No. | Effective Length (In.) | AN392 MS20392 -1C 1/8" | AN393 MS20392 -2C 3/16" | AN394 MS20392 -3C 1/4" | AN395 MS20392 -4C 5/16" | AN396 MS20392 -5C 3/8" |
|----------|------------------------|------------------------|-------------------------|------------------------|-------------------------|------------------------|
| -7 | 7/32 | | | | | |
| -9 | 9/32 | | | | | |
| -11 | 11/32 | | | | | |
| -13 | 13/32 | | | | | |
| -15 | 15/32 | | | | | |
| -17 | 17/32 | | | | | |
| -19 | 19/32 | | | | | |
| -21 | 21/32 | | | | | |
| -23 | 23/32 | | | | | |
| -25 | 25/32 | | | | | |
| -27 | 27/32 | | | | | |
| -29 | 29/32 | | | | | |
| -31 | 31/32 | | | | | |
| -33 | 1-1/32 | | | | | |
| -35 | 1-3/32 | | | | | |
| -37 | 1-5/32 | | | | | |
| -39 | 1-7/32 | | | | | |
| -41 | 1-9/32 | | | | | |
| -43 | 1-11/32 | | | | | |
| -45 | 1-13/32 | | | | | |
| -47 | 1-15/32 | | | | | |
| -49 | 1-17/32 | | | | | |
| -51 | 1-19/32 | | | | | |
| -53 | 1-21/32 | | | | | |
| -55 | 1-23/32 | | | | | |
| -57 | 1-25/32 | | | | | |
| -59 | 1-27/32 | | | | | |
| -61 | 1-29/32 | | | | | |
| -63 | 1-31/32 | | | | | |
| -65 | 2-1/32 | | | | | |
| -67 | 2-3/32 | | | | | |
| -69 | 2-5/32 | | | | | |
| -71 | 2-7/32 | | | | | |
| -73 | 2-9/32 | | | | | |
| -75 | 2-11/32 | | | | | CALL |
| -79 | 2-15/32 | | | | | |
| -81 | 2-17/32 | | | | | |
| -83 | 2-19/32 | | | | | |
| -85 | 2-21/32 | | | | | |
| -87 | 2-23/32 | | | | | |
| -89 | 2-25/32 | | | | | |
| -91 | 2-27/32 | | | | | |
| -93 | 2-29/32 | | | | | |
| -95 | 2-31/32 | | | | | |
| -97 | 3-1/32 | | | | | |
| -99 | 3-3/32 | | | | | |
| -101 | 3-5/32 | | | | | |

LOCK PINS



AN415-2 corrosion resistant steel wire cowl lock pins 1-15/16" long, .080" dia. wire.

P/N AN415-2..... Ea. /100

Commercial steel cadmium plated wire lock pins 1-1/4" long, .062" dia. wire. P/N 04-05100..... Ea. /100

COWLING SAFETY PINS



Positive locking pins that can be readily used without aid of tools. Made of spring steel, cadmium plated, 1-1/16" long.

.051" Wire Dia. AN416-1..... Ea. /100
.041" Wire Dia. AN416-2..... Ea. /100

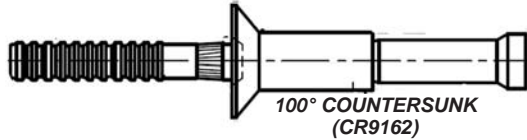
TUBULAR PIN MS16562



MS16562-200 PIN 02-00096.....
TUBULAR PIN MS16562-224..... 04-01715.....

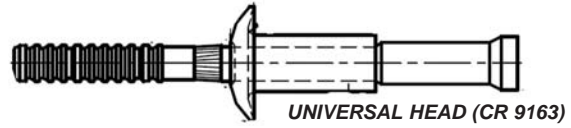
CHERRY COMMERCIAL RIVETS

CHERRY AEROSPACE RIVETS - SELF-PLUGGING CHERRY RIVETS



The self-plugging Cherry Blind Rivet is a 2-piece assembly - a hollow rivet and an inner member or stem, drawn into or through the hollow rivet. Cherry CR162 & CR163 series rivets are now replaced by CR9162 & CR9163 series rivets which are less expensive but do require the use of G-25B hand rivet gun with H-901-5-4C pulling head attached or G-29 which comes with the req. nosepiece.

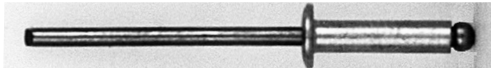
P/N 04-01515 Pulling Head (required).....
G-29.....P/N 12-00701



| Part No. | Head Style | Nominal Dia. | Grip Range | Price | | |
|------------|------------|--------------|------------|-------|-----|------|
| | | | | Each | 100 | 1000 |
| CR9162-4-2 | Csk | 1/8" | .063-.125 | . | . | . |
| CR9162-4-4 | | | .188-.250 | . | . | . |
| CR9162-4-6 | | | .313-.375 | . | . | . |
| CR9162-4-8 | | | .438-.500 | . | . | . |
| CR9163-4-2 | Univ. | 1/8" | .063-.125 | . | . | . |
| CR9163-4-4 | | | .188-.250 | . | . | . |
| CR9163-4-6 | | | .313-.375 | . | . | . |
| CR9163-5-2 | Univ. | 5/32" | .063-.125 | . | . | . |

CHERRY N RIVETS

Break mandrel rivets Conform to MIL-R-24243 & IFI-114 Standards



LOW COST

Substantial savings in installed costs can be realized when Cherry N Rivets are substituted for spotwelds, screws or bolts.

FAST INSTALLATION

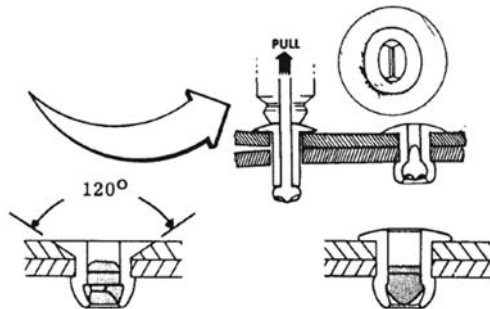
Quick and easy to use with hand or power riveters, Cherry N Rivets have endless fastening applications in manufacturing, maintenance.

UNIQUE FEATURES

Unusual mandrel design of Cherry N Rivets holds rivet and mandrel firmly together prior to installation and insures positive mandrel retention in the installed rivet.

NO MANDREL POP OUTS—

As the mandrel is drawn into the rivet, the end of the rivet sleeve closes in an elliptical configuration... locking the mandrel firmly in place!



FLUSH HEAD PROTRUDING HEAD CHERRY N RIVET IDENTIFICATION CODE

First letter is rivet material:

A = 5052 Aluminum B = 5056 Aluminum C = Stainless
M = Monel S = Steel U = Copper

Second letter is mandrel material:

A = 7178 Aluminum S = Steel C = Stainless

Third letter is head style:

P = Protruding L = Large C = Flush

First number is rivet diameter in 32nds of an inch:

For example,—4 is 4/32nds or 1/8" diameter

Second number is rivet maximum grip length in 16ths of an inch:

For example,—6 is 6/16ths or 3/8" grip length

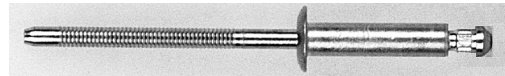
MINIMUM RIVET SHEAR AND TENSILE STRENGTH (IBS.)

CHERRY N RIVETS

| RIVET DIAM. MAND. | BS SERIES ALUM RIVET STEEL MAND. | | MS SERIES MONEL RIVET STEEL MAND. | | CC SERIES STAINLESS RIVET STAINLESS | |
|-------------------------|--|------|---|------|---|------|
| | GRADE 19 | | GRADE 40 | | GRADE 51 | |
| | Shear | Tens | Shear | Tens | Shear | Tens |
| 3/32 | 125 | 175 | 200 | 300 | 230 | 280 |
| 1/8 | 200 | 325 | 350 | 525 | 450 | 600 |
| 5/32 | 325 | 450 | 600 | 900 | 750 | 1000 |
| 3/16 | 430 | 650 | 750 | 1100 | 1000 | 1300 |
| 1/4 | 750 | 1050 | 1450 | 2150 | 1700 | 2250 |

NOTE: SUBJECT TO PRICE AND AVAILABILITY OF CHERRY BRAND RIVETS. EQUIVALANT RIVETS MAY BE FURNISHED.

CHERRY Q RIVETS Structural—Self-plugging rivets



HIGH SHEAR STRENGTH

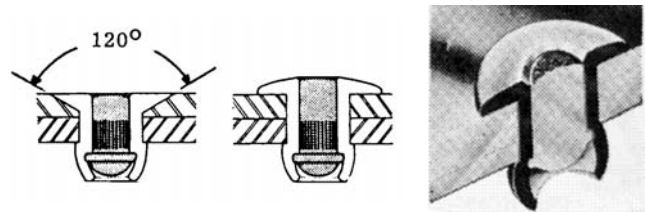
Cherry Q Rivet mandrel plugs the entire length of the rivet sleeve, providing full shear strength values for structural or load-bearing applications.

SEALING CAPABILITY

Specially designed mandrel of the Q Rivet is engineered to effect a seal, upon installation which offers resistance to leakage.

VIBRATION RESISTANT

Rivet sleeve curls over end of mandrel to insure its positive retention.



FLUSH HEAD PROTRUDING HEAD CHERRY Q RIVET IDENTIFICATION CODE

First letter is rivet material:

A = 5052 Aluminum B = 5056 Aluminum C = Stainless
M = Monel S = Steel

Second letter is mandrel material:

A = 7178 Aluminum S = Steel C = Stainless

Third letter is head style:

P = Protruding L = Large C = Flush

Fourth letter is type of rivet:

Q = Cherry Q Rivet, structural, self-plugging

First number is rivet diameter in 32nds of an inch:

For example,—6 is 6/32nds or 3/16" diameter

Second number is rivet maximum grip length in 1/16 of an inch:

For example,—8 is 8/16ths or 1/2" grip length

MINIMUM RIVET SHEAR AND TENSILE STRENGTH (IBS.) CHERRY Q RIVETS

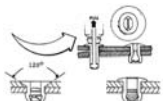
| RIVET DIAM. | BS SERIES ALUM RIVET STEEL MAND. | | MS SERIES MONEL RIVET STEEL MAND. | | CC SERIES STAINLESS RIVET STAINLESS MAND. GRADE 51 | |
|----------------|--|------|---|------|--|------|
| | GRADE 19 | | GRADE 40 | | GRADE 51 | |
| | Shear | Tens | Shear | Tens | Shear | Tens |
| 1/8 | 350 | 325 | 650 | 525 | 700 | 600 |
| 5/32 | 525 | 450 | 950 | 900 | 1050 | 1000 |
| 3/16 | 750 | 650 | 1450 | 1100 | 1650 | 1300 |
| 1/4 | 1250 | 1050 | 2350 | 2150 | 2450 | 2250 |

HA

"POP" RIVETS – RIVNUTS

For conversion of the most frequently used "Pop" rivets to the corresponding CHERRY numbers, see the following table.
NOTE: SUBJECT TO PRICE AND AVAILABILITY OF CHERRY BRAND RIVETS. EQUIVALANT RIVETS MAY BE FURNISHED.

G



CHERRY COMMERCIAL RIVET PRICE TABLE

Grip is total of material thickness

CHERRY – Commercial rivets with maximum grip length greater than the material thickness may be substituted for a rivet of the required grip length.

| Cherry Rivet Type | Cherry Rivet Number | USM "POP" Rivet Equiv.* | Rivet Dia. | Drill Size | Cherry Max Rivet Grip Length | Price** | | | | | |
|-------------------|---------------------|-------------------------|------------|------------|------------------------------|----------------|---------------|---------------|----------------|----------------|------------------|
| | | | | | | Price Ea. 1-99 | Price Per 100 | Price for 600 | Price for 1000 | Price for 3000 | Price for 10,000 |
| "N" | BSP-41 | AD41BS | 1/8" | 30 | .062 | . | . | . | . | . | . |
| | BSPS-42 | | | | .125 | . | . | . | . | . | . |
| | BSPS-43 | | | | .185 | . | . | . | . | . | . |
| | BSPS-44 | | | | .250 | . | . | . | . | . | . |
| | BSP-46 | | | | .375 | . | . | . | . | . | . |
| | BSP-48 | | | | .500 | . | . | . | . | . | . |
| "N" | BSC-43 | AK43BS | 1/8" | 30 | .187 | . | . | . | . | . | . |
| | -44 | 44BS | | | .250 | . | . | . | . | . | . |
| "N" | MSP-32 | MD319BS | 3/32" | 41 | .125 | . | . | . | . | . | . |
| | -42 | 424BS | 1/8" | | .125 | . | . | . | . | . | . |
| | -43 | 429BS | | | .187 | . | . | . | . | . | . |
| | -44 | 435BS | | | .250 | . | . | . | . | . | . |
| | -45 | 440BS | | | .312 | . | . | . | . | . | . |
| | -54 | 530BS | 5/32" | 20 | .250 | . | . | . | . | . | . |
| "N" | CCC-32 | MK319BS | 3/32" | 41 | .125 | . | . | . | . | . | . |
| | -42 | 424BS | 1/8" | 30 | .125 | . | . | . | . | . | . |
| "N" | CCP-42 | SSD42SSDS | 1/8" | 30 | .125 | . | . | . | . | . | . |
| | -44 | | | | .250 | . | . | . | . | . | . |
| | -46 | | | 30 | .375 | . | . | . | . | . | . |
| "N" | SSP-42 | | 1/8" | 30 | .125 | . | . | . | . | . | |
| "N" | -44 | | | | .250 | . | . | . | . | . | . |
| | -45 | | 1/8" | | .312 | . | . | . | . | . | . |
| "N" | SSC-43 | | 1/8" | | .187 | . | . | . | . | . | . |
| | BSPQ-41 | AD41H | 1/8" | 30 | .062 | . | . | . | . | . | . |
| "Q" | -42 | AD42H | | 30 | .125 | . | . | . | . | . | . |
| | -43 | AD43H | | | .187 | . | . | . | . | . | . |
| | -44 | AD44H | | | .250 | . | . | . | . | . | . |
| | -46 | AD46H | | | .375 | . | . | . | . | . | . |
| | AAPQ-42 | AD43H | 1/8" | 30 | .125 | . | . | . | . | . | . |
| "Q" | -44 | AD44H | | 30 | .250 | . | . | . | . | . | . |

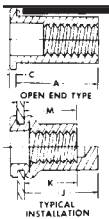
*All USM "Pop" rivets are 1/64" larger than nominal diameter. Presented here for cross reference purposes only. **Quotations on larger quantities.

AVEX NON-STRUCTURAL BLIND RIVETS

Avex non- structural blind rivets, with aluminum body and steel stem, are similar to the Cherry BSP and BSC commercial rivets. We stock the standard dome head, 120° countersunk head and the low-profile "Lo-Pro" dome head rivets in diameters up to 3/16".

| Head Style | Part No. | Dia. | Grip Range | Price | | |
|---------------------|-----------|-------|------------|-------|-----|------|
| | | | | Each | 100 | 1000 |
| Dome | 1601-0410 | 1/8" | To .187 | . | . | . |
| | 1601-0414 | 1/8" | To .312 | . | . | . |
| | 1601-0613 | 3/16" | To .250 | . | . | . |
| Counter-sunk (120°) | 1601-0619 | 3/16" | To .437 | . | . | . |
| | 1604-0412 | 1/8" | To .250 | . | . | . |
| | 1604-0514 | 5/32" | To .312 | . | . | . |
| | 1604-0615 | 3/16" | To .312 | . | . | . |
| Lo-Pro | 1661-0613 | 3/16" | To .250 | . | . | . |
| | 1661-0621 | 3/16" | To .500 | . | . | . |

RIVET NUTS (OPEN END)



The Rivet nut is a one-piece internally threaded and counter-bored tubular aluminum rivet that can be pulled up or headed while working entirely from one side, forming a bulge or head on the blind side. This upset is large enough to resist being pulled through metal or plastic even under conditions of eccentric load. It overcomes the difficulty of installing brackets, handles or other attachments to tubular pieces.

FLAT HEAD

| Part No. | Type | Grip Range | Length | Thread | Price/ea. |
|----------------|---------|------------|--------|--------|-----------|
| NAS1329A06K75 | Keyed | .010-.075 | .438 | 6-32 | . |
| NAS1329A06-75 | Keyless | .010-.075 | .438 | 6-32 | . |
| NAS1329A06K120 | Keyed | .075-.120 | .500 | 6-32 | . |
| NAS1329A06-120 | Keyless | .075-.120 | .500 | 6-32 | . |
| NAS1329A08K75 | Keyed | .010-.075 | .438 | 8-32 | . |
| NAS1329A08-75 | Keyless | .010-.075 | .438 | 8-32 | . |
| NAS1329A08K120 | Keyless | .075-.120 | .500 | 8-32 | . |
| NAS1329A08-120 | Keyless | .075-.120 | .500 | 8-32 | . |
| NAS1329A3K80 | Keyed | .010-.075 | .438 | 10-32 | . |
| NAS1329A3-80 | Keyless | .010-.075 | .438 | 10-32 | . |
| AEA10K140 | Keyed | .075-.140 | .500 | 10-32 | . |
| AEA10-140 | Keyless | .075-.140 | .500 | 10-32 | . |

COUNTERSUNK HEAD

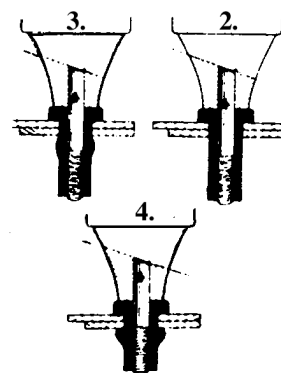
| Part Number | Keyed | Keyless | Grip Range | Length | Thread | Price |
|----------------|-------|----------------|------------|--------|--------|-------|
| | | | | | | Each |
| NAS1330A06K106 | | NAS1330A06-106 | .065-.106 | .500 | 6-32 | . |
| NAS1330A08K106 | | NAS1330A08-106 | .065-.106 | .500 | 8-32 | . |

RIVET NUT INSTALLATION

Rivet Nut is threaded onto pull-up stud of a hand or power-heading tool.

SEE TOOLS SECTION (PAGE 600) FOR RIVET NUT TOOLS.

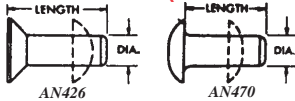
Rivet Nut on header tool mandrel, inserted in drilled hole ready for installation. Arrow indicates direction of mandrel movement as tool is operated. Mandrel retracts pulling threaded portion of Rivet Nut shank toward blind side of work, forming bulge around unthreaded shank area. Rivet Nut is clinched securely in place. Unthreading the tool mandrel leaves internal Rivet Nut threads intact, unharmed.



BLIND NUT PLATE - Installed Rivet Nut also serve as blind nut plates for simple screw attachments.

RIVETS – CHERRYMAX – CHERRYLOCK

SOLID ALUMINUM RIVETS AN426 (MS20426) AN470 (MS20470)



"A" rivets are "soft". They are fabricated from 1100-grade aluminum and have a tensile strength of 16,000 PSI. "AD" rivets are fabricated from 2117 aluminum and heat treated to the T4 condition. They have a shear strength of 26,000 PSI and a tensile strength of 38,000 PSI. All rivets sold in 1/4 lb. & 1/8 lb. packages.

| Dash No. | Dia. x L | Price per 1/4 Lb. | | Qty Lb. | Price per 1/4 Lb | | Qty Lb. |
|----------|--------------|-------------------|---------|---------|------------------|---------|---------|
| | | AN426A | AN426AD | | AN470A | AN470AD | |
| 3-2 | 3/32 x 1/8 | | | 6406 | | | 4107 |
| 3-3 | 3/32 x 3/16 | | | 5003 | | | 3485 |
| 3-4 | 3/32 x 1/4 | | | 4103 | | | 3027 |
| 3-5 | 3/32 x 5/16 | | | 3478 | | | 2675 |
| 3-6 | 3/32 x 3/8 | | | 3018 | | | 2397 |
| 3-7 | 3/32 x 7/16 | | | 2666 | | | 2171 |
| 3-8 | 3/32 x 1/2 | | | 2161 | | | 1826 |
| 3-10 | 3/32 x 5/8 | | | 1817 | | | 1576 |
| 3-12 | 3/32 x 3/4 | | | 1640 | | | 1403 |
| 3-14 | 3/32 x 7/8 | | | 1567 | | | 1386 |
| 3-16 | 3/32 x 1 | | | 1378 | | | 1237 |
| 4-3 | 1/8 x 3/16 | | | 2810 | | | 1734 |
| 4-4 | 1/8 x 1/4 | | | 2308 | | | 1529 |
| 4-5 | 1/8 x 5/16 | | | 1958 | | | 1367 |
| 4-6 | 1/8 x 3/8 | | | 1700 | | | 1236 |
| 4-7 | 1/8 x 7/16 | | | 1502 | | | 1128 |
| 4-8 | 1/8 x 1/2 | | | 1346 | | | 1037 |
| 4-9 | 1/8 x 9/16 | | | 1219 | | | 960 |
| 4-10 | 1/8 x 5/8 | | | 1025 | | | 836 |
| 4-12 | 1/8 x 3/4 | | | 885 | | | 740 |
| 4-13 | 1/8 x 13/16 | | | 797 | | | 715 |
| 4-14 | 1/8 x 7/8 | | | 631 | | | 689 |
| 4-16 | 1/8 x 1 | | | 592 | | | 594 |
| 4-20 | 1/8 x 1-1/4 | | | 467 | | | 521 |
| 4-22 | 1/8 x 1-3/8 | | | 328 | | | 496 |
| 5-4 | 5/32 x 1/4 | | | 1440 | | | 888 |
| 5-5 | 5/32 x 5/16 | | | 1226 | | | 850 |
| 5-6 | 5/32 x 3/8 | | | 1079 | | | 802 |
| 5-7 | 5/32 x 7/16 | | | 946 | | | 672 |
| 5-8 | 5/32 x 1/2 | | | 849 | | | 621 |
| 5-9 | 5/32 x 9/16 | | | 770 | | | 578 |
| 5-10 | 5/32 x 5/8 | | | 649 | | | 507 |
| 5-12 | 5/32 x 3/4 | | | 494 | | | 407 |
| 5-16 | 5/32 x 1 | | | 450 | | | 366 |
| 5-22 | 5/32 x 1-3/8 | | | 368 | | | 314 |
| 6-5 | 3/16 x 5/16 | | | 846 | | | 515 |
| 6-7 | 3/16 x 7/16 | | | 728 | | | 436 |
| 6-10 | 3/16 x 5/8 | | | 451 | | | 334 |
| 6-14 | 3/16 x 7/8 | | | 390 | | | 299 |

10% Discount for 5lbs. of rivets or more (per P/N)

SOLID RIVET ASSORTMENT

"AD" indicates Hard 2117 aluminum alloy. These rivets are heat treated and have a minimum tensile strength of 38,000 PSI. "A" indicates Soft 100 pure aluminum and have a minimum tensile strength of 16,000 PSI.

Each kit contains 1/8 lb each of the following 12 sizes:

3/32 (3-4, 3-6, 3-8); 5/32 (5-4, 5-5, 5-6, 5-8); 1/8 (4-4, 4-6, 4-8); 3/16 (6-6, 6-8)

Pack C AN470AD, Universal Hard P/N 04-00357
 Pack D AN470A, Universal Soft P/N 04-00358
 Pack E AN426AD, 100° CSK Hard P/N 04-00359
 Pack F AN426A, 100° CSK Soft P/N 04-00361

OVER SIZE AND HALF SIZE RIVETS

HALF-SIZE LENGTH RIVETS - These flush head AN426 rivets are ideal for those situations where one length is just too short & the next length is too long.

| Part No. | Dia. | Length | Price Per 1/8 lb. |
|---------------|-------|--------|-------------------|
| AN426AD-3-3.5 | 3/32" | 7/32" | |
| AN426AD-3-4.5 | 3/32" | 9/32" | |
| AN426AD-3-5.5 | 3/32" | 11/32" | |

OVERSIZE SHANK RIVETS - These NAS1097 rivets feature a 1/8" diameter shank with a head size that of a 3/32" rivet. Perfect when rivet hole becomes enlarged requiring 1/8" shank but 3/32" head matches rest of your 3/32" rivets.

| Part No. | Dia. | Length | Price Per 1/8 lb. |
|-----------------|------|--------|-------------------|
| NAS1097AD-4-3.5 | 1/8" | 7/32" | |
| NAS1097AD-4-4 | 1/8" | 1/4" | |
| NAS1097AD-4-5 | 1/8" | 5/16" | |
| NAS1097AD-4-6 | 1/8" | 3/8" | |

CHERRYMAX RIVETS



100° Countersunk Head (CR3242 & CR3212)

Universal Head (CR3243 & CR3213)

Due to the large bulbed blind head, similar to that of a solid rivet, the Cherrylock and CherryMax rivets are especially suited for double dimpled or high vibration applications. They can be used as replacements for some solid rivets and are excellent for use in fiberglass or composites as the rivet spreads in a way that prevents crazing or cracking of the material. NOTE: CR3212 & CR3213 are nominal diameters. CR3242 & CR3243 are oversized diameters and measure 1/64" more than listed diameter.

Install with P/N 12-03105 G-27 Hand Gun.

| Dash # | Dia. | CR3212 Grip Range | CR3213 Grip Range | Each | Price 100 |
|--------|------|-------------------|-------------------|------|-----------|
| 4-1 | | ---- | .025-.062 | --- | --- |
| 4-2 | | .063-.125 | .063-.125 | . | . |
| 4-3 | .126 | .126-.187 | .126-.187 | . | . |
| 4-4 | | .188-.250 | .188-.250 | . | . |
| 4-5 | | .251-.312 | .251-.312 | . | . |
| 4-6 | | .313-.375 | .313-.375 | . | . |
| 5-2 | | .065-.125 | .063-.125 | . | . |
| 5-3 | | .126-.187 | .126-.187 | . | . |
| 5-4 | .157 | .188-.250 | .188-.250 | . | . |
| 5-5 | | .251-.312 | .251-.312 | . | . |
| 5-6 | | .313-.375 | .313-.375 | . | . |
| 6-10 | .189 | .563-.625 | .563-.625 | . | . |

| Dash # | Dia. | CR3242 Grip Range | CR3243 Grip Range | Each | Price 100 |
|--------|------|-------------------|-------------------|------|-----------|
| 4-1 | | .045-.025 | .025-.062 | . | . |
| 4-2 | | .063-.125 | .063-.125 | . | . |
| 4-3 | | .126-.187 | .126-.187 | . | . |
| 4-4 | .140 | .188-.250 | .188-.250 | . | . |
| 4-5 | | .251-.312 | .251-.312 | . | . |
| 4-6 | | .313-.375 | .313-.375 | . | . |
| 5-2 | | .063-.125 | .063-.125 | . | . |
| 5-3 | | .126-.187 | .126-.187 | . | . |
| 5-4 | .173 | .188-.250 | .188-.250 | . | . |
| 5-5 | | .251-.312 | .251-.312 | . | . |
| 5-6 | | .313-.375 | .313-.375 | . | . |

NOTE: SUBJECT TO PRICE AND AVAILABILITY OF CHERRY BRAND RIVETS. EQUIVALENT RIVETS MAY BE FURNISHED.

CHERRYMAX GRIP GAUGE



Measures rivet diameter and length, P/N 12-00217

RIVET/RIVNUT BACK MARKERS



Used to locate pre-drilled holes in the wing ribs, fuel tank covers, panels, skin. Pre-drill the ribs, screw in the back markers, lay the skin sheet over the top, tap with a hammer, turn the sheet over, and drill the holes. This is especially useful for rivnut installation. Due to the large size of the hole required, small errors in location can lead to the "Oh darn, I missed the rib syndrome". Backmarkers can save you hours of frustration. Two sizes of threaded backmarkers are available. We recommend

using the 04-00131 for wing ribs. Drilling the wing ribs with a 3/32" drill. Drop in the back markers. Mark the skin by taping with a soft hammer. Turn the skin over and drill the skin with a 3/32" drill. Cleco the skin into position enlarge the holes with #30 drill & cleco. Now you are ready to rivet.

| Nut Plate | Marker Size | Drill Size | Part No. | Price Ea. |
|------------|-------------|------------|----------|-----------|
| 10-32* | — | — | 04-00117 | . |
| 8-32* | — | — | 04-00119 | . |
| 3/8-24 | .327 | 5/8" | 04-00121 | . |
| 5/16-24 | .265 | 1/2" | 04-00122 | . |
| 1/4-28 | .209 | 1/2" | 04-00123 | . |
| 10-32 | .154 | 3/8" | 04-00124 | . |
| 8-32 | .128 | 3/8" | 04-00127 | . |
| 6-32 | .102 | 3/8" | 04-00129 | . |
| 3/32" hole | .093 | 3/8" | 04-00131 | . |

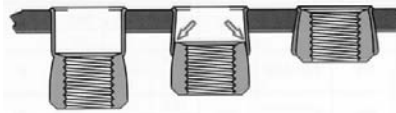
NUTSERTS



The A-T Series Insert is unique in that it can be installed into most any material above .030/.76 mm in thickness. As the A-T Series is installed, the threaded portion is completely swaged 360° into the sleeve portion and the hole. This permits the A-T Series to be used with Grade 8/metric 12.9 mating screws. The A-T Series Insert is installed using lightweight, hand held pneumatic tools that can be located at any position in your product's assembly sequence. The A-T Series Insert can be installed either prior to or after finish.

360° SWAGING HOW IT WORKS FOR YOU

As the A-T Series Insert is installed, the threaded nut portion is drawn into the upper sleeve portion.

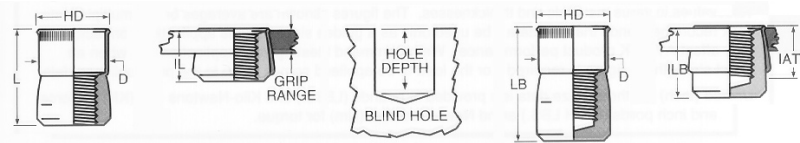


As this occurs, a 360° swaging action takes place anchoring the A-T Series in the parent material.

NUTSERT HOLE SIZE / MATERIAL THICKNESS CHART

Installation hole size for the A-T Series Insert is determined by the parent material's thickness and density. The thicker the material the larger the hole required to allow full 360° installation swaging. The application should be tested before hole size is specified.

| THREAD SIZE | .030-.090 MAT. THICKNESS | | .091-.124 MAT THICKNESS | | .125-.186 MAT. THICKNESS | | .187-OVER MAT. THICKNESS | |
|-------------|--------------------------|---------|-------------------------|---------|--------------------------|---------|--------------------------|---------|
| | DRILL SIZE | DECIMAL | DRILL SIZE | DECIMAL | DRILL SIZE | DECIMAL | DRILL SIZE | DECIMAL |
| 4-40 UNC | 3/16 | .1875 | #10 | .1935 | #10 | .1935 | #9 | .1960 |
| 6-32 UNC | 7/32 | .2188 | #2 | .2210 | #1 | .2280 | #1 | .2280 |
| 8-32 UNC | 1/4 | .2500 | "F" | .2570 | 17/64 | .2656 | 17/64 | .2656 |
| 10-24 UNC | 9/32 | .2812 | "L" | .2900 | "L" | .2900 | 19/64 | .2969 |
| 10-32 UNF | 9/32 | .2812 | "L" | .2900 | "L" | .2900 | 19/64 | .2969 |
| 1/4-20 UNC | 3/8 | .3750 | 3/8 | .3750 | "W" | .3860 | 25/64 | .3906 |
| 1/4-28 UNC | 3/8 | .3750 | 3/8 | .3750 | "W" | .3860 | 25/64 | .3906 |
| 5/16-18 UNC | 1/2 | .5000 | 1/2 | .5000 | 33/64 | .5156 | 33/64 | .5156 |
| 5/16-24 UNC | 1/2 | .5000 | 1/2 | .5000 | 33/64 | .5156 | 33/64 | .5156 |
| 3/8-16 UNC | 9/16 | .5625 | 9/16 | .5625 | 37/64 | .5781 | 37/64 | .5781 |
| 1/2-13 UNC | 3/4 | .7500 | 49/64 | .7656 | 25/32 | .7810 | 51/64 | .7970 |



| THREAD SIZE | THREAD CALL OUT | HD ±.005 | L ±.015 | D MAX. | IL MAX. | LB ±.015 | ILB MAX. | IATD** MAX. | HOLE DEPTH MIN. | PART NO. | PRICE EACH |
|-------------|-----------------|----------|---------|--------|---------|----------|----------|-------------|-----------------|-----------|------------|
| 4-40 UNC | 440 | .211 | .370 | .1875 | .205 | .660 | .495 | .395 | .400 | ATS2-440 | . |
| 6-32 UNC | 632 | .240 | .370 | .2185 | .205 | .675 | .505 | .410 | .400 | ATS2-632 | . |
| 8-32 UNC | 832 | .269 | .370 | .2495 | .205 | .675 | .505 | .410 | .400 | ATS2-832 | . |
| 10-24 UNC | 1024 | .306 | .370 | .2805 | .205 | .685 | .520 | .385 | .400 | ATS2-1024 | . |
| 10-32 UNF | 1032 | .306 | .370 | .2805 | .205 | .685 | .520 | .385 | .400 | ATS2-1032 | . |
| 1/4-20 UNC | 420 | .400 | .515 | .3745 | .275 | 1.005 | .760 | .615 | .540 | ATS2-420 | . |
| 1/4-28 UNC | 420 | .400 | .515 | .3745 | .275 | 1.005 | .760 | .615 | .540 | ATS2-428 | . |
| 5/16-18 UNC | 518 | .528 | .615 | .4995 | .325 | 1.065 | .770 | .630 | .640 | ATS2-518 | . |
| 5/16-24 UNC | 518 | .528 | .615 | .4995 | .325 | 1.065 | .770 | .630 | .640 | ATS2-524 | . |
| 3/8-16 UNC | 616 | .588 | .745 | .5615 | .390 | 1.450 | 1.095 | .890 | .770 | ATS2-616 | . |
| 1/2-13 UNC | 813 | .800 | .935 | .7485 | .485 | NA | NA | NA | .960 | ATS2-813 | . |

**Dimensions in minimum grip condition. Additional UNF thread sizes available.

AA-112 HI-TORQUER NUTSERT TOOLS



The hi-torquer tool is ideal for field and maintenance applications. It features a patented Quick Change thread size nose assembly. Order one base tool plus appropriate conversion kit. No warranty on these tools.

| THREAD SIZE | CONV. KIT PART NO. | PRICE EACH |
|----------------------------|--------------------|------------|
| 4-40 UNC | AAT-202-440 | . |
| 6-32 UNC | AAT-202-632 | . |
| 8-32 UNC | AAT-202-832 | . |
| 10-24 UNC | AAT-202-1024 | . |
| 10-32 UNF | AAT-202-1032 | . |
| 1/4-20 UNC | AAT-202-420 | . |
| 1/4-28 UNC | AAT-202-428 | . |
| 5/16-18 UNC | AAT-202-518 | . |
| 5/16-24 UNC | AAT-202-524 | . |
| 3/8-16 UNC | AAT-202-616 | . |
| Base tool. P/N AA-112..... | | . |

AAT916 EXPENDABLE NUTSERT TOOLS



These expendable tools are ideal for applications such as field repair. They can also be packaged with instructions for use along with quantity of inserts for consumer assembly. Sizes 6-32, 8-32 include a hex key. Sizes 10-32, and larger require a wrench (not included). No warranty on these tools.

| THREAD SIZE | TOOL PART NUMBER | PRICE EACH |
|-------------|------------------|------------|
| 4-40 UNC | AAT-916-440 | . |
| 6-32 UNC | AAT-916-632 | . |
| 8-32 UNC | AAT-916-832 | . |
| 10-24 UNC | AAT-916-1024 | . |
| 10-32 UNF | AAT-916-1032 | . |
| 1/4-20 UNC | AAT-916-420 | . |
| 1/4-28 UNC | AAT-916-428 | . |
| 5/16-18 UNC | AAT-916-518 | . |
| 5/16-24 UNC | AAT-916-524 | . |
| 1/2-13 UNC | AAT-916-813 | . |
| 3/8-16 UNC | AAT-916-616 | . |

AAT312A MASTER NUTSERT ASSORTMENT KIT



The A-T Series master assortment kit is ideal for prototype and maintenance repair applications. The rugged hard shell plastic kit contains quantities of the A-T Series Inserts and the AA 112 Hi-torquer tool. It also contains a full compliment of thread size conversion kits and instruction label. No warranty on these tools.

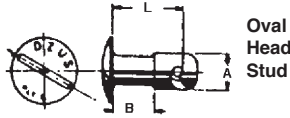
KIT CONTAINS:

| THREAD SIZE | QTY | NUTSERT PART NO. | CONV. KIT |
|-----------------------|-----|------------------|--------------|
| 4-40 UNC | 50 | ATS2-440 | AAT-202-440 |
| 6-32 UNC | 50 | ATS2-632 | AAT-202-632 |
| 8-32 UNC | 50 | ATS2-832 | AAT-202-832 |
| 10-32 UNF | 50 | ATS2-1032 | AAT-202-1032 |
| 1/4-20 UNC | 50 | ATS2-420 | AAT-202-420 |
| 5/16-18 UNC | 50 | ATS2-518 | AAT-202-518 |
| Kit. P/N AAT312A..... | | | |

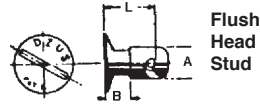
Nutsert available. Sold Each.

HA

DZUS FASTENERS



Oval Head Stud



Flush Head Stud



Wing Head Stud

OVAL HEAD STUD, LONG UNDERCUT

| Model No. | Stud Dimensions | | | Zinc Electroplated | | Model No. | Stainless | | GROMMETS & SNAP RINGS | SPRINGS |
|--------------|-----------------|------|------|--------------------|------------|-------------|-----------|------------|-----------------------|--------------------------|
| | A | B | L | Cat. # | Price Each | | Cat. # | Price Each | | |
| 121J-325-Z3C | .1875 | .075 | .250 | AJ3-25* | - | - | - | - | GA3-175, 200, 250 | S3-150, 175 200,225 |
| 121J-330-Z3C | .1875 | .100 | .300 | AJ3-30 | - | - | - | - | GP3B, GH3 | |
| 121J-335-Z3C | .1875 | .150 | .350 | AJ3-35* | - | 121J-335-SS | AJ3-35SS* | - | SR3SS | |
| 121J-340-Z3C | .1875 | .200 | .400 | AJ3-40 | - | - | - | - | SX-520SS | |
| 121J-425-Z3C | .250 | .100 | .250 | AJ4-25* | - | 121J-425-SS | AJ4-25SS* | - | - | GA4-225, 250, 275, 300 |
| 121J-430-Z3C | .250 | .100 | .300 | AJ4-30 | - | 121J-430-SS | AJ4-30SS | - | - | |
| 121J-435-Z3C | .250 | .150 | .350 | AJ4-35* | - | 121J-435-SS | AJ4-35SS* | - | - | |
| 121J-440-Z3C | .250 | .200 | .400 | AJ4-40 | - | 121J-440-SS | AJ4-40SS | - | - | |
| 121J-445-Z3C | .250 | .225 | .450 | AJ4-45* | - | - | - | - | - | |
| 121J-450-Z3C | .250 | .250 | .500 | AJ4-50 | - | - | - | - | - | |
| 121J-530-Z3C | .3125 | .125 | .300 | AJ5-30 | - | 121J-530-SS | AJ5-30SS | - | - | |
| 121J-535-Z3C | .3125 | .125 | .350 | AJ5-35* | - | 121J-535-SS | AJ5-35SS* | - | - | |
| 121J-540-Z3C | .3125 | .190 | .400 | AJ5-40 | - | 121J-540-SS | AJ5-40SS | - | - | |
| 121J-545-Z3C | .3125 | .190 | .450 | AJ5-45* | - | - | - | - | - | |
| 121J-550-Z3C | .3125 | .250 | .500 | AJ5-50 | - | - | - | - | - | |
| 121J-560-Z3C | .3125 | .300 | .600 | AJ5-60 | - | - | - | - | - | |
| 121J-570-Z3C | .3125 | .400 | .700 | AJ5-70 | - | - | - | - | - | |
| 121J-635-Z3C | .375 | .150 | .350 | AJ6-35* | - | - | - | - | - | |
| 121J-640-Z3C | .375 | .190 | .400 | AJ6-40 | - | - | - | - | - | |
| 121J-650-Z3C | .375 | .250 | .500 | AJ6-50 | - | - | - | - | - | |
| 121J-660-Z3C | .375 | .300 | .600 | AJ6-60 | - | - | - | - | - | |
| 121J-670-Z3C | .375 | .350 | .700 | AJ6-70 | - | - | - | - | - | |
| 121J-740-Z3C | .4375 | .190 | .400 | AJ7-40 | - | - | - | - | - | |
| 121J-750-Z3C | .4375 | .250 | .500 | AJ7-50 | - | - | - | - | - | |
| 121J-760-Z3C | .4375 | .300 | .600 | AJ7-60 | - | - | - | - | - | |
| 121J-770-Z3C | .4375 | .350 | .700 | AJ7-70 | - | - | - | - | - | |
| | | | | | | | | | GA6-350, 375, 425 | S6-225, 250, 275 300 |
| | | | | | | | | | GP6B, GH6 | |
| | | | | | | | | | SR6SS | |
| | | | | | | | | | SX-518SS | |
| | | | | | | | | | GA7-375, 475, 525 | S7-225, 250, 275, 300 |
| | | | | | | | | | GH7 | |
| | | | | | | | | | SR7SS | |
| | | | | | | | | | SX-519SS | |

HA

FLUSH HEAD STUD, LONG UNDERCUT

| Model No. | Stud Dimensions | | | Zinc Electroplated | | Model No. | Stainless | | GROMMETS & SNAP RINGS | SPRINGS |
|--------------|-----------------|------|------|--------------------|------------|-------------|-----------|------------|-----------------------|-----------------------------|
| | A | B | L | Cat. # | Price Each | | Cat. # | Price Each | | |
| 126J-330-Z3C | .1875 | .150 | .300 | FJ3-30 | - | - | - | - | GP3B-GH3 | S3-150, 175, 200, 225 |
| 126J-335-Z3C | .1875 | .175 | .350 | FJ3-35* | - | - | - | - | SR3SS | |
| 126J-340-Z3C | .1875 | .200 | .400 | FJ3-40 | - | - | - | - | SX-520SS | |
| - | .250 | .150 | .300 | N/A | N/A | 126J-430-SS | FJ4-30SS | - | - | GF4-125, 150, 175, 200 |
| 126J-435-Z3C | .250 | .175 | .350 | FJ4-35* | - | 126J-435-SS | FJ4-35SS1 | - | - | |
| 126J-440-Z3C | .250 | .200 | .400 | FJ4-40 | - | 126J-440-SS | FJ4-40SS | - | - | |
| 126J-445-Z3C | .250 | .225 | .450 | FJ4-45* | - | 126J-445-SS | FJ4-45SS1 | - | - | |
| 126J-450-Z3C | .250 | .250 | .500 | FJ4-50 | - | - | - | - | - | |
| 126J-540-Z3C | .3125 | .225 | .400 | FJ5-40 | - | 126J-540-SS | FJ5-40SS | - | - | |
| 126J-550-Z3C | .3125 | .250 | .500 | FJ5-50 | - | - | - | - | - | |
| 126J-560-Z3C | .3125 | .300 | .600 | FJ5-60 | - | - | - | - | - | |
| 126J-650-Z3C | .375 | .250 | .500 | FJ6-50 | - | - | - | - | - | |
| 126J-660-Z3C | .375 | .300 | .600 | FJ6-60 | - | - | - | - | - | |
| 126J-670-Z3C | .375 | .350 | .700 | FJ6-70 | - | - | - | - | - | |
| 126J-750-Z3C | .4375 | .250 | .500 | FJ7-50 | - | - | - | - | - | |
| 126J-760-Z3C | .4375 | .300 | .600 | FJ7-60 | - | - | - | - | - | |
| 126J-770-Z3C | .4375 | .350 | .700 | FJ7-70 | - | - | - | - | - | |
| | | | | | | | | | GF5-175, 225, 250 | S5A200, 225 250, 275 |
| | | | | | | | | | GP5B, GH5 | |
| | | | | | | | | | SR5SS, SX-510SS | |
| | | | | | | | | | GF6-218, 250 | S6-225, 250, 275 300 |
| | | | | | | | | | GP6B, GH6 | |
| | | | | | | | | | SR6SS, SX-518SS | |
| | | | | | | | | | GF7-250, 325, 400 | S7-225, 250, 275, 300 |
| | | | | | | | | | GH7, SR7SS, SX-519SS | |
| | | | | | | | | | | |

WING HEAD STUD, LONG UNDERCUT

(A, B, L dimensions for AJW are same as for AJ; P, Q, R dimensions given are for wing head)

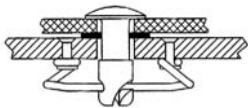
| Model No. | Stud Dimensions | | | Zinc Electroplated | | Model No. | Stainless | | GROMMETS & SNAP RINGS | SPRINGS |
|---------------|-----------------|------|------|--------------------|------------|-----------|------------|------------|------------------------|-------------------------|
| | A | B | L | Cat. # | Price Each | | Cat. # | Price Each | | |
| 121J-W325-Z3C | .1875 | .075 | .250 | AJW3-25* | - | - | AJW3-25SS* | - | GA3-175, 200, 250 | S3-150, 175 200, 225 |
| 121J-W330-Z3C | .1875 | .100 | .300 | AJW3-30 | - | - | - | - | GP3B, GH3 | |
| 121J-W335-Z3C | .1875 | .150 | .350 | AJW3-35* | - | - | - | - | SR3SS | |
| 121J-W340-Z3C | .1875 | .200 | .400 | AJW3-40 | - | - | - | - | SX-520SS | |
| 121J-W425-Z3C | .250 | .100 | .250 | AJW4-25* | - | - | - | - | GA4-225, 250, 275, 300 | S4-200, 225 |
| 121J-W430-Z3C | .250 | .100 | .300 | AJW4-30 | - | - | - | - | GP4B, GH4 | |
| 121J-W435-Z3C | .250 | .150 | .350 | AJW4-35* | - | - | - | - | SR4SS | |
| 121J-W440-Z3C | .250 | .200 | .400 | AJW4-40 | - | - | - | - | SX-523SS | |
| 121J-W530-Z3C | .3125 | .125 | .300 | AJW5-30 | - | - | - | - | - | |
| 121J-W540-Z3C | .3125 | .190 | .400 | AJW5-40 | - | - | - | - | GA5-312, 350, 375 | S5A200, 225 |
| 121J-W545-Z3C | .3125 | .200 | .450 | AJW5-45* | - | - | - | - | SR5SS | |
| 121J-W550-Z3C | .3125 | .250 | .500 | AJW5-50 | - | - | - | - | SX-510SS | |

CAD PLATED FASTENERS ARE NO LONGER AVAILABLE DUE TO ENVIROMENTAL REASONS.

*No longer available after our current stock is depleted. Please order next longer size.

DZUS FASTENERS

STUD AND SPRING SELECTION TABLES



1. Find total thickness (distance) from underside of stud head to point of spring attachment).
2. Select stud "L" and spring "H" dims.

| Size 3 Stud, S3 Spring USE | | | Size 4 Stud, S4 Spring USE | | |
|-------------------------------|-------------|---------------|-------------------------------|-------------|---------------|
| Total Thickness | Stud Dim. L | Spring Dim. H | Total Thickness | Stud Dim. L | Spring Dim. H |
| .045 - .069 | -25 | -225 | .050 - .074 | -25 | -225 |
| .070 - .094 | -25 | -200 | .075 - .099 | -25 | -200 |
| .095 - .119 | -30 | -225 | .100 - .124 | -30 | -225 |
| .120 - .144 | -30 | -200 | .125 - .149 | -30 | -200 |
| .145 - .169 | -30 | -175 | .150 - .174 | -35 | -225 |
| .170 - .194 | -30 | -150 | .175 - .199 | -35 | -200 |
| .195 - .219 | -35 | -175 | .200 - .224 | -40 | -225 |
| .220 - .224 | -35 | -150 | .225 - .249 | -40 | -200 |
| .245 - .269 | -40 | -175 | .250 - .274 | -45 | -225 |
| .270 - .294 | -40 | -150 | .275 - .299 | -45 | -200 |
| | | | .300 - .324 | -50 | -225 |
| | | | .325 - .344 | -50 | -200 |

| Size 5 Stud, S5A Spring USE | | | Size 6 Stud, S6 Spring Size 7 Stud, S7 Spring USE | | |
|--------------------------------|-------------|---------------|---|-------------|---------------|
| Total Thickness | Stud Dim. L | Spring Dim. H | Total Thickness | Stud Dim. L | Spring Dim. H |
| .055 - .079 | -30 | -275 | .090 - .114 | -35 | -300 |
| .080 - .104 | -30 | -225 | .115 - .139 | -35 | -275 |
| .105 - .129 | -30 | -200 | .140 - .164 | -35 | -300 |
| .130 - .154 | -30 | -200 | .165 - .189 | -40 | -275 |
| .155 - .179 | -40 | -275 | .190 - .214 | -40 | -250 |
| .180 - .204 | -40 | -250 | .215 - .239 | -40 | -225 |
| .205 - .229 | -40 | -225 | .240 - .264 | -50 | -300 |
| .230 - .254 | -40 | -200 | .225 - .249 | -40 | -200 |
| .255 - .279 | -50 | -275 | .265 - .289 | -50 | -275 |
| .280 - .304 | -50 | -250 | .290 - .314 | -50 | -250 |
| .305 - .329 | -50 | -225 | .315 - .339 | -50 | -225 |
| .330 - .354 | -50 | -200 | .340 - .364 | -60 | -300 |
| .355 - .379 | -60 | -275 | .365 - .389 | -60 | -275 |
| .380 - .404 | -60 | -250 | .390 - .414 | -60 | -250 |
| .405 - .429 | -60 | -225 | .415 - .439 | -60 | -225 |
| .430 - .454 | -60 | -200 | .440 - .464 | -70 | -300 |
| .455 - .479 | -70 | -275 | .465 - .489 | -70 | -275 |
| .480 - .504 | -70 | -250 | .490 - .514 | -70 | -250 |
| .505 - .529 | -70 | -225 | .515 - .539 | -70 | -225 |
| .530 - .554 | -70 | -200 | | | |

INSTALLATION TOOLS

| Part No. | Description (Installs:) | Price |
|----------|--|-------|
| 04-01441 | A, AJ3 Oval Head Studs & Grommets | . |
| 04-01410 | A4, AJ4 Oval Head Studs & Grommets | . |
| 04-01409 | A5, AJ5 Oval Head Studs & Grommets | . |
| 04-01442 | A6.5, AJ6.5 Oval Head Studs & Grommets | . |
| 04-01413 | A7, AJ7 Oval Head Studs & Grommets | . |
| 04-01447 | F5, FJ5 Flush Head Studs & Grommets | . |
| 04-01637 | F6.5, FA6.5, FJ6.5 Flush Head Studs & Grommets | . |

* Note: A5 tool is specially designed to install grommets in Bonanza cowlings without removing cowling brackets. This will save you alot of time.

| Description | Part No. | Price |
|--|----------|-------|
| Modified C-Clamp (Required and Accepts All Attachment Sets) | 12-02272 | . |

RETAINING SPRINGS

When there is a gap between the top and bottom panels, a retaining spring is used to hold the stud in locking position for alignment with receptacle.

| Model No. | Part No. | Price ea |
|---------------|----------|----------|
| 1219-24520-SS | SX-520SS | . |
| 1219-24523-SS | SX-523SS | . |
| 1219-24510-SS | SX-510SS | . |
| 1219-24518-SS | SX-518SS | . |
| 1219-24519-SS | SX-519SS | . |

SNAP RINGS

A snap ring is used when there is not a lot of pull-out load. This ring is expandable easily installed with pliers or screwdriver and takes little space.

| Model No. | Part No. | Price ea |
|------------|----------|----------|
| 1219-R3-SS | SR3SS | . |
| 1219-R4-SS | SR4SS | . |
| 1219-R5-SS | SR5SS | . |
| 1219-R6-SS | SR6SS | . |
| 1219-R7-SS | SR7SS | . |

SPRINGS



P/N S3-150

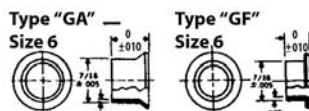


P/N S6A-250

| Model No. | Part No. | Price Ea. | Model No. | Part No. | Price Ea. |
|----------------|-------------|-----------|---------------|----------|-----------|
| 1219-3175-Z3Y | S3-175 | . | 1219-5300-Z3Y | S5A-300 | . |
| 1219-3200-Z3Y | S3-200 | . | 1219-6225-Z3Y | S6A-225 | . |
| 1219-3225-Z3Y | S3-225 | . | 1219-6250-Z3Y | S6A-250 | . |
| 1219-4220-Z3Y | S4-200 | . | 1219-6275-Z3Y | S6A-275 | . |
| 1219-4225-Z3Y | S4-225 | . | 1219-6300-Z3Y | S6-300 | . |
| 1219-4250-Z3Y | S4-250 | . | 1219-6400-Z3Y | S6A-400 | . |
| 1219-A4200-Z3Y | S4A-200 | . | 1219-6425-Z3Y | S6A-425 | . |
| | S5-325-SURP | . | 1219-6325-Z3Y | S5A-325 | . |
| 1219-A5200-Z3Y | S5A-200 | . | 1219-7225-Z3Y | S7-225 | . |
| 1219-A5225-Z3Y | S5A-225 | . | 1219-7250-Z3Y | S7-250 | . |
| 1219-A5250-Z3Y | S5A-250 | . | 1219-7275-Z3Y | S7-275 | . |
| 1219-A5275-Z3Y | S5A-275 | . | 1219-7300-Z3Y | S7-300 | . |

The dash number represents the height ("H" dimension) of the spring.

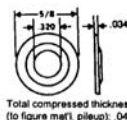
FULL GROMMETS



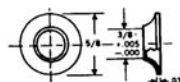
A full grommet is used when protection of the hole is a definite consideration. It protects panel finish and reduces stud play. A tool is required for installation. The "GA" type full grommet is used with a protruding head stud, and the "GF" type with a flush head stud.

ALUMINUM

| Outer Panel Thickness | Type "GA" | | | Type "GF" | | |
|-----------------------|-----------|----------|-------|-----------|----------|-------|
| | Model No. | Part No. | Price | Model No. | Part No. | Price |
| .015 - .025 | 1271-3175 | GA3-175 | . | --- | N/A | --- |
| .026 - .050 | 1271-200 | GA3-200 | . | --- | N/A | --- |
| .051 - .094 | 1271-250 | GA3-250 | . | --- | N/A | --- |
| .015 - .025 | --- | GA4-225 | --- | 1276-4125 | GF4-125 | . |
| .026 - .050 | 1271-4250 | GA4-250 | . | 1276-4150 | GF4-150 | . |
| .051 - .075 | 1271-4275 | GA4-275 | . | 1276-4175 | GF4-175 | . |
| .076 - .100 | 1271-4300 | GA4-300 | . | 1276-4200 | GF4-200 | . |
| .031 - .062 | 1271-5312 | GA5-312 | . | 1276-5175 | GF5-175 | . |
| .063 - .094 | 1271-5350 | GA5-350 | . | 1276-5225 | GF5-225 | . |
| .095 - .125 | 1271-5375 | GA5-375 | . | 1276-5250 | GF5-250 | . |
| .040 - .065 | 1271-6350 | GA6-350 | . | --- | GF6-218 | --- |
| .066 - .100 | 1271-6375 | GA6-375 | . | 1276-6250 | GF6-250 | . |
| .101 - .135 | 1271-6425 | GA6-425 | . | --- | --- | --- |
| .050 - .095 | 1271-7375 | GA7-375 | . | 1276-7250 | GF7-250 | . |
| .096 - .156 | --- | GA7-475 | --- | --- | GF7-325 | --- |
| .157 - .218 | 1271-7525 | GA7-525 | --- | 1276-7400 | GF7-400 | . |



Total compressed thickness (to figure mat'l pileup): .045



HALF GROMMETS

A half grommet does not break easily, and it flattens but guarantees hold of the stud. It is used when protection of the hole is not a consideration, but protection of panel finish might be. The "GH" type half grommet is installed with a tool; the "GP" type is pushed on by hand.

| Type "GP" Thermoplastic | | | Type "GH" Aluminum | | |
|-------------------------|----------|----------|--------------------|----------|----------|
| Model No. | Part No. | Price ea | Model No. | Part No. | Price ea |
| 127P-3B | GP3B | . | 127H-3 | GH3 | . |
| 127P-4B | GP4B | . | 127H-4 | GH4 | . |
| 127P-5B | GP5B | . | 127H-5 | GH5 | . |
| 127P-6B | GP6B | . | 127H-6 | GH6 | . |
| 127P-7B | GP7B | --- | 127H-7 | GH7 | . |

DZUS FASTENER SPRING ADJUSTER



The MS-7301 tool easily adjusts Dzus fastener springs for a perfect fit every time. Great for Warbirds and vintage aircraft. Bend springs in or out with a few simple turns. P/N 04-00957.....

DZUS DRIVER

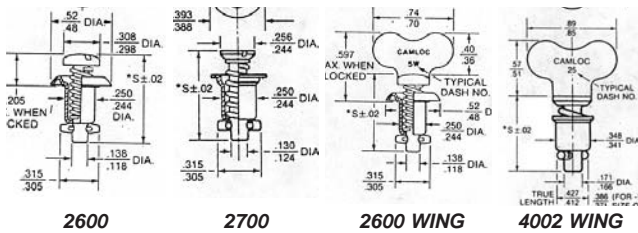
The MS-Driver is a great tool for locking and unlocking Dzus fasteners. The large handle gives you plenty of torque and is comfortable in the hand. The blade has a radius end to fit fastener slots better than a standard screwdriver and is heat treated steel with zinc plating for long life. P/N 04-00958.....



HA

CAMLOC FASTENERS

The 2600 and 2700 series Camloc fasteners exceed requirements for MIL-F-5591, Style 3, Size 2. Shear and tensile strength: 300 lbs. (ultimate), 200 lbs. (rated). Studs and washers listed are made of steel. The receptacles are made of copper base alloy. All components listed are rated to 450° F. The 4002 series fasteners are considerably stronger than the 2600 and 2700 series. Shear and tensile strength: 1050 lbs. (ultimate), 700 lbs. (rated). All studs and grommets listed are made of steel. Rated to 450° F.



2600 STUDS

| Dash No. | CAD Plated | | Stainless | | CAD Plated | |
|----------|--------------------|------------------------|--------------------|---------------|------------|------------|
| | 2600 Slot Price Ea | 26S8 Phillips Price Ea | 2600 Slot Price Ea | Wing Price Ea | Price Each | Price Each |
| -1 | | | -1S | --- | --- | --- |
| -2 | | | -2S | | 2600-2W | |
| -3 | | | -3S | | 2600-3W | |
| -4 | | | -4S | | 2600-4W | |
| -5 | | | -5S | | 2600-5W | |
| -6 | | | -6S | | 2600-6W | |
| -7 | | | -7S | | 2600-7W | |
| -8 | | | -8S | | 2600-8W | |
| -9 | | | -9S | | 2600-9W | |
| -10 | | | -10S | | 2600-10W | |
| -11 | | | --- | --- | 2600-11W | |
| -12 | | | --- | --- | 2600-12W | |
| -13 | | | --- | --- | --- | --- |
| -14 | | | --- | --- | 2600-14W | |

2700 STUDS

| Dash No. | CAD Plated | | Stainless | |
|----------|--------------------|------------------------|-----------|--------------------|
| | 2700 Slot Price Ea | 27S3 Phillips Price Ea | Dash No. | 2700 Slot Price Ea |
| -1 | | | -1S | |
| -2 | | | -2S | |
| -3 | | | -3S | |
| -4 | | | -4S | |
| -5 | | | -5S | |
| -6 | | | -6S | |
| -7 | | | -7S | |
| -8 | | | -8S | |
| -9 | | | -9S | |
| -10 | | | -10S | |
| -11 | | | --- | --- |
| -13 | | | --- | --- |
| -14 | | | --- | --- |

4002 STUDS

| Dash No. | CAD Plated / Stainless | | | | | | | |
|----------|-------------------------------|-----------------------------------|---------------------------|----------|-----------------------|--------------------------|------------|------------|
| | 4002 CAD Plated Slot Price Ea | 40S5 CAD Plated Phillips Price Ea | SS Phillips 40S5 Price Ea | Dash No. | 4002 SS Slot Price Ea | Wing CAD Plated Price Ea | Price Each | Price Each |
| -2 | | | 40S5-2S | -2S | | 4002-2W | | |
| -3 | | | 40S5-3S | -3S | | 4002-3W | | |
| -4 | | | 40S5-4S | -4S | | 4002-4W | | |
| -5 | | | 40S5-5S | -5S | | 4002-5W | | |
| -6 | | | 40S5-6S | -6S | | 4002-6W | | |
| -7 | | | 40S5-7S | -7S | | --- | --- | --- |
| -8 | | | 40S5-8S | -8S | | 4002-8W | | |
| -9 | | | 40S5-9S | -9S | | 4002-9W | | |
| -10 | | | 40S5-10S | --- | | 4002-10W | | |
| -11 | | | --- | --- | | 4002-11W | | |
| -12 | | | --- | --- | | 4002-12W | | |
| -13 | | | --- | --- | | --- | --- | --- |
| -14 | | | --- | --- | | --- | --- | --- |
| -15 | | | --- | --- | | --- | --- | --- |
| -16 | | | --- | --- | | --- | --- | --- |
| -17 | | | --- | --- | | --- | --- | --- |

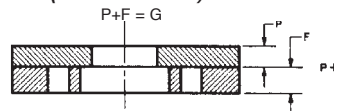
RECEPTACLES

| Rivet Holes | 2600, 2700 Series Part No. | Price Each | 4002 Series Part No. | Price Each |
|-------------|----------------------------|------------|----------------------|------------|
| Plain | 212-12N | | 214-16N | |
| Cntersunk | 212-12ND* | | 214-16ND* | |
| Plain | Floating Bronze | | 244-16 | |

2600 / 2700 STUD LENGTH SELECTION

Total material thickness "G" consists of the thickness of all materials to be fastened. This must include the thickness of the material "P" to which the stud assembly is attached, the material "F" to which the receptacle is attached plus gaskets (if used) and allowance for paint or other protective finishes. If the total thickness is near the upper limit of the stud grip range, the next longer stud should be used. This will still maintain positive locking of the fastener under vibration.

P (panel thickness)062
 F (frame thickness) + .062
 GRIP (total thickness) = .124



STUD SELECTION TABLE Using 212-12 Receptacle

| Total Grip Thickness | Use 2600 | Use 2700 |
|----------------------|----------|----------|
| .020 - .059 | 2600-1 | 2700-1 |
| .060 - .089 | 2600-2 | 2700-2 |
| .090 - .119 | 2600-3 | 2700-3 |
| .120 - .149 | 2600-4 | 2700-4 |
| .150 - .179 | 2600-5 | 2700-5 |
| .180 - .209 | 2600-6 | 2700-6 |
| .210 - .239 | 2600-7 | 2700-7 |
| .240 - .269 | 2600-8 | 2700-8 |
| .270 - .299 | 2600-9 | 2700-9 |
| .300 - .329 | 2600-10 | 2700-10 |
| .330 - .359 | 2600-11 | 2700-11 |
| .360 - .389 | 2600-12 | 2700-12 |
| .390 - .419 | 2600-13 | 2700-13 |
| .420 - .449 | 2600-14 | 2700-14 |

4002 SERIES (LARGE HEAD) STUD SELECTION

To select the proper length stud, first select the grommet, for example 4002-G. Next, select the receptacle, such as 214-16. After determining the total grip thickness, use the grommet column under which the selected grommet and receptacle appear. Use the dash number which appears opposite the determined total grip thickness.

Example: If the total determined grip thickness "G" was .144, the stud dash number for the above 4002-G grommet and 214-16 receptacle would be -4. The stud part number would be 4002-4.

| Total Grip Thickness Range "G" | Stud Dash Number | |
|--------------------------------|------------------------------------|--|
| | 4002-G Grommet & 214-16 Receptacle | 4002-N, 4002-O Grommet & 214-16 Receptacle |
| .021 - .050 | --* | -1 |
| .055 - .080 | --* | -2 |
| .081 - .110 | -2* | -3 |
| .111 - .140 | -3 | -4 |
| .141 - .170 | -4 | -5 |
| .171 - .200 | -5 | -6 |
| .201 - .230 | -6 | -7 |
| .231 - .260 | -7 | -8 |
| .261 - .290 | -8 | -9 |
| .291 - .320 | -9 | -10 |
| .321 - .350 | -10 | -11 |
| .351 - .380 | -11 | -12 |
| .381 - .410 | -12 | -13 |
| .411 - .440 | -13 | -14 |
| .441 - .470 | -14 | -15 |
| .471 - .500 | -15 | -16 |
| .501 - .530 | -16 | -17 |
| .531 - .560 | -17 | - |

*4002-G grommet requires .090" minimum grip.

2600, 2700 SERIES RETAINING WASHERS

Retaining washers are required for studs of -5 length or greater. Use split washer 2600-SW2 where it is desirable to have the stud fall away for minimum internal projection. Use internal tooth washer 2600-LW where it is desirable to retain the stud assembly rigidly.

P/N 2600-SW-2 P/N 2600-LW.....

4002 SERIES GROMMETS & SNAP RINGS

| Description | Part Number | Price Each |
|-----------------------------------|-------------|------------|
| CAD Plated | | |
| Flush Grommet | 4002-G | |
| Plus-Flush Grommet | 4002-N | |
| Stud Retaining Grommet | 4002-O | |
| High Shear Flush Grommet | 40G1-5 | |
| Wide Area Grommet | 4002-N3 | |
| Grommet Retaining Ring | R4G | |
| High Shear Grommet Retaining Ring | R4T | |
| Camloc Retaining Ring | 4002-SW | |
| Stainless | | |
| Flush Grommet | 4002-GS | |
| Flush Grommet | 4002-HS | |
| Plus Flush Grommet | 4002-NS | |
| Flush Grommet | 4002-OS | |

CAMLOC FASTENERS

COWLING KITS

| Aircraft Make & Model | Stainless | | | | Cad-Plated Phillips | |
|--|-----------|-------|----------|-------|---------------------|-------|
| | Slotted | | Phillips | | P/N | Price |
| | P/N | Price | P/N | Price | | |
| Aerosport | | | 04-00327 | . | | |
| Aero Commander 690 | 04-00286 | . | | | 04-00336 | . |
| Aerostar | 04-00287 | . | | | 04-00337 | . |
| Beech Baron B55 ('69 SN TC1230) ^A | 04-00288 | . | 04-00329 | . | | |
| Beech Baron B58 | 04-00289 | . | | | 04-00338 | . |
| Beech Baron P58 | 04-00291 | . | | | | |
| Bellanca Scout 8GCBC | 04-00292 | . | | | | |
| Bellanca Viking | 04-00293 | . | | | 04-00339 | . |
| Cessna 150 (1967-77) | 04-00294 | . | 04-00331 | . | | |
| Cessna 172 (1967-82) | 04-00297 | . | 04-00332 | . | | |
| Cessna 172RG (1984) | 04-00298 | . | | | 04-00341 | . |
| Cessna 172XP | 04-00299 | . | | | 04-00342 | . |
| Cessna 177 | 04-00301 | . | 04-00333 | . | | |
| Cessna 182 (1961-69) | 04-00303 | . | | | | |
| Cessna 182 (1971 SN 60752) | 04-00305 | . | 04-00334 | . | 04-00343 | . |
| Cessna 182 (1973 & up) | 04-00307 | . | | | 04-00344 | . |
| Cessna 182RG | 04-00309 | . | 04-01942 | . | 04-01943 | . |
| Cessna 206 | 04-00310 | . | | | 04-00347 | . |
| Cessna 210 | 04-00311 | . | | | 04-00348 | . |
| Cessna 310K | 04-00312 | . | | | 04-00349 | . |
| Cessna 320 | 04-00313 | . | | | 04-00351 | . |
| Cessna 337 | 04-00315 | . | | | 04-00352 | . |
| Cessna 340 | 04-00317 | . | | | 04-00353 | . |
| Cessna 414 | 04-00319 | . | | | 04-00354 | . |
| Cessna 421 | 04-00320 | . | | | 04-00355 | . |
| Mooney 20J | 04-00321 | . | | | | |
| Piper PA18 | 04-00322 | . | | | | |
| Piper Cheyenne | 04-00006 | . | | | | |
| Piper Comanche Twin (Nose) | 04-00324 | . | | | | |
| Piper Comanche Twin | 04-00325 | . | | | | |

Kit contains Southco or Camloc studs, washers, retainers & a push tool for the Southco studs. ^A&^BRetainers for Dzus fastener not included. ^B Dzus Fastener is slotted.

The nose cowl components, if applicable, are not included in any cowling kit.

HA



QUICK RELEASE PINS

These pins, of stainless steel, are made to exacting standards. Push button on top contracts and releases two (or four) balls at end of shank. These balls lock onto and release from part for fast removal. The following types and sizes are most commonly used for hang gliders. Not for structural use on aircraft. Request quote on special sizes (25 piece minimum).

| Part No. | Alternate Part No. | MS Part No. | Head Type | Shank Dia. | Leng. | Price |
|----------|--------------------|-------------|-----------|------------|---------|-------|
| 04-01486 | LG4S-T-0.343 | ---- | TEE | 1/4" | 11/32" | . |
| 04-01473 | LG4S-T-1.400 | MS17985-414 | TEE | 1/4" | 1-9/32" | . |
| 04-01487 | LG4S-T-2.080 | MS17985-421 | TEE | 1/4" | 2-1/32" | . |

Less 10% for 12, Less 15% for 25, Less 20% for 50.
May be assorted.



CAMLOC ACCESS DOORS FOR WHEEL PANTS

These 1" diameter spring loaded access doors can be riveted into your wheel pants. They open inward, so that using an appropriate tool, you can check pressure or inflate your tires easily without removing the wheel pants. Made of stainless steel which can be polished if desired. Recommended by Rutan

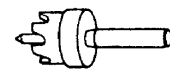
Aircraft Factory.

P/N 05-02124 ea.

CAMLOC FASTENER TOOLS



PLIERS P/N 4P3



HOLE SAWS

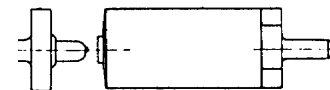
Stock Sizes:
P/N 04-01516 (.471" dia.).....
P/N 04-01517 (.687" dia.).....

Other diameters available



2600-LW LOCKWASHER TOOL

P/N T98-1



**#2S200M & F
2700 SERIES DIMPLING TOOL**

P/N 2S200M-1
1/4"x9/16"L
P/N 04-01636
1/4"x9/16"L
P/N 2S200M-2
5/16"x5/8"L



**4002 SERIES
SNAP RING TOOL**

P/N 04-01529



RECEPTACLE DRILL JIG
For 4002 Series and 2600/2700 Series receptacles

P/N 01-00155

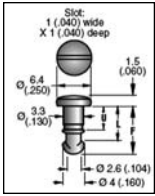


MEASURING TOOL

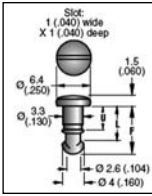
This handy tool is all stainless steel and engraved with Camloc fastener lengths from -2 to -11. Simple slide the Camloc fastener into the tool to determine the size (dash number) of the Camloc.
P/N 12-01598

SOUTHCO FASTENERS

FLUSH SLOTTED

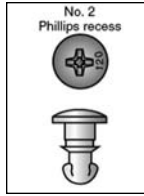


OVAL SLOTTED

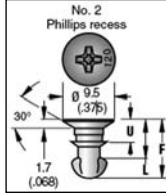


SOUTHCO STUDS

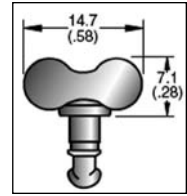
OVAL PHILLIPS



FLUSH PHILLIPS



WING HEAD



| Flush Head #82 Dacrotized Slotted | |
|-----------------------------------|-------|
| Part No. | Price |
| 82-14-120-16 | . |
| 82-28-160-16 | . |
| Oval Head #82 Dacrotized Slotted | |
| Part No. | Price |
| 82-11-100-16 | . |
| 82-11-120-16 | . |
| 82-11-140-16 | . |
| 82-11-160-16 | . |
| 82-11-180-16 | . |
| 82-11-200-16 | . |
| 82-11-220-16 | . |
| 82-11-240-16 | . |
| 82-11-260-16 | . |

| Oval Head #82 Stnls Slotted | | |
|------------------------------|-------|--|
| Part No. | Price | |
| 82-11-100-20 | . | |
| 82-11-120-20 | . | |
| 82-11-140-20 | . | |
| 82-11-160-20 | . | |
| 82-11-180-20 | . | |
| 82-11-200-20 | . | |
| 82-11-220-20 | . | |
| 82-11-240-20 | . | |
| 82-11-280-20 | . | |
| Oval Head #82 Stnls Phillips | | |
| Part No. | Price | |
| 82-19-120-20 | . | |
| 82-19-140-20 | . | |
| 82-19-160-20 | . | |
| 82-19-180-20 | . | |
| 82-19-200-20 | . | |
| 82-19-220-20 | . | |

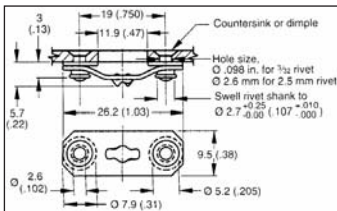
| Flush Head #82 Stnls Phillips | | |
|-------------------------------|-------|--|
| Part No. | Price | |
| 82-28-100-16 | . | |
| 82-28-120-16 | . | |
| 82-28-140-16 | . | |
| 82-28-160-16 | . | |
| 82-28-180-16 | . | |
| 82-28-200-16 | . | |
| 82-28-220-16 | . | |
| 82-28-240-16 | . | |
| 82-28-260-16 | . | |
| 82-28-280-16 | . | |
| 82-28-300-16 | . | |
| 82-28-320-16 | . | |
| 82-28-340-16 | . | |
| Wing Head #82 Dacrotized | | |
| Part No. | Price | |
| 82-12-100-16 | . | |
| 82-12-120-16 | . | |

| 82-12-140-16 | . | |
|-----------------------------|-------|--|
| 82-12-160-16 | . | |
| 82-12-180-16 | . | |
| 82-12-200-16 | . | |
| 82-12-220-16 | . | |
| 82-12-240-16 | . | |
| 82-12-300-16 | . | |
| 82-12-340-16 | . | |
| Oval Head #85 Stnls Slotted | | |
| Part No. | Price | |
| 85-11-100-20 | . | |
| 85-11-140-20 | . | |
| 85-11-160-20 | . | |
| 85-11-180-20 | . | |
| 85-11-200-20 | . | |
| 85-11-220-20 | . | |
| 85-11-240-20 | . | |
| 85-11-260-20 | . | |
| 85-11-280-20 | . | |

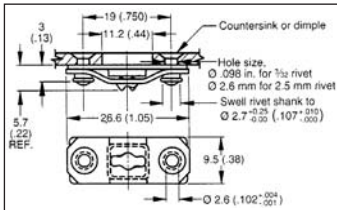
| 85-11-300-20 | . | |
|--|-------|--|
| Wing Head #85 Zinc plate, chromate plus sealer | | |
| Part No. | Price | |
| 85-12-140-16 | . | |
| 85-12-160-16 | . | |
| 85-12-180-16 | . | |
| 85-12-200-16 | . | |
| 85-12-220-16 | . | |
| 85-12-240-16 | . | |
| 85-12-260-16 | . | |
| 85-12-280-16 | . | |
| 85-12-300-16 | . | |
| 85-12-320-16 | . | |
| 85-12-340-16 | . | |
| 85-12-360-16 | . | |
| 85-12-380-16 | . | |
| 85-12-400-16 | . | |

HA

#82 SOUTHCO RECEPTACLES

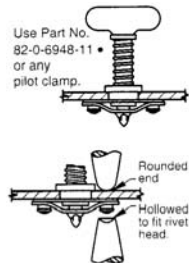


FLOATING FOR RIVETING W/O BASE - This space saving stainless steel receptacle offers optimum weight savings by eliminating base.
P/N 82-35-295-20 /ea



FLOATING FOR RIVETING W/ BASE - Full-floating dacrotized steel receptacle is mounted to inside panel with two 3/32" rivets. Compact dimensions save space and weight.
P/N 82-35-302-15 /ea

FIXED FOR WELDING WITH BASE - Exactly the same as the receptacle with base above except this receptacle features two welding studs for installation by welding rather than rivets.
P/N 82-35-303-15 /ea



CLIP-ON RECEPTACLES - These versatile receptacles will fit material thickness from .020 to .190 by simply slipping over the hole and clipping in place. Easily removed as well, these receptacles do not require welding or riveting.
P/N 82-47-113-200 (Stainless Steel) /ea
P/N 82-47-113-150 (Steel) /ea

RUBBER VIBRATION ISOLATION RECEPTACLES - Use these receptacles where it is necessary to isolate vibration between panels.
P/N 82-35-306-10 /ea

#85 RECEPTACLES

RIVET TYPE - Receptacle Spring: 1064 steel, dacrotized
Base: 1010 steel, dacrotized. P/N 85-35-295-15 /ea

RECEPTACLE SPRING: 17-7 PH, stainless steel, passivated
BASE: 305 stainless steel, passivated. P/N 85-35-295-20 /ea

WELD TYPE - Receptacle Spring: 1064 steel, dacrotized
Base: 1010 steel, dacrotized Rivet: steel, copper-plated.
P/N 85-35-296-15 /ea

CLIP-ON TYPE - 17-7 PH stainless steel, passivated.
P/N 85-47-101-20 /ea

DETERMINING SOUTHCO STUD PART NO.

| Stud Length | Selection Chart | Material Thickness |
|-------------|-----------------|--------------------|
| .090 - .109 | 100 | |
| .110 - .129 | 120 | |
| .130 - .149 | 140 | |
| .150 - .169 | 160 | |
| .170 - .189 | 180 | |
| .190 - .209 | 200 | |
| .210 - .229 | 220 | |
| .230 - .249 | 240 | |
| .250 - .269 | 260 | |
| .270 - .289 | 280 | |

Southco studs are commonly used to secure Cessna cowlings, particularly on models 150, 172, and 177. We stock the popular Southco No. 82 1/4 turn fastener studs, receptacles, and accessories.

TO DETERMINE PART NO.

Select Stud part number using chart above. Example:
82 - 14 - 220 - 16

Southco Fastener Number: 82
Head Type (Slotted): 14
Stud Length: 220
Material Type (Dacrotized): 16

SOUTHCO SEALING WASHER - This black synthetic washer is used under head of Southco Studs. P/N 82-43-201-38 /ea

SOUTHCO EJECTOR SPRING - This stainless steel spring enables the stud head to stand away from the panel when the unit is not fastened. When using the ejector spring, add two grip lengths to stud length to allow for spring and wear washer. P/N 43-13-1-24 /ea

SOUTHCO WEAR WASHER - A plastic washer to reduce wear around the Southco stud. When using wear washer add one grip length to stud length selection. P/N 82-46-101-39 /ea

SOUTHCO SPLIT RING RETAINER - Can be installed by hand or tool, and is fabricated from stainless steel. P/N 82-32-101-20 /ea

SOUTHCO SPLIT RING RETAINER TOOL - Designed to install Southco split ring retainers. P/N 82-0-7596-11 /ea

SOUTHCO PUSH-ON RETAINER - designed for installation using the retainer tool below. Stainless.....P/N 82-32-201-20 /ea
Plastic.....P/N 82-32-301-12 /ea

SOUTHCO PUSH-ON RETAINER TOOL - An easy-to-use tool quickly installs Southco push-on retainers. P/N 82-0-22542-11 /ea

#85 RETAINERS

Split Ring Hand or tool installation. Stainless steel.
P/N 85-34-101-20 /ea
Push-On Tool installation only. 302 Stainless Steel, Passivated
P/N 85-34-201-20 /ea
Nylon Black .P/N 85-34-301-12 /ea

#85 THERMOPLASTIC (CUPPED NYLON) WEAR WASHER

Natural color. Order stud one size longer than size you would use without washer. Adjustment Formula: Add 0.51/.020 to your total material thickness. P/N 85-46-101-39 /ea

CLICK BOND FASTENERS

CLICK BOND FASTENERS

Click Bond Fasteners mount to surfaces with adhesive. They are assembled in a disposable, self-fixturing device of plastic that aligns and holds the fastener in position and under controlled pressure while the bonding material cures. After the installation is completed, the holding fixture is removed and the conventional attachment is made to the fastener. Bonded fasteners eliminate welding or drilling surfaces and result in reinforced substrate strength, leakproof and corrosion resistant attachments. Aircraft Spruce & Specialty Co. offers Click Bond Fasteners in convenient, pre-packaged kits as shown.

CABLE TIE MOUNT KIT



Each cable tie mount in this kit is pre-assembled in a temporary, easy-to-remove fixture that holds the cable tie mount in place and under pressure while the adhesive cures. No additional installation tools are needed. The kit includes four CB3019AA3N cable tie mounts with nylon ties (5" 40 lbs.), one adhesive packet, surface preparation materials, and instructions.

P/N 04-06000

FLOATING NUTPLATE KIT



The Click Bond adhesive bonded floating nutplate has a metal base and is installed using a disposable, elastomeric fixture that temporarily holds the nutplate in place and under pressure while the adhesive cures. The fixture prevents fouling of the clearance hole. No additional tools are needed for making the nutplate attachment. This fastener meets or exceeds the standards set by MIL-N-25027 for push-out, torque-out, and cycle life. Bonded nutplates eliminate composite damaging rivets, reinforce the structure, and reduce installation time. The kit includes four CB2009A3S floating nutplates (10-32) with aluminum baseplate, one adhesive packet, surface preparation materials, and instructions.

P/N 04-06005/ea.

REPAIR PATCH KIT



These self-fixturing surface mounted patches repair small holes and fastener leaks without access to the reverse side of the surface. The patches are adhesively bonded to flat or curved surfaces with the aid of an integral, disposable fixture. The high peel strength adhesive allows the patches to withstand supersonic flight, cleaning, de-icing, and paint stripping. Patches can be removed easily with heat application. The kit includes one CP125-000-005A1A1 aluminum repair patch (.005 thick and 1.25 inch diameter), one adhesive packet, surface preparation materials, and instructions.

P/N 04-06015

CB 200 ACRYLIC ADHESIVE



A high strength, two part adhesive. 3.5 gram package. One package is usually sufficient to do five of any Click Bond fasteners.

P/N 04-06040

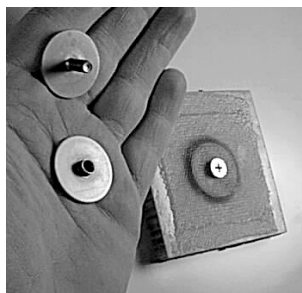
STUD KITS



Click Bond studs are available in several sizes. The Metal Small Base Stud Kit includes six CS62-1032-12AX-CR aluminum small base stainless studs, six stainless nylocks/washers (10-32), one adhesive packet, surface preparation materials, and instructions. The Metal Large Base Stud Kit includes four CS125-1420-16AX-CR aluminum large base stainless studs, four stainless nylock/washers (1/4-20), one adhesive packet, surface preparation materials, and instructions. The Fiberglass Base Stud Kit includes two CS125-1032-12G-CR fiberglass large base stainless studs, two stainless nylocks/washers (10-32), one adhesive packet, surface preparation materials, and instructions.

Metal Small Base Stud Kit..... P/N 04-06020.....
 Metal Large Base Stud Kit P/N 04-06025.....
 Fiberglass Base Stud Kit..... P/N 04-06030.....

EZ-POINT NUTS & STUDS FOR COMPOSITES



Creating a hard point in a composite laminated structure has never been easier. Simply drill a hole, prep the area, apply structural adhesive to the alodined, cleaned surface of the EZ-Point and snap into place. Simple and clean. For secondary structural applications, apply three plies of bid cloth to the area. Un-glassed samples were tested to failure in excess of 200 lbs. in shear. Glassed samples exceeded testing ability at over 500 lbs. Perfect for Adel clamps, trim and auto pilot servos, hydraulics, anything but primary structure. Available in 8-32, 10-32, 1/4 - 20, 1/4 - 28, your choice of locking, blind and studs. Used extensively in the installation of the Flesher 360 interior for the Lancair.

.....

| STUDS | | | BLIND NUTS | | | LOCKING NUTS | | |
|----------|----------|-------|------------|----------|-------|--------------|----------|-------|
| THREAD | P/N | \$ EA | THREAD | P/N | \$ EA | THREAD | P/N | \$ EA |
| 8-32 | 04-06330 | . | 8-32 | 04-06350 | . | 8-32 | 04-06370 | . |
| 10-32 | 04-06335 | . | 10-32 | 04-06355 | . | 10-32 | 04-06375 | . |
| 1/4 - 20 | 04-06340 | . | 1/4 - 20 | 04-06360 | . | 1/4 - 28 | 04-06380 | . |
| | | | | | | 1/4 - 28 | 04-06385 | . |

EZ-POINT STRIPS FOR COMPOSITES



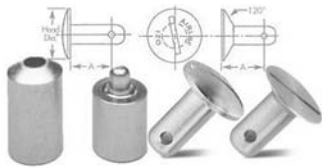
Take the guesswork out of nut plate spacing with EZ-Point Strips. They maintain consistent spacing while remaining flexible enough to conform to curvature. Perfect for cowling attachments, Access doors, removable wingtips, anywhere you would use a standard 10/32 or 8/32 nut plate. Locking threads, available in one, two and three inch centers. Sold in one-foot sections.

8-32 thread, 1" centers P/N 04-06450 ea.
 8-32 thread, 2" centers P/N 04-06455 ea.
 8-32 thread, 3" centers P/N 04-06460 ea.
 10-32 thread, 1" centers P/N 04-06465 ea.
 10-32 thread, 3" centers P/N 04-06475 ea.

HA

AIRLOC FASTENERS

A-LOCK (AIRLOC) FASTENERS



A-LOCK fasteners are common to Beechcraft airplanes and latches on many cowlings. The design consists of a simple stud, with a pin pressed into the shank. The pin is installed after inserting the stud through the panel hole and removed

prior to removing the stud. Some installations use a grommet in the fastener hole. Unlike other fasteners, the grommet does not usually require replacement when installing new studs. Base part numbers indicate stud diameter and head style. A-LOCK studs are made in several blank lengths indicated by the first dash number in the charts. Each blank length can have up to 10 second dash numbers or grip sizes. The second dash number indicates the maximum grip range in .010" increments. MilSpec primarily stocks sizes common to Beech aircraft in stainless steel for replacement purposes. To remove an A-LOCK stud, simply clip or remove the pin enough to back the stud out of the hole. New pins are pressed in using special pliers, or by modifying standard vice grip pliers. Drill or cut one jaw of the vice grip to allow proper relief for the pin. If new grommets are required, a flaring tool is necessary (see below). For new installations, cross pins are required.

| MS P/N | Our P/N | Size/Head Style | Grip | "A" | Total Length | Price |
|--------------|----------|-----------------|-----------|------|--------------|-------|
| 112060-1-060 | 04-00931 | #2 Flush | .051-.060 | .200 | .359 | . |
| 112060-1-080 | 04-00933 | #2 Flush | .071-.080 | .220 | .359 | . |
| 112060-1-090 | 04-00934 | #2 Flush | .081-.090 | .230 | .359 | . |
| 294186-1-080 | 04-00936 | #5 Flush | .071-.080 | .267 | .500 | . |
| 294186-1-100 | 04-00937 | #5 Flush | .091-.100 | .287 | .500 | . |
| 294186-2-180 | 04-00938 | #5 Flush | .171-.180 | .367 | .609 | . |
| 294186-2-190 | 04-00939 | #5 Flush | .181-.190 | .377 | .609 | . |
| 294186-2-200 | 04-00940 | #5 Flush | .191-.200 | .387 | .609 | . |
| 294186-2-210 | 04-00941 | #5 Flush | .201-.210 | .397 | .609 | . |
| 294186-2-230 | 04-00942 | #5 Flush | .220-.230 | .417 | .609 | . |
| 294186-2-240 | 04-00943 | #5 Flush | .231-.240 | .427 | .609 | . |
| 294186-2-250 | 04-00944 | #5 Flush | .241-.250 | .437 | .609 | . |
| 294290-1-080 | 04-00945 | #5 Round | .071-.080 | .267 | .500 | . |
| 294290-1-090 | 04-00946 | #5 Round | .081-.090 | .277 | .500 | . |
| 294290-2-170 | 04-00947 | #5 Round | .161-.170 | .357 | .609 | . |



AIRLOC CROSS PINS

| Series | Description | Part No. | Price |
|--------|------------------|----------|-------|
| #2 | 99785-2 Steel | 04-01071 | . |
| #2 | 293274 Stainless | 04-01072 | . |
| #5 | 294185 Stainless | 04-01074 | . |



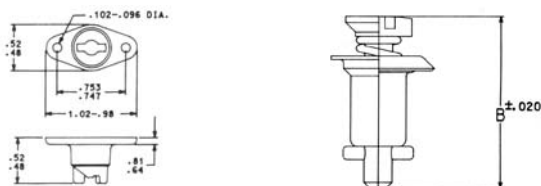
A-LOCK RECEPTACLES (SOLID RECEPTACLE)

| Series | Rivet Spacing | Solid Rec. Plain | Price ea. | Solid Rec. Countersink | Our Part No. | Price ea. |
|--------|---------------|------------------|-----------|------------------------|--------------|-----------|
| #2 | 3/4" | 99871-P098 | Call | 99871-C098 | 04-00951 | . |
| #5 | 1" | 99833-P098 | Call | 99833-C098 | --- | Call |
| | | 99833-P130 | Call | 99833-C130 | --- | Call |

A-LOCK RECEPTACLES (FLOATING RECEPTACLE)

| Series | Rivet Spacing | Float. Rec. Plain | Our Part No. | Price ea. | Float. Rec. Countersink | Our Part No. | Price ea. |
|--------|---------------|-------------------|--------------|-----------|-------------------------|--------------|-----------|
| #2 | 3/4" | -- | -- | Call | 99967-C098 | -- | Call |
| #5 | 1" | 99947-P098 | 04-00954 | . | 99947-C098 | 04-00956 | . |
| | | 99947-P130 | 04-00955 | . | 99947-C130 | -- | Call |

#2 RECEPTACLE



BEECH BONANZA COWLING FASTENER CONVERSION KITS

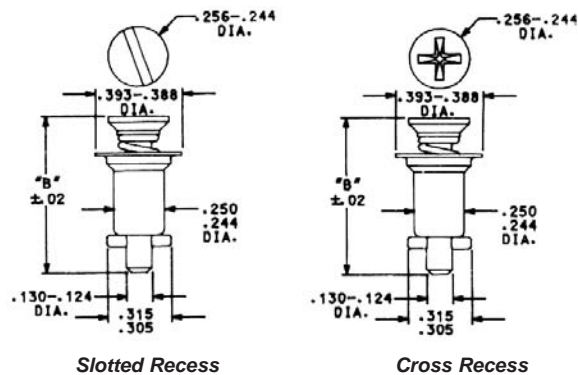


Great looking kits for converting Bonanza cowlings to the eSuperior MilSpec C-LOCK fasteners. Convert any Bonanza main engine cowling from the original Dzus fasteners to the heavy duty MilSpec 4000 series C-Locks. Convert early Bonanza gill (cheek) panels from Airloc to the MilSpec 2700 series fasteners. Convert later Bonanza gill (cheek) panels to the heavy duty MilSpec 4000 series C-Locks.

All kits are in stainless steel. Slotted or Phillips head options available please specify when ordering. Simple installation. Instructions and tips included with each kit. Main and cheek can be done in less than 5 hours.

| Beech Kit No. | Model | Serial No. | Description | Price |
|---------------|-------|------------|-------------------------------|-------|
| B35-2700 | 33 | CD1-350 | Gill conversion 2700 series | . |
| | 35 | D1-6567 | Slotted head (looks original) | . |
| B35-2700P | 33 | CD1-350 | Gill conversion 27S3 series | . |
| | 35 | D1-6567 | Phillips head | . |
| B35-4000S | 33 | All | Main Cowling Conversion | . |
| | 35 | D1-9068 | 4002 Series Slotted head | . |
| B35-4000P | 33 | All | Main Cowling Conversion | . |
| | 35 | D1-9068 | 40S5 Series Phillips head | . |
| B35-4000GP | 33 | CD351-on | Gill Conversion | . |
| | 35 | D6562-on | 4002 Series | . |
| | 36 | E1 -on | Phillips head | . |

#2 STUD ASSEMBLY - FLUSH



A-LOCK GROMMETS

May not require replacement when installing new studs.

| Series | Panel Thick. | Flush Head | Part No. | Price |
|--------|--------------|------------|----------|-------|
| #2 | up to .040 | 295846-1 | 04-00962 | . |
| | .041-.080 | 295846-2 | 04-00963 | . |
| #5 | .041-.121 | 295250-2 | 04-00964 | . |
| | .122-.201 | 295250-5 | 04-00965 | . |

FLARING TOOLS FOR A-LOCK GROMMETS

These tools are required for replacing any A-LOCK grommet.

| MS P/N | Our P/N | Type | Price |
|---------------|----------|----------|-------|
| MS29693/29695 | 04-00959 | #2 Flush | . |
| MS9529/29667 | 04-00960 | #5 Flush | . |
| MS9529/29770 | 04-00961 | #5 Round | . |

HA

AN FITTINGS

The aircraft fittings shown on the following pages conform to current AN and MS specifications. We stock aluminum, brass and/or steel fittings. Fittings not regularly stocked can be special ordered. Order by Part Number. Example: AN840-8D.

HA



AN804
**TEE,
FLARED TUBE WITH
BULKHEAD ON RUN**

| Size No. | Tube | | Thread Size | Price Each | |
|----------|-------|-------|-------------|------------|-------|
| | Steel | Alum. | | Steel | Alum. |
| 2 | 2D | 1/8 | 5/16-24 | . . . | . . . |
| 3 | 3D | 3/16 | 3/8-24 | . . . | . . . |
| 4 | 4D | 1/4 | 7/16-20 | . . . | . . . |
| 5 | 5D | 5/16 | 1/2-20 | . . . | . . . |
| 6 | 6D | 3/8 | 9/16-18 | . . . | . . . |
| 8 | 8D | 1/2 | 3/4-16 | . . . | . . . |
| 10 | 10D | 5/8 | 7/8-14 | . . . | . . . |
| 12 | 12D | 3/4 | 1-1/16-12 | . . . | . . . |



AN815
**UNION,
FLARED TUBE**

| Size No. | Tube | | Thread Size | Price Each | |
|----------|-------|-------|-------------|------------|-------|
| | Steel | Alum. | | Steel | Alum. |
| 2 | 2D | 1/8 | 5/16-24 | . . . | . . . |
| 3 | 3D | 3/16 | 3/8-24 | . . . | . . . |
| 4 | 4D | 1/4 | 7/16-20 | . . . | . . . |
| 5 | 5D | 5/16 | 1/2-20 | . . . | . . . |
| 6 | 6D | 3/8 | 9/16-18 | . . . | . . . |
| 8 | 8D | 1/2 | 3/4-16 | . . . | . . . |
| 10 | 10D | 5/8 | 7/8-14 | . . . | . . . |
| 12 | 12D | 3/4 | 1-1/16-12 | . . . | . . . |



AN818
**NUT,
COUPLING**

| Size No. | Tube | | Thread Size | Price Each | |
|----------|-------|-------|-------------|------------|-------|
| | Steel | Alum. | | Steel | Alum. |
| 2 | 2D | 1/8 | 5/16-24 | . . . | . . . |
| 3 | 3D | 3/16 | 3/8-24 | . . . | . . . |
| 4 | 4D | 1/4 | 7/16-20 | . . . | . . . |
| 5 | 5D | 5/16 | 1/2-20 | . . . | . . . |
| 6 | 6D | 3/8 | 9/16-18 | . . . | . . . |
| 8 | 8D | 1/2 | 3/4-16 | . . . | . . . |
| 10 | 10D | 5/8 | 7/8-14 | . . . | . . . |
| 12 | 12D | 3/4 | 1-1/16-12 | . . . | . . . |



AN816
**NIPPLE,
FLARED TUBE AND
PIPE THREAD**

| Size No. | Tube | | Pipe Size | Price Each | |
|----------|-------|-------|-----------|------------|-------|
| | Steel | Alum. | | Steel | Alum. |
| 2 | 2D | 1/8 | 1/8 | . . . | . . . |
| 3 | 3D | 3/16 | 1/8 | . . . | . . . |
| 4 | 4D | 1/4 | 1/8 | . . . | . . . |
| 4-4 | 4-4D | 1/4 | 1/4 | . . . | . . . |
| 5 | 5D | 5/16 | 1/8 | . . . | . . . |
| 6 | 6D | 3/8 | 1/4 | . . . | . . . |
| 6-2 | 6-2D | 3/8 | 1/8 | . . . | . . . |
| 6-6 | 6-6D | 3/8 | 3/8 | . . . | . . . |
| 7 | 7D | 1/2 | 1/4 | . . . | . . . |
| 8 | 8D | 1/2 | 3/8 | . . . | . . . |
| 10 | 10D | 5/8 | 1/2 | . . . | . . . |
| 12 | 12D | 3/4 | 3/4 | . . . | . . . |



**AN819
(MS20819)**
**SLEEVE,
COUPLING**

| Size No. | Tube | | Price Each | |
|----------|-------|-------|------------|-------|
| | Steel | Alum. | Steel | Alum. |
| 2 | 2D | 1/8 | . . . | . . . |
| 3 | 3D | 3/16 | . . . | . . . |
| 4 | 4D | 1/4 | . . . | . . . |
| 5 | 5D | 5/16 | . . . | . . . |
| 6 | 6D | 3/8 | . . . | . . . |
| 8 | 8D | 1/2 | . . . | . . . |
| 10 | 10D | 5/8 | . . . | . . . |
| 12 | 12D | 3/4 | . . . | . . . |



AN807
**ADAPTER
HOSE TO UNIVERSAL**

| Size No. | Hose | | Thread Size | Price Each | |
|----------|-------|-------|-------------|------------|-------|
| | Brass | Alum. | | Brass | Alum. |
| 4 | 4D | 1/4 | 7/16-20 | . . . | . . . |
| 6 | 6D | 3/8 | 9/16-18 | . . . | . . . |
| 8 | 8D | 1/2 | 3/4-16 | . . . | . . . |



AN814
**PLUG AND BLEEDER,
SCREW THREAD**

| Size No. | Tube | | Thread Size | Price Each | |
|----------|-------|-------|-------------|------------|-------|
| | Steel | Alum. | | Steel | Alum. |
| 2 | 2D | 1/8 | 5/16-24 | . . . | . . . |
| 3 | 3D | 3/16 | 3/8-24 | . . . | . . . |
| 4 | 4D | 1/4 | 7/16-20 | . . . | . . . |
| 5 | 5D | 5/16 | 1/2-20 | . . . | . . . |
| 6 | 6D | 3/8 | 9/16-18 | . . . | . . . |
| 8 | 8D | 1/2 | 3/4-16 | . . . | . . . |
| 10 | 10D | 5/8 | 7/8-14 | . . . | . . . |
| 12 | 12D | 3/4 | 1-1/16-12 | . . . | . . . |



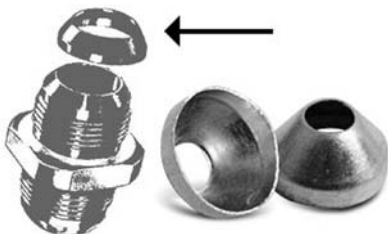
AN821
**ELBOW,
FLARED TUBE, 90°**

| Size No. | Tube | | Thread Size | Price Each | |
|----------|-------|-------|-------------|------------|-------|
| | Steel | Alum. | | Steel | Alum. |
| 2 | 2D | 1/8 | 5/16-24 | . . . | . . . |
| 3 | 3D | 3/16 | 3/8-24 | . . . | . . . |
| 4 | 4D | 1/4 | 7/16-20 | . . . | . . . |
| 5 | 5D | 5/16 | 1/2-20 | . . . | . . . |
| 6 | 6D | 3/8 | 9/16-18 | . . . | . . . |
| 8 | 8D | 1/2 | 3/4-16 | . . . | . . . |
| 10 | 10D | 5/8 | 7/8-14 | . . . | . . . |
| 12 | 12D | 3/4 | 1-1/16-12 | . . . | . . . |



AN806
**FLARED
TUBE PLUG**

| Size No. | Tube | | Thread Size | Price Each | |
|----------|-------|-------|-------------|------------|-------|
| | Steel | Alum. | | Steel | Alum. |
| 2 | 2D | 1/8 | 5/16-24 | . . . | . . . |
| 3 | 3D | 3/16 | 3/8-24 | . . . | . . . |
| 4 | 4D | 1/4 | 7/16-20 | . . . | . . . |
| 5 | 5D | 5/16 | 1/2-20 | . . . | . . . |
| 6 | 6D | 3/8 | 9/16-18 | . . . | . . . |
| 8 | 8D | 1/2 | 3/4-16 | . . . | . . . |



DEL 37° FITTING SEALS

DEL fitting seals are designed to eliminate leakage due to scratches on the sealing surface, improper torquing, or poor finishes on tube ends, in high or low pressure applications. For use with AN, MS, and JIC 37° flared fittings, DEL fitting seals also reduce tube flare cracking by reducing torque needed, eliminating nose damage to the fitting, and allow reuse of hardware. Approved by FAA, NASA, SAE, Air Force, Army, Navy, and major aerospace contractors.

| Part Number | Tube Size OD | Fitting Dash Size | Price Each |
|-------------|--------------|-------------------|------------|
| 04-05002 | 1/8 | 2 | . . . |
| 04-05003 | 3/16 | 3 | . . . |
| 04-05004 | 1/4 | 4 | . . . |
| 04-05006 | 3/8 | 6 | . . . |
| 04-05008 | 1/2 | 8 | . . . |
| 04-05010 | 5/8 | 10 | . . . |
| 04-05012 | 3/4 | 12 | . . . |
| 04-05016 | 1 | 16 | . . . |

AN FITTINGS

HA



AN822
(MS20822)

ELBOW, FLARED TUBE AND PIPE THREAD, 90°

| Size No. | Tube | | Pipe Size | Price Each | |
|----------|-------|-------|-----------|------------|-------|
| | Steel | Alum. | | Steel | Alum. |
| 2 | 2D | 1/8 | 1/8 | . | . |
| 3 | 3D | 3/16 | 1/8 | . | . |
| 4 | 4D | 1/4 | 1/8 | . | . |
| 4-4 | 4-4D | 1/4 | 1/4 | . | . |
| 5 | 5D | 5/16 | 1/8 | . | . |
| 6 | 6D | 3/8 | 1/4 | . | . |
| 6-2 | 6-2D | 3/8 | 1/8 | . | . |
| 6-6 | 6-6D | 3/8 | 3/8 | . | . |
| 8 | 8D | 1/2 | 3/8 | . | . |
| 10 | 10D | 5/8 | 1/2 | . | . |
| 12 | 12D | 3/4 | 3/4 | . | . |



AN825
(MS20825)

TEE, FLARED TUBE WITH PIPE THREAD ON SIDE

| Size No. | Tube | | Pipe Thread | Price Each | |
|----------|-------|-------|-------------|------------|-------|
| | Steel | Alum. | | Steel | Alum. |
| 2 | 2D | 1/8 | 1/8 | --- | . |
| 3 | 3D | 3/16 | 1/8 | . | . |
| 4 | 4D | 1/4 | 1/8 | . | . |
| 5 | 5D | 5/16 | 1/8 | . | . |
| 6 | 6D | 3/8 | 1/4 | . | . |
| 8 | 8D | 1/2 | 3/8 | --- | . |
| 10 | 10D | 5/8 | 1/2 | --- | . |
| 12 | 12D | 3/4 | 3/4 | --- | --- |



AN832

UNION, FLARED TUBE, BULKHEAD AND UNIVERSAL

| Size No. | Tube | | Thread Size | Price Each | |
|----------|-------|-------|-------------|------------|-------|
| | Steel | Alum. | | Steel | Alum. |
| 2 | 2D | 1/8 | 5/16-24 | . | . |
| 3 | 3D | 3/16 | 3/8-24 | . | . |
| 4 | 4D | 1/4 | 7/16-20 | . | . |
| 5 | 5D | 5/16 | 1/2-20 | . | . |
| 6 | 6D | 3/8 | 9/16-18 | . | . |
| 8 | 8D | 1/2 | 3/4-16 | . | . |
| 10 | 10D | 5/8 | 7/8-14 | . | . |
| 12 | 12D | 3/4 | 1-1/16-12 | . | . |



AN823
(MS20823)

ELBOW, FLARED TUBE AND PIPE THREAD, 45°

| Size No. | Tube | | Pipe Thread | Price Each | |
|----------|-------|-------|-------------|------------|-------|
| | Steel | Alum. | | Steel | Alum. |
| 2 | 2D | 1/8 | 1/8 | . | . |
| 3 | 3D | 3/16 | 1/8 | . | . |
| 4 | 4D | 1/4 | 1/8 | . | . |
| 5 | 5D | 5/16 | 1/8 | . | . |
| 6 | 6D | 3/8 | 1/4 | . | . |
| 8 | 8D | 1/2 | 3/8 | . | . |
| 10 | 10D | 5/8 | 1/2 | --- | . |
| 12 | 12D | 3/4 | 3/4 | . | . |



AN826
(MS20826)

TEE TUBE WITH PIPE THREAD ON RUN

| Size No. | Tube | | Pipe Thread | Price Each | |
|----------|-------|-------|-------------|------------|-------|
| | Steel | Alum. | | Steel | Alum. |
| 2 | 2D | 1/8 | 1/8 | . | . |
| 3 | 3D | 3/16 | 1/8 | . | . |
| 4 | 4D | 1/4 | 1/8 | . | . |
| 5 | 5D | 5/16 | 1/8 | . | . |
| 6 | 6D | 3/8 | 1/4 | . | . |
| 8 | 8D | 1/2 | 3/8 | . | . |
| 10 | 10D | 5/8 | 1/2 | . | . |
| 12 | 12D | 3/4 | 3/4 | --- | . |



AN833

ELBOW, FLARED TUBE BULKHEAD AND UNIVERSAL, 90°

| Size No. | Tube | | Thread Size | Price Each | |
|----------|-------|-------|-------------|------------|-------|
| | Steel | Alum. | | Steel | Alum. |
| 2 | 2D | 1/8 | 5/16-24 | . | . |
| 3 | 3D | 3/16 | 3/8-24 | . | . |
| 4 | 4D | 1/4 | 7/16-20 | . | . |
| 5 | 5D | 5/16 | 1/2-20 | . | . |
| 6 | 6D | 3/8 | 9/16-18 | . | . |
| 8 | 8D | 1/2 | 3/4-16 | . | . |
| 10 | 10D | 5/8 | 7/8-14 | --- | . |
| 12 | 12D | 3/4 | 1-1/16-12 | --- | . |



AN824

TEE, FLARED TUBE

| Size No. | Tube | | Thread Size | Price Each | |
|----------|-------|-------|-------------|------------|-------|
| | Steel | Alum. | | Steel | Alum. |
| 2 | 2D | 1/8 | 5/16-24 | . | . |
| 3 | 3D | 3/16 | 3/8-24 | . | . |
| 4 | 4D | 1/4 | 7/16-20 | . | . |
| 5 | 5D | 5/16 | 1/2-20 | . | . |
| 6 | 6D | 3/8 | 9/16-18 | . | . |
| 8 | 8D | 1/2 | 3/4-16 | . | . |
| 10 | 10D | 5/8 | 7/8-14 | . | . |
| 12 | 12D | 3/4 | 1-1/16-12 | --- | . |



AN827

CROSS, FLARED TUBE

| Size No. | Tube | | Thread Size | Price Each | |
|----------|-------|-------|-------------|------------|-------|
| | Steel | Alum. | | Steel | Alum. |
| 2 | 2D | 1/8 | 5/16-24 | --- | --- |
| 3 | 3D | 3/16 | 3/8-24 | --- | . |
| 4 | 4D | 1/4 | 7/16-20 | . | . |
| 5 | 5D | 5/16 | 1/2-20 | --- | . |
| 6 | 6D | 3/8 | 9/16-18 | --- | . |
| 8 | 8D | 1/2 | 3/4-16 | --- | . |
| 10 | 10D | 5/8 | 7/8-14 | --- | --- |
| 12 | 12D | 3/4 | 1-1/16-12 | --- | . |



AN834

TEE, FLARED TUBE, BULKHEAD AND UNIVERSAL

| Size No. | Tube | | Thread Size | Price Each | |
|----------|-------|-------|-------------|------------|-------|
| | Steel | Alum. | | Steel | Alum. |
| 2 | 2D | 1/8 | 5/16-24 | --- | . |
| 3 | 3D | 3/16 | 3/8-24 | --- | . |
| 4 | 4D | 1/4 | 7/16-20 | . | . |
| 5 | 5D | 5/16 | 1/2-20 | . | . |
| 6 | 6D | 3/8 | 9/16-18 | . | . |
| 8 | 8D | 1/2 | 3/4-16 | . | . |
| 10 | 10D | 5/8 | 7/8-14 | --- | . |
| 12 | 12D | 3/4 | 1-1/16-12 | --- | --- |

AN FITTINGS

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**AN837
ELBOW,
FLARED TUBE,
BULKHEAD AND
UNIVERSAL 45°**

| Size No. | Tube Steel/Alum. | Tube O.D. | Thread Size | Price Each | |
|----------|---------------------|--------------|----------------|------------|-------|
| | | | | Steel | Alum. |
| 2 | 2D | 1/8 | 5/16-24 | --- | . |
| 3 | 3D | 3/16 | 3/8-24 | . | . |
| 4 | 4D | 1/4 | 7/16-20 | . | . |
| 5 | 5D | 5/16 | 1/2-20 | . | . |
| 6 | 6D | 3/8 | 9/16-18 | . | . |
| 8 | 8D | 1/2 | 3/4-16 | . | . |
| 10 | 10D | 5/8 | 7/8-14 | . | . |
| 12 | 12D | 3/4 | 1-1/16-12 | --- | --- |



**AN844
HOSE ELBOW,
PIPE THREAD, 45°**

| Size No. | Hose Brass/Alum. | Hose I.D. | Pipe Thread | Price Each | |
|----------|---------------------|--------------|----------------|------------|-------|
| | | | | Brass | Alum. |
| 4 | 4D | 1/4 | 1/8 | . | . |
| 6 | 6D | 3/8 | 1/4 | --- | . |
| 8 | 8D | 1/2 | 3/8 | . | . |
| 10 | 10D | 5/8 | 1/2 | . | . |



**AN910 COUPLING
PIPE THREAD**

| Size No. | Thread Brass/Alum. | Thread Size | Price Each | |
|----------|-----------------------|----------------|------------|-------|
| | | | Brass | Alum. |
| 1 | 1D | 1/8 | . | . |
| 2 | 2D | 1/4 | . | . |
| 3 | 3D | 3/8 | . | . |
| 4 | 4D | 1/2 | . | . |
| 6 | 6D | 3/4 | . | . |



**AN911 NIPPLE
PIPE THREAD**

| Size No. | Pipe Thread Brass/Alum. | Pipe Thread Size | Price Each | |
|----------|-------------------------------|------------------------|------------|-------|
| | | | Brass | Alum. |
| 1 | 1D | 1/8 | . | . |
| 2 | 2D | 1/4 | . | . |
| 3 | 3D | 3/8 | . | . |
| 4 | 4D | 1/2 | . | . |
| 6 | 6D | 3/4 | . | . |



**AN838
ELBOW,
BULKHEAD
& HOSE TO
UNIVERSAL, 90°**

| Size No. | Hose Brass/Alum. | Hose O.D. | Thread Size | Price Each | |
|----------|---------------------|--------------|----------------|------------|-------|
| | | | | Brass | Alum. |
| 4 | 4D | 1/4 | 7/16-20 | --- | . |
| 6 | 6D | 3/8 | 9/16-18 | --- | . |



**AN848
ELBOW,
HOSE BULKHEAD, 90°**

| Size No. | Hose Brass/Alum. | Hose I.D. | Thread Size | Price Each | |
|----------|---------------------|--------------|----------------|------------|-------|
| | | | | Brass | Alum. |
| --- | 4D | 1/4 | 7/16-20 | --- | . |
| --- | 6D | 3/8 | 9/16-18 | --- | . |
| --- | 8D | 1/2 | 3/4-16 | --- | . |



**AN912 BUSHING
PIPE THREAD REDUCER**

| Size No. | Pipe Size Alum. | Price Ea. | Size No Alum. | Pipe Size | Price Ea. |
|----------|-----------------------|--------------|---------------------|--------------|--------------|
| 1D | 1/4-1/8 | . | 8D | 3/4-3/8 | . |
| 2D | 3/8-1/4 | . | 9D | 3/4-1/4 | . |
| 3D | 3/8-1/8 | . | 10D | 1-3/4 | . |
| 4D | 1/2-3/8 | . | 11D | 1-1/2 | . |
| 5D | 1/2-1/4 | . | 12D | 1-3/8 | . |
| 6D | 1/2-1/8 | . | 13D | 11/4-3/4 | . |
| 7D | 3/4-1/2 | . | | | |



**AN840
HOSE NIPPLE,
PIPE THREAD**

| Size No. | Hose Brass/Alum. | Hose I.D. | Pipe Size | Price Each | |
|----------|---------------------|--------------|--------------|------------|-------|
| | | | | Brass | Alum. |
| 4 | 4D | 1/4 | 1/8 | . | . |
| 6 | 6D | 3/8 | 1/4 | . | . |
| 8 | 8D | 1/2 | 3/8 | . | . |
| --- | 10D | 5/8 | 1/2 | --- | . |
| 12 | 12D | 3/4 | 3/4 | . | . |



**AN842
HOSE ELBOW,
PIPE THREAD, 90°**

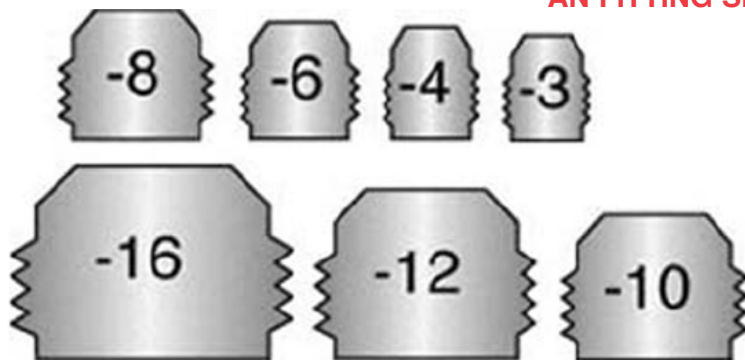
| Size No. | Hose Brass/Alum. | Hose I.D. | Pipe Thread | Price Each | |
|----------|---------------------|--------------|----------------|------------|-------|
| | | | | Brass | Alum. |
| 4 | 4D | 1/4 | 1/8 | . | . |
| 6 | 6D | 3/8 | 1/4 | . | . |
| 8 | 8D | 1/2 | 3/8 | --- | . |
| 10 | 10D | 5/8 | 1/2 | . | . |
| 12 | 12D | 3/4 | 3/4 | . | . |



**AN913 (MS20913) PLUG
SQUARE HEAD, PIPE THREAD**

| Size No. | Pipe Thread Brass/Alum. | Pipe Thread Size | Price Each | | |
|----------|-------------------------------|------------------------|------------|-------|-------|
| | | | Brass | Steel | Alum. |
| 1 | 1S | 1D 1/8 | . | . | . |
| 2 | 2S | 2D 1/4 | . | . | . |
| 3 | 3S | 3D 3/8 | . | --- | . |
| 4 | 4S | 4D 1/2 | . | --- | . |
| 6 | 6S | 6D 3/4 | . | --- | . |

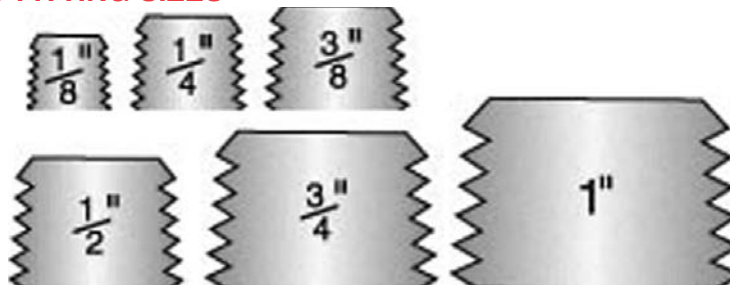
AN FITTING SIZES



| AN Size | Metal Tube O.D. | Thread Size |
|---------|-----------------|---------------|
| 2 | 1/8 | 5/16-24 SAE |
| 3 | 3/16 | 3/8-24 SAE |
| 4 | 1/4 | 7/16-20 SAE |
| 5 | 5/16 | 1/2-20 SAE |
| 6 | 3/8 | 9/16-18 SAE |
| 8 | 1/2 | 3/4-16 SAE |
| 10 | 5/8 | 7/8-14 SAE |
| 12 | 3/4 | 1-1/16-12 SAE |
| 16 | 1" | 1-5/16-12 SAE |

NPT FITTING SIZES

| Pipe Thread Size | Threads per inch | Theoretical I.D. of Fitting | Closest AN Fitting Size |
|---------------------|---------------------|--------------------------------|----------------------------|
| 1/16" | 27 | 1/16" | |
| 1/8" | 27 | 1/8" | 4 |
| 1/4" | 18 | 1/4" | 6 |
| 3/8" | 18 | 3/8" | 8 |
| 1/2" | 14 | 1/2" | 10 |
| 3/4" | 14 | 3/4" | 12 |
| 1" | 11.5 | 1" | 16 |
| 1-1/4" | 11.5 | 1-1/4" | 20 |
| 1-1/2" | 11.5 | 1-1/2" | 24 |
| 2" | 11.5 | 2" | |



DIAGRAMS MAY NOT BE ACCURATE AND SHOULD NOT BE USED FOR EXACT SIZING. FOR REFERENCE ONLY

AN FITTINGS



**AN914
ELBOW,**

**INTERNAL
AND EXTERNAL
PIPE THREAD, 90°**

| Size No. | | Pipe Thread | Price Each | |
|----------|-------|-------------|------------|-------|
| Brass | Alum. | | Brass | Alum. |
| 1 | 1D | 1/8 | . | . |
| 2 | 2D | 1/4 | . | . |
| 3 | 3D | 3/8 | . | . |
| 4 | 4D | 1/2 | . | . |
| 6 | 6D | 3/4 | --- | . |



**AN917
TEE,**

**INTERNAL,
PIPE THREAD**

| Size No. | | Pipe Thread | Price | |
|----------|-------|-------------|-------|-------|
| Brass | Alum. | | Brass | Alum. |
| 1 | 1D | 1/8 | . | . |
| 2 | 2D | 1/4 | . | . |
| 3 | 3D | 3/8 | . | . |
| 4 | 4D | 1/2 | . | . |
| 6 | 6D | 3/4 | --- | . |



**AN924
NUT,
FLARED TUBE, BULKHEAD
AND UNIVERSAL FITTING**

| Size No. | Tube | | Thread Size | Price | |
|----------|-------|-------|-------------|-------|-------|
| | Steel | Alum. | | Steel | Alum. |
| 2 | 2D | 1/8 | 5/16-24 | . | . |
| 3 | 3D | 3/16 | 3/8-24 | . | . |
| 4 | 4D | 1/4 | 7/16-20 | . | . |
| 5 | 5D | 5/16 | 1/2-20 | . | . |
| 6 | 6D | 3/8 | 9/16-18 | . | . |
| 8 | 8D | 1/2 | 3/4-16 | . | . |
| 10 | 10D | 5/8 | 7/8-14 | . | . |
| 12 | 12D | 3/4 | 1-1/16-12 | . | . |



**AN915
ELBOW,**

**INTERNAL
AND EXTERNAL
PIPE THREAD, 45°**

| Size No. | | Pipe Thread | Price | |
|----------|-------|-------------|-------|-------|
| Brass | Alum. | | Brass | Alum. |
| 1 | 1D | 1/8 | . | . |
| 2 | 2D | 1/4 | --- | . |
| 3 | 3D | 3/8 | . | . |
| 4 | 4D | 1/2 | . | . |
| 6 | 6D | 3/4 | --- | . |



AN918

**CROSS INTERNAL
PIPE THREAD**

| Size # | Pipe Alum. Thread | Price Ea Alum. |
|--------|-------------------|----------------|
| 1D | 1/8 | . |
| 2D | 1/4 | . |
| 3D | 3/8 | . |
| 4D | 1/2 | . |
| 6D | 3/4 | . |



**AN929
CAP,**

FLARED TUBE FITTING

| Size No. | Tube O.D. | Thread Size | Price Each |
|----------|-----------|-------------|------------|
| 2D | 1/8 | 5/16-24 | . |
| 3D | 3/16 | 3/8-24 | . |
| 4D | 1/4 | 7/16-20 | . |
| 5D | 5/16 | 1/2-20 | . |
| 6D | 3/8 | 9/16-18 | . |
| 8D | 1/2 | 3/4-16 | . |
| 10D | 5/8 | 7/8-14 | . |
| 12D | 3/4 | 1-1/16-12 | . |

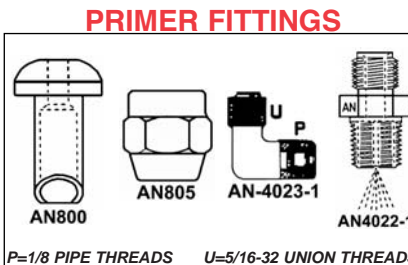
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**AN916
ELBOW,**

**INTERNAL
PIPE THREAD, 90°**

| Size No. | | Pipe Thread | Price | |
|----------|-------|-------------|-------|-------|
| Brass | Alum. | | Brass | Alum. |
| 1 | 1D | 1/8 | . | . |
| 2 | 2D | 1/4 | . | . |
| 3 | 3D | 3/8 | . | . |
| 4 | 4D | 1/2 | --- | . |
| 6 | 6D | 3/4 | --- | . |



PRIMER FITTINGS

| AN No. | Description | Thread | Price |
|----------|------------------|-------------|-------|
| AN780-2 | Union Nipple | 1/8x5/16-32 | . |
| AN800-2 | Union Cone | --- | . |
| AN805-2 | Union Nut | 5/16-32 | . |
| AN4022-1 | Discharge Nipple | 1/8x5/16-32 | . |
| AN4023-1 | Discharge Elbow | 1/8x5/16-32 | . |



**AN919
REDUCER,**

EXTERNAL THREAD

| Size No. | Tube | | Price | |
|----------|-------|----------|-------|-------|
| | Steel | Alum. | Steel | Alum. |
| 0 | 0D | 3/16-1/8 | . | . |
| 1 | 1D | 1/4-1/8 | . | . |
| 2 | 2D | 1/4-3/16 | . | . |
| 3 | 3D | 5/16-1/4 | . | . |
| 4 | 4D | 3/8-1/8 | . | . |
| 5 | 5D | 3/8-3/16 | --- | . |
| 6 | 6D | 3/8-1/4 | . | . |
| 7 | 7D | 3/8-5/16 | . | . |
| 8 | 8D | 1/2-1/8 | --- | . |
| 9 | 9D | 1/2-3/16 | --- | . |
| 10 | 10D | 1/2-1/4 | . | . |
| 11 | 11D | 1/2-5/16 | . | . |
| 12 | 12D | 1/2-3/8 | . | . |

ALUMINUM MANIFOLD FITTINGS

ORDERING INFORMATION

Basic part number on all fittings is 04-00XXX, complete the part number by filling in the last 3 digits after selecting the fitting you need according to the details below. Example: 04-00102.

First Code Number - Determines the style of the fitting.

- 1: One port in the end with two ports out, 90° cross drilled with one port per side. 3 ports total. Two Mounting Holes.
- 2: One port in the end with four ports out, 90° cross drilled with two ports per side. 5 ports total. Two Mounting Holes.
- 3: One port in the end with six ports out, 90° cross drilled with three ports per side. 7 ports total. Four Mounting Holes.
- 4: One port in the end with eight ports out, 90° cross drilled with four ports per side. 9 ports total. Four Mounting Holes.
- 5: One port in the end with four ports out, 90° drilling with four ports on one side only. 5 ports total. Two Mounting Holes.

Second Code Number - Determines the style of porting.

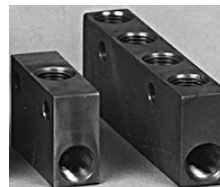
- 0: All the ports are the same.
- 1: Inlet port is one size larger than outlet ports.
- 2: Inlet port is two sizes larger than outlet ports.

Third Code Number - Determines the inlet port size.

- 2: 1/8-27 taper pipe thread (NPT)
- 4: 1/4-18 taper pipe thread (NPT)
- 6: 3/8-18 taper pipe thread (NPT)
- 8: 1/2-14 taper pipe thread (NPT)

In the example above - 04-00102, this would be a 1/8 NPT inlet with two outlets of the same size.

Ex.-04-00326, this would have a 3/8 NPT inlet w/six 1/8 NPT outlets.

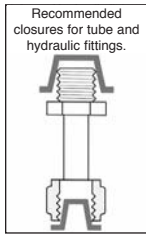
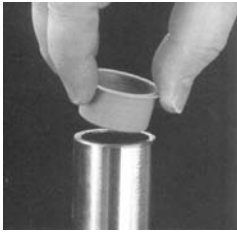


Our aluminum manifold fittings are a bolt-on design with taper pipe threads. These fittings are designed to provide a convenient means of plumbing multiple hoses from and/or to one source with the fitting being bolted to a supporting structure. This design will eliminate Adel clamps at the juncture of the hoses and eliminate additional tee type fittings when more than two hoses are to be connected to one source. Applications include brake reservoir lines, static system, suction systems, fuel systems, air line pigs, smoke systems, and more. Not for use on oxygen systems or pressures over 150 psi.

| Part No. | Price | Part No. | Price | Part No. | Price |
|----------|-------|----------|-------|----------|-------|
| 04-00102 | . | 04-00214 | . | 04-00328 | . |
| 04-00104 | . | 04-21600 | . | 04-00402 | . |
| 04-00106 | . | 04-21800 | . | 04-00404 | . |
| 04-00108 | . | 04-00226 | . | 04-00414 | . |
| 04-00114 | . | 04-00228 | . | 04-00416 | . |
| 04-00116 | . | 04-00302 | . | 04-00426 | . |
| 04-00118 | . | 04-00304 | . | 04-00428 | . |
| 04-00126 | . | 04-00306 | . | 04-00502 | . |
| 04-00128 | . | 04-00308 | . | 04-00504 | . |
| 04-00202 | . | 04-00314 | . | 04-00514 | . |
| 04-00204 | . | 04-00316 | . | 04-00516 | . |
| 04-00206 | . | 04-00318 | . | 04-00526 | . |
| 04-00208 | . | 04-00326 | . | 04-00528 | . |

CAPPLUGS

T SERIES CAPPLUGS (NON-THREADED)



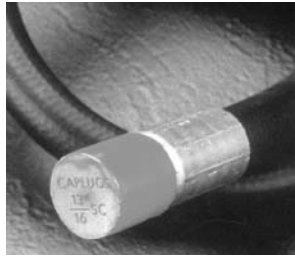
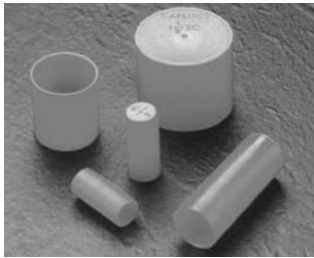
Tapered Capplugs can be used as either caps or plugs. Because they are tapered in design and made from highly pliable (or flexible) Polyethylene, they can be applied to fit snugly and are readily removable, whether used for capping or plugging. Especially recommended for use on MIL Std. and SAE-type tube and hydraulic fittings and for threaded external and internal NPT fittings.

| Part No. | Dash No. | Tubing O.D. | Thread | Caplugs As Plugs | Caplugs As Caps | Price Each |
|----------|----------|-------------|-----------|------------------|-----------------|------------|
| 04-00045 | -2 | 1/8 | 5/16-24 | 1 | 2 | . |
| 04-00046 | -3 | 3/16 | 3/8-24 | 2 | 3-X | . |
| 04-00047 | -4 | 1/4 | 7/16-20 | 3 | 4-X | . |
| 04-00048 | -5 | 5/16 | 1/2-20 | 4 | 5 | . |
| 04-00049 | -6 | 3/8 | 9/16-18 | 5 | 6-X | . |
| 04-00050 | -8 | 1/2 | 3/4-16 | 8 | 9-X | . |
| 04-00051 | -10 | 5/8 | 7/8-14 | 10 | 11-X | . |
| 04-00052 | -12 | 3/4 | 1 1/16-12 | 12-X | 13-X | . |
| 04-00053 | -16 | 1 | 1 5/16-12 | 14-X | 15-X | . |

Less 20% Discount on 50 Caplugs (Same P/N)

HA

SC SERIES CAPPLUGS (NON-THREADED)

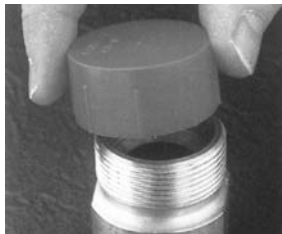


Series SC sleeve caps are designed to fit outside diameters of tubing sizes listed with a snug friction grip. Available in 57 different O.D.'s and lengths. Ideal for capping and protecting both threaded and non-threaded tubing or rod ends. They also make excellent masks, for painting, plating or grit-blasting operations.

| Part No. | Caplug No. | A | | B | | Price Ea. |
|----------|------------|-------------------------|---------------------|----------------------|------------------|-----------|
| | | To fit tube O.D. Inches | To fit tube O.D. mm | Inside Length Inches | Inside Length mm | |
| 04-00054 | SC-1/8 | 1/8 | 3.18 | .59 | 14.99 | . |
| 04-00055 | SC-3/16-5 | 3/16 | 4.76 | .35 | 8.89 | . |
| 04-00056 | SC-3/16-16 | 3/16 | 4.76 | 1.00 | 25.40 | . |
| 04-00057 | SC-1/4-4 | 1/4 | 6.35 | .22 | 5.59 | . |
| 04-00058 | SC-1/4-14 | 1/4 | 6.35 | .88 | 22.35 | . |
| 04-00059 | SC-5/16 | 5/16 | 7.94 | .88 | 22.35 | . |
| 04-00060 | SC-3/8 | 3/8 | 9.53 | .88 | 22.35 | . |
| 04-00061 | SC-7/16-14 | 7/16 | 11.11 | .88 | 22.35 | . |
| 04-00062 | SC-1/2-8 | 1/2 | 12.70 | .50 | 12.70 | . |
| 04-00063 | SC-1/2-14 | 1/2 | 12.70 | .88 | 22.35 | . |
| 04-00064 | SC-9/16-9 | 9/16 | 14.29 | .56 | 14.22 | . |
| 04-00065 | SC-9/16-14 | 9/16 | 14.29 | .88 | 22.35 | . |
| 04-00066 | SC-5/8 | 5/8 | 15.88 | .88 | 22.35 | . |
| 04-00067 | SC-3/4 | 3/4 | 19.05 | .88 | 22.35 | . |
| 04-00068 | SC-7/8 | 7/8 | 22.23 | .88 | 22.35 | . |
| 04-00069 | SC-1 | 1 | 25.40 | 1.00 | 25.40 | . |

Less 20% Discount on 50 Caplugs (Same P/N)

CD SERIES CAPPLUGS (THREADED)

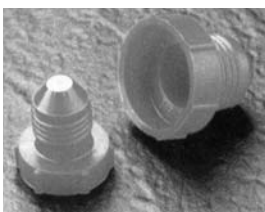


Knurled for ease of application, Series CD caps seal flared JIC fittings exceptionally well against dirt and moisture, as well as for masking during dipping, painting and plating.

| Part No. | Caplug No. | To Cap Normal Tubing Size Inches | To fit Thread | Dim A | | No. of Knurls | Price Each |
|----------|------------|----------------------------------|---------------|-------|-------|---------------|------------|
| | | | | In | mm | | |
| 04-00032 | CD-3 | 3/16 | 3/8-24 | .47 | 11.94 | 4 | . |
| 04-00033 | CD-4 | 1/4 | 7/16-20 | .47 | 11.94 | 4 | . |
| 04-00034 | CD-5 | 5/16 | 1/2-20 | .47 | 11.94 | 6 | . |
| 04-00035 | CD-6 | 3/8 | 9/16-18 | .53 | 13.46 | 6 | . |
| 04-00036 | CD-6A | 3/8 | 5/8-18 | .53 | 13.46 | 6 | . |
| 04-00037 | CD-8 | 1/2 | 3/4-16 | .57 | 14.48 | 6 | . |
| 04-00038 | CD-10 | 5/8 | 7/8-14 | .68 | 17.27 | 6 | . |
| 04-00039 | CD-11 | - | 1-14 | .78 | 19.81 | 8 | . |
| 04-00040 | CD-12 | 3/4 | 1 1/16-12 | .75 | 19.05 | 8 | . |

Less 20% Discount on 50 Caplugs (Same P/N)

PD SERIES CAPPLUGS (THREADED)



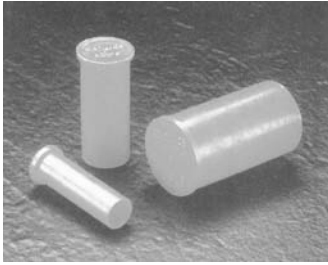
Series PD Plugs, designed for use on flared JIC fittings, are knurled for ease of application. They will seal low pressure requirements with light finger tightening. PD plugs can be used to seal 37° flare fittings without gaskets.

| Part No. | Caplug No. | To Plug Nominal Tubing Size | To fit Thread | Dimensions | | | | | | Price Each |
|----------|------------|-----------------------------|---------------|------------|-------|------|-------|-----|------|------------|
| | | | | B | | C | | D | | |
| | | | | in | mm | in | mm | in | mm | |
| 04-00023 | PD-30 | 3/16 | 3/8-24 | .46 | 11.68 | .50 | 12.70 | .18 | 4.57 | . |
| 04-00024 | PD-40 | 1/4 | 7/16-20 | .53 | 13.46 | .62 | 15.75 | .19 | 4.83 | . |
| 04-00025 | PD-50 | 5/16 | 1/2-20 | .53 | 13.46 | .68 | 17.27 | .25 | 6.35 | . |
| 04-00026 | PD-60 | 3/8 | 9/16-18 | .50 | 12.70 | .81 | 20.57 | .25 | 6.35 | . |
| 04-00027 | PD-65 | 3/8 | 5/8-18 | .59 | 14.99 | .81 | 20.57 | .25 | 6.35 | . |
| 04-00028 | PD-80 | 1/2 | 3/4-16 | .75 | 19.05 | .94 | 23.88 | .25 | 6.35 | . |
| 04-00029 | PD-100 | 5/8 | 7/8-14 | .87 | 22.10 | 1.06 | 26.93 | .25 | 6.35 | . |
| 04-00030 | PD-121 | 3/4 | 1-1/16-14 | 1.12 | 28.45 | 1.31 | 33.28 | .25 | 6.35 | . |
| 04-00031 | PD-160 | 1 | 1-5/16-12 | .93 | 23.62 | 1.50 | 38.10 | .25 | 6.35 | . |

Less 20% Discount on 50 Caplugs (Same P/N)

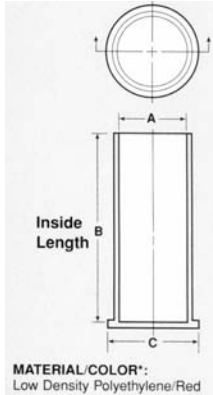
CAPPLUGS

RCL SERIES CAPPLUGS (UNTHREADED)



Series RCL caps are ideal for protecting threaded or smooth cylindrical surfaces. Originally designed for use on hydraulic double threaded bulkhead fittings, they are especially suitable where greater longitudinal protection is required.

Less 20% Discount on 50 Capplugs (Same P/N)



| Part No. | Caplug No. (formerly) (series B-203) | A To Cap Thread Size In. | B Inside Length | | C | | Price Each |
|----------|--------------------------------------|-----------------------------|--------------------|-------|------|-------|------------|
| | | | In | mm | in | mm | |
| 04-00079 | RCL-2 | 5/16 | 1.24 | 31.50 | .46 | 11.68 | . |
| 04-00080 | RCL-3 | 3/8 | 1.24 | 31.50 | .52 | 13.21 | . |
| 04-00009 | RCL-4 | 7/16 | 1.33 | 33.78 | .58 | 14.73 | . |
| 04-00011 | RCL-5 | 1/2 | 1.33 | 33.78 | .64 | 16.26 | . |
| 04-00012 | RCL-6 | 9/16 | 1.41 | 35.82 | .70 | 17.78 | . |
| 04-00013 | RCL-8 | 3/4 | 1.56 | 39.63 | .88 | 22.35 | . |
| 04-00014 | RCL-9 | M-20 (.787) | 1.56 | 39.63 | .91 | 23.11 | . |
| 04-00015 | RCL-10 | 7/8 | 1.70 | 43.18 | 1.01 | 25.66 | . |
| 04-00016 | RCL-12 | 1 1/16 | 1.89 | 48.01 | 1.19 | 30.23 | . |

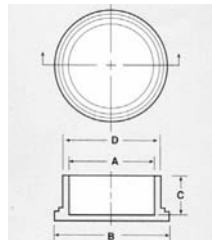
HA

EC SERIES CAPPLUGS (UNTHREADED)



Static dissipative EC Series Capplugs provide positive ESD and physical protection for all common sizes of threaded electrical and electronic connectors. Also suitable for protecting non-threaded bayonet-type connectors.

Less 20% Discount on 50 Capplugs (Same P/N)



| Part No. | Caplug No. | A-Caps Nominal Thread Size In. | Dimensions | | | | Price Each |
|----------|------------|--------------------------------|------------|-------|-----|-------|------------|
| | | | B | | C | | |
| | | | In | mm | in | mm | |
| 04-00070 | EC-4 | 1/4 | .48 | 12.19 | .50 | 12.70 | . |
| 04-00071 | EC-5 | 5/16 | .55 | 13.97 | .56 | 14.22 | . |
| 04-00072 | EC-6 | 3/8 | .62 | 15.75 | .50 | 12.70 | . |
| 04-00073 | EC-8 | 1/2 | .74 | 18.79 | .50 | 12.70 | . |
| 04-00074 | EC-9 | 9/16 | .78 | 19.81 | .44 | 11.18 | . |
| 04-00075 | EC-10 | 5/8 | .84 | 21.34 | .50 | 12.70 | . |
| 04-00076 | EC-12 | 3/4 | .97 | 24.63 | .50 | 12.70 | . |
| 04-00077 | EC-14 | 7/8 | 1.12 | 28.44 | .50 | 12.70 | . |
| 04-00078 | EC-16 | 1 | 1.22 | 30.98 | .50 | 12.70 | . |

P SERIES CAPPLUGS (THREADED)

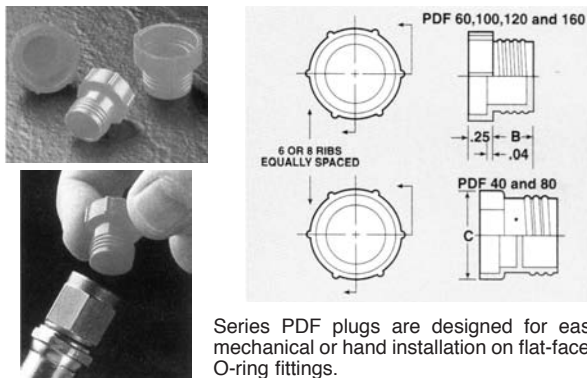


Series P pipe plug are available in two styles: square head, and round head. They are molded in high density polyethylene and are ideal for keeping moisture, dirt and other contaminants from NPT-threaded ports.

Less 20% Discount on 50 Capplugs (Same P/N)

| Part No. | Caplug No. | To Fit | Dimensions | | | | | | Price Each |
|----------|------------|----------|------------|-------|-----|-------|----|----|------------|
| | | | A | | B | | C | | |
| | | | in | mm | in | mm | in | mm | |
| 04-00041 | P-18 | 1/8" NPT | .44 | 11.18 | .28 | 7.11 | - | - | . |
| 04-00042 | P-28 | 1/4" NPT | .50 | 12.70 | .37 | 9.40 | - | - | . |
| 04-00043 | P-38 | 3/8" NPT | .56 | 14.22 | .44 | 11.18 | - | - | . |
| 04-00044 | P-48 | 1/2" NPT | .59 | 14.99 | .56 | 14.22 | - | - | . |

PDF SERIES CAPPLUGS (THREADED)



Series PDF plugs are designed for easy mechanical or hand installation on flat-faced O-ring fittings.

| Part No. | Caplug No. | To Plug Nominal Tubing Size | To Fit Thread Size | Dimensions | | | | Price Each |
|----------|------------|-----------------------------|--------------------|------------|-------|------|-------|------------|
| | | | | B | | C | | |
| | | | | in | mm | in | mm | |
| 04-00018 | PDF-60 | 3/8" | 11/16-16 | .44 | 11.18 | .87 | 22.10 | . |
| 04-00019 | PDF-80 | 1/2" | 13/16-16 | .50 | 12.70 | .94 | 23.88 | . |
| 04-00020 | PDF-100 | 5/8" | 1-14 | .59 | 14.99 | 1.16 | 29.47 | . |
| 04-00021 | PDF-120 | 3/4" | 13/16-12 | .63 | 16.00 | 1.33 | 33.78 | . |
| 04-00022 | PDF-160 | 1" | 17/16-12 | .75 | 19.05 | 1.63 | 41.40 | . |

Less 20% Discount on 50 Capplugs (Same P/N)

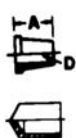
NYLO-SEAL FITTINGS



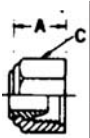
Nylo-Seal tube fittings are exceptionally strong. The bodies, made of nylon, are stronger than machined fittings of similar composition. They are furnished complete with nut/sleeve assemblies, made of acetal copolymer. Since the sleeve snaps into and is retained by the nut there is no fumbling for a loose sleeve. Just insert tube into the fitting and tighten the nut 2 to 2-1/2 full turns.

Note: The most frequently used combination of tube and pipe sizes are 1/4" Tube x 1/8" Pipe and 3/8" Tube x 1/4" Pipe.

259-P CAP, 259-N INSERT (NYLON) SLEEVE ASSEMBLY

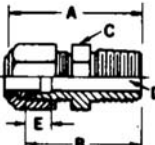


| | Tube O.D. | A | D |
|-------|-----------|------|-------|
| 259-N | 1/4 | 3/8 | 1/8 |
| 259-P | 3/8 | 7/16 | 13/64 |



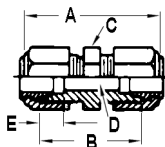
| Tube O.D. | Thd. | A | C |
|-----------|---------|-------|------|
| 1/4 | 7/16-20 | 15/32 | 9/16 |
| 3/8 | 5/8-20 | 37/64 | 3/4 |

268-N MALE CONNECTOR



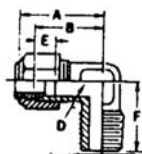
| Tube O.D. | Pipe Thd. | A | B | C | D | E |
|-----------|-----------|---------|---------|-------|-------|-------|
| 1/4 | 1/8 | 1-13/64 | 1 | 5/8 | 15/64 | 15/32 |
| 1/4 | 1/4 | 1-25/64 | 1-3/16 | 5/8 | 15/64 | 11/16 |
| 3/8 | 1/4 | 1-17/32 | 1-21/64 | 13/16 | 5/16 | 19/32 |
| 3/8 | 3/8 | 1-19/32 | 1-25/64 | 13/16 | 11/32 | 19/32 |

262-N UNION



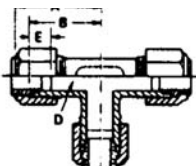
| Tube O.D. | A | B | C | D | E |
|-----------|---------|-------|-------|-------|-------|
| 1/4 | 1-25/64 | 63/64 | 5/8 | 7/32 | 15/32 |
| 3/8 | 1-21/32 | 1-1/4 | 13/16 | 23/64 | 19/32 |

269-N MALE ELBOW



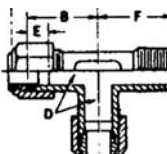
| Tube O.D. | Pipe Thd. | A | B | D | E | F |
|-----------|-----------|--------|-------|-------|------|--------|
| 1/4 | 1/8 | 1-1/64 | 13/16 | 7/32 | 3/8 | 27/32 |
| 1/4 | 1/4 | 1-1/64 | 13/16 | 13/32 | 3/8 | 1-1/32 |
| 3/8 | 1/4 | 1-9/64 | 15/16 | 5/16 | 7/16 | 1-1/32 |
| 3/8 | 3/8 | 1-9/64 | 15/16 | 11/32 | 7/16 | 1-3/32 |

264-N UNION TEE



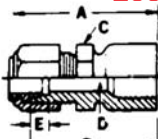
| Tube O.D. | A | B | D | E |
|-----------|---------|-------|-------|-------|
| 1/4 | 1-9/64 | 47/64 | 7/32 | 15/32 |
| 3/8 | 1-11/64 | 31/31 | 11/32 | 19/32 |

271-N MALE RUN TEE



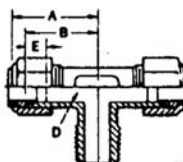
| Tube O.D. | Pipe Thd. | A | B | D | E | F |
|-----------|-----------|--------|-------|-------|-------|--------|
| 1/4 | 1/8 | 59/64 | 21/32 | 7/32 | 15/32 | 3/4 |
| 1/4 | 1/4 | 59/64 | 13/32 | 7/32 | 15/32 | 29/32 |
| 3/8 | 1/4 | 1-5/32 | 61/64 | 5/16 | 19/32 | 1-1/16 |
| 3/8 | 3/8 | 1-3/16 | 61/64 | 23/64 | 19/32 | 1-7/64 |

266-N FEMALE CONNECTOR



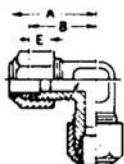
| Tube O.D. | Pipe Thd. | A | B | C | D | E |
|-----------|-----------|---------|--------|-------|-------|-------|
| 1/4 | 1/8 | 1-9/64 | 15/16 | 9/16 | 7/32 | 9/16 |
| 1/4 | 1/4 | 1-5/16 | 1-7/64 | 11/16 | 7/32 | 47/64 |
| 3/8 | 1/4 | 1-27/64 | 1-7/32 | 11/16 | 11/32 | 3/4 |
| 3/8 | 3/8 | 1-27/64 | 1-7/32 | 13/16 | 11/32 | 3/4 |

272-N MALE BRANCH TEE



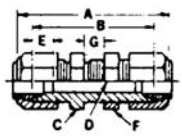
| Tube O.D. | Pipe Thd. | A | B | D | E | F |
|-----------|-----------|---------|-------|-------|-------|--------|
| 1/4 | 1/8 | 15/16 | 47/64 | 7/32 | 15/32 | 3/4 |
| 1/4 | 1/4 | 15/16 | 47/64 | 7/32 | 15/32 | 13/16 |
| 3/8 | 1/4 | 1-11/64 | 31/32 | 5/16 | 19/32 | 1-1/16 |
| 3/8 | 3/8 | 1-11/64 | 31/32 | 23/64 | 19/32 | 1-7/64 |

265-N ELBOW UNION



| Tube O.D. | A | B | D | E |
|-----------|--------|-------|-------|------|
| 1/4 | 1-1/64 | 13/16 | 7/32 | 3/8 |
| 3/8 | 1-5/32 | 15/16 | 11/32 | 7/16 |

282-N BULKHEAD UNION



| Tube O.D. | Pipe Thd. | A | B | C | D | E | F | G |
|-----------|-----------|---------|---------|-------|-------|-------|-----|------|
| 1/4 | 7/16-20 | 1-57/64 | 1-31/64 | 5/8 | 7/32 | 15/32 | 5/8 | 5/16 |
| 3/8 | 5/8-20 | 2-1/4 | 1-53/64 | 13/16 | 11/32 | 19/32 | 7/8 | 3/8 |

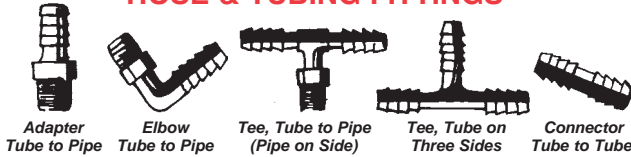
*Use 259-N inserts with all Poly-Flo tubing connections. Not needed with Nylo-Seal tubing.

| Part No. | Tube Size In. | Price Each | Part No. | Size (In) Tube Pipe | Price Each | Part No. | Size (In) Tube Pipe | Price Each |
|----------|---------------|------------|---------------|---------------------|------------|---------------|---------------------|------------|
| 259-N 04 | 1/4 | . | 266-N 04 x 02 | 1/4 x 1/8 | . | 271-N 04 x 02 | 1/4 x 1/8 | . |
| 259-N 06 | 3/8 | . | 266-N 04 x 04 | 1/4 x 1/4 | . | 271-N 04 x 04 | 1/4 x 1/4 | . |
| 259-P 04 | 1/4 | . | 266-N 06 x 04 | 3/8 x 1/4 | . | 271-N 06 x 04 | 3/8 x 1/4 | . |
| 259-P 06 | 3/8 | . | 266-N 06 x 06 | 3/8 x 3/8 | . | 271-N 06 x 06 | 3/8 x 3/8 | . |
| 261-N 04 | 1/4 | . | 268-N 04 x 02 | 1/4 x 1/8 | . | 272-N 04 x 02 | 1/4 x 1/8 | . |
| 261-N 06 | 3/8 | . | 268-N 04 x 04 | 1/4 x 1/4 | . | 272-N 04 x 04 | 1/4 x 1/4 | . |
| 262-N 04 | 1/4 | . | 268-N 06 x 04 | 3/8 x 1/4 | . | 272-N 06 x 04 | 3/8 x 1/4 | . |
| 262-N 06 | 3/8 | . | 268-N 06 x 06 | 3/8 x 3/8 | . | 272-N 06 x 06 | 3/8 x 3/8 | . |
| 264-N 04 | 1/4 | . | 269-N 04 x 02 | 1/4 x 1/8 | . | 282-N 04 | 1/4 | . |
| 264-N 06 | 3/8 | . | 269-N 04 x 04 | 1/4 x 1/4 | . | 282-N 06 | 3/8 | . |
| 265-N 04 | 1/4 | . | 269-N 06 x 04 | 3/8 x 1/4 | . | ---- | ---- | ---- |
| 265-N 06 | 3/8 | . | 269-N 06 x 06 | 3/8 x 3/8 | . | ---- | ---- | ---- |

Less 10% on 50 pieces per size, Less 20% on 100 pieces per size

HOSE FITTINGS – PIPE FITTINGS

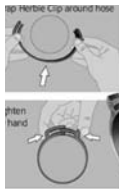
HOSE & TUBING FITTINGS



Hose and tubing Insert Fittings are available in high density polyethylene or Nylon. Use polyethylene fittings with Tygon, nylon or soft rubber tubing to assemble low pressure instrument lines such as airspeed pitot and static lines. Use Nylon fittings in gravity-feed fuel lines and engine breather lines.

| Fitting Type | Size | Polyethylene | | Nylon | |
|----------------------------------|-------------------|--------------|------------|----------|------------|
| | | Part No. | Price Each | Part No. | Price Each |
| ADAPTER Tube to pipe | 3/16Tx1/8P | 0700-150 | . | 0701-150 | . |
| | 1/4Tx1/8P | 0700-153 | . | 0701-153 | . |
| | 5/16Tx1/8P | 0700-156 | . | 0701T-15 | . |
| | 3/8Tx1/8P | 0700-158 | . | 0701-158 | . |
| ELBOW Tube to Pipe | 1/4Tx1/4P | 0700-110 | . | 0701-110 | . |
| | 3/8Tx1/4P | 0700-162 | . | 0701-162 | . |
| | 1/4Tx1/8P | 0710-153 | . | 0711-153 | . |
| | 3/8Tx1/8P | 0710-158 | . | 0711-158 | . |
| Tube to Tube | 1/4Tx1/4P | 0710-110 | . | 0711-110 | . |
| | 3/8Tx1/4P | 0710-162 | . | 0711-162 | . |
| | 1/4Tx1/4T | 0710-015 | . | 0711-015 | . |
| REDUCING CONNECTOR | 3/8Tx3/8T | 0710-020 | . | 0711-020 | . |
| | 1/4Px1/8P | 0725-153 | . | 0726-153 | . |
| | 3/8Px1/8P | 0725-161 | . | 0726-161 | . |
| TEE Tube to pipe | 3/8Px1/4P | 0725-162 | . | 0726-162 | . |
| | 1/4Tx1/4Tx1/8P | 0715-153 | . | 0716-153 | . |
| | 3/8Tx3/8Tx1/4P | 0715-162 | . | 0716-162 | . |
| TEE All Tube | 1/4Tx1/4Tx1/4P | 0715-110 | . | 0716-110 | . |
| | 3/16Tx3/16Tx3/16T | 0715-011 | . | 0716-011 | . |
| | 1/4Tx1/4Tx1/4T | 0715-015 | . | 0716-015 | . |
| CONNECTOR Tube to Tube | 3/8Tx3/8Tx3/8T | 0715-020 | . | 0716-020 | . |
| | 1/4Tx1/4T | 0705-015 | . | 0706-015 | . |
| | 3/8Tx3/8T | 0705-020 | . | 0706-020 | . |

HERBIE CLIP HOSE CLAMPS



The Herbie Clip hose clamp is the original double toothed (double row of teeth) ratchet clamp. This makes the Herbie clip twice as strong (up to 200psi depending on hose work and spigot) as similar hose clamps with a single row of teeth.

The Herbie Clip hose clamp combines its high strength with other key features such as: non-corrosive and resistant to many chemicals, simple to install can be fitted before or after the hose is in place, minimum leak path, lightweight, easy to use (no sharp edges to cut the operators), fully compliant with ROHS, UL listed (nylon 6.6.)

| CLIP SIZE | MIN. DIA. (in) | MAX DIA.(in) | PART NO. | PRICE |
|-----------|----------------|--------------|----------|-------|
| A | .22 | .26 | 05-02698 | . |
| AA | .26 | .31 | 05-02699 | . |
| B | .31 | .36 | 05-02701 | . |
| C | .40 | .47 | 05-02702 | . |
| CC | .44 | .51 | 05-02695 | . |
| D | .47 | .54 | 05-02703 | . |
| E | .52 | .59 | 05-02704 | . |
| F | .59 | .67 | 05-02705 | . |
| G | .67 | .75 | 05-02706 | . |
| H | .71 | .81 | 05-02696 | . |
| J | .80 | .91 | 05-02707 | . |
| K | .87 | .98 | 05-02708 | . |

HERBIE CLIP HOSE CLAMP TOOLS



INSTALLATION TOOL
Recommended for medium volume use.
Fits sizes A to K.
P/N.....05-02709

REMOVAL TOOL

It is easy to install and remove using a choice of manual.
P/N.....05-02710



BRASS POLY-FLO FITTINGS

Poly-Flo Flareless tube fittings consist of a brass body, nut and sleeves. Use with PolyFlo, PVC or Nylaflo pressure tubing. The Poly-Flo fittings have the same configuration as Nylo-Seal fittings of the same basic part number.

| 261UB - NUT WITH SLEEVE | | | |
|-------------------------|-------------|-------------|------------|
| Tube O.D. | Thread Size | Part Number | Price Each |
| 1/8 | 5/16-24 | 261UB-02 | . |
| 3/16 | 3/8-24 | 261UB-03 | . |
| 1/4 | 3/8-24 | 261UB-04 | . |

| 262P - UNION | | | |
|--------------|-------------|-------------|------------|
| Tube O.D. | Thread Size | Part Number | Price Each |
| 1/8 | -- | 262P-02 | . |
| 3/16 | -- | 262P-03 | . |
| 1/4 | -- | 262P-04 | . |

| 264P - UNION TEE | | | |
|------------------|-------------|-------------|------------|
| Tube O.D. | Thread Size | Part Number | Price Each |
| 3/16 | -- | 264P-03 | . |
| 1/4 | -- | 264P-04 | . |

| 266P - FEMALE CONNECTOR | | | |
|-------------------------|-------------|-------------|------------|
| Tube O.D. | Pipe Thread | Part Number | Price Each |
| 1/8 | 1/8 | 266P-02x02 | . |
| 3/16 | 1/8 | 266P-03x02 | . |

| 268P - MALE CONNECTOR | | | |
|-----------------------|-------------|-------------|------------|
| Tube O.D. | Pipe Thread | Part Number | Price Each |
| 1/8 | 1/8 | 268P-02x02 | . |
| 3/16 | 1/8 | 268P-03x02 | . |
| 1/4 | 1/8 | 268P-04x02 | . |

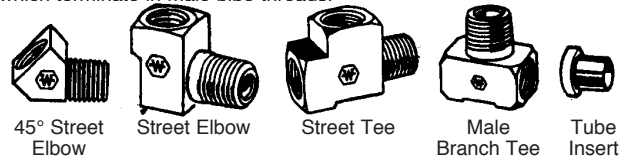
| 269P - MALE ELBOW | | | |
|-------------------|-------------|-------------|------------|
| Tube O.D. | Pipe Thread | Part Number | Price Each |
| 3/16 | 1/8 | 269P-03x02 | . |
| 1/4 | 1/8 | 269P-04x02 | . |

| 270P - FEMALE ELBOW | | | |
|---------------------|-------------|-------------|------------|
| Tube O.D. | Pipe Thread | Part Number | Price Each |
| 3/16 | 1/8 | 270P-03x02 | . |

| 272P - MALE BRANCH TEE | | | |
|------------------------|-------------|-------------|------------|
| Tube O.D. | Pipe Thread | Part Number | Price Each |
| 3/16 | 1/8 | 272P-03x02 | . |

WEATHERHEAD BRASS PIPE FITTINGS

These brass elbows and tees provide flexibility in the routing of lines which terminate in male pipe threads.



45° STREET ELBOW

| Part Number | Pipe Thread | Price Each |
|-------------|-------------|------------|
| 3350x2 | 1/8 | . |
| 3350x4 | 1/4 | . |
| 3350x6 | 3/8 | . |

90° STREET ELBOW

| Part Number | Pipe Thread | Price Each |
|-------------|-------------|------------|
| 3400x2 | 1/8 | . |
| 3400x4 | 1/4 | . |
| 3400x6 | 3/8 | . |

MALE BRANCH TEE

| Part Number | Pipe Thread | Price Each |
|-------------|-------------|------------|
| 3600x2 | 1/8 | . |
| 3600x4 | 1/4 | . |
| 3600x6 | 3/8 | . |

STREET TEE

| Part Number | Pipe Thread | Price Each |
|-------------|-------------|------------|
| 3750x2 | 1/8 | . |
| 3750x4 | 1/4 | . |
| 3750x6 | 3/8 | . |

MISC. WEATHERHEAD BRASS FITTINGS

| Part No. | Description | Size | Price Each |
|----------|----------------|--------------|------------|
| 2030-4 | Tube Insert* | 1/8ODx3/32ID | . |
| 3220x4x2 | Bushing | 1/8FPx1/4MP | . |
| 6100x2 | Nut | 1/8 | . |
| 6200x2 | Male Connector | 1/8Tx1/8P | . |
| 66x2 | Fml Connector | 1/8Tx1/8P | . |

* Used for Long-EZ brake fittings.

WEATHERHEAD BARB-TITE REUSABLE HOSE ENDS



Designed for use with hoses with maximum working pressure up to 250 PSI. Easy to assemble and disassemble.

| Part No. | Description | Hose I.D. | Pipe Size | Cut-off Factor | Price Each |
|------------|---------------|-----------|-----------|----------------|------------|
| 10006B-102 | Straight Pipe | 3/8" | 1/8" | 1-1/2 | . |
| 10006B-104 | | 3/8" | 1/4" | 1-1/2 | . |
| 10006B-106 | | 3/8" | 3/8" | 1-11/16 | . |
| 10006B-C02 | 90° Pipe | 3/8" | 1/8" | 3/8 | . |
| 10006B-C04 | | 3/8" | 1/4" | 3/8 | . |



BRASS TUBE FITTINGS

| Description | Part No. | Price |
|---|----------|-------|
| Brass Tube Fitting 3/8 inch Pipe x 3/8 inch | 04-00833 | . |
| Brass Tube Fitting 1/4 inch Pipe x 3/8 inch | 04-00834 | . |

HA

CLAMPS



MS21919 DG & WDG CLAMPS

Loop-type cushioned aluminum alloy clamp. Cushion (non-fuel resistant) is bonded to inner surface and edges of clamp. WDG clamps are cushion wedge type. Cushion assures tight fit and eliminates vibration, thus preventing line abrasion.

| Tube Dia. | Dash No. | Price Each | Dash No. | Price Each | Tube Dia. | Dash No. | Price Each | Dash No. | Price Each |
|-----------|----------|------------|----------|------------|-----------|----------|------------|----------|------------|
| 1/8 | DG2 | . | WDG2 | . | 1-5/16 | DG21 | . | WDG21 | . |
| 3/16 | DG3 | . | WDG3 | . | 1-3/8 | DG22 | . | WDG22 | . |
| 1/4 | DG4 | . | WDG4 | . | 1-7/16 | DG23 | . | WDG23 | . |
| 5/16 | DG5 | . | WDG5 | . | 1-1/2 | DG24 | . | WDG24 | . |
| 3/8 | DG6 | . | WDG6 | . | 1-9/16 | DG25 | . | WDG25 | . |
| 7/16 | DG7 | . | WDG7 | . | 1-5/8 | DG26 | . | WDG26 | . |
| 1/2 | DG8 | . | WDG8 | . | 1-3/4 | DG28 | . | WDG28 | . |
| 9/16 | DG9 | . | WDG9 | . | 1-7/8 | DG30 | . | | |
| 5/8 | DG10 | . | WDG10 | . | 1-15/16 | DG31 | . | | |
| 11/16 | DG11 | . | WDG11 | . | 2 | DG32 | . | | |
| 3/4 | DG12 | . | WDG12 | . | 2-1/16 | DG33 | . | | |
| 13/16 | DG13 | . | WDG13 | . | 2-1/8 | DG34 | . | | |
| 7/8 | DG14 | . | WDG14 | . | 2-1/4 | DG36 | . | | |
| 15/16 | DG15 | . | WDG15 | . | 2-3/8 | DG38 | . | | |
| 1 | DG16 | . | WDG16 | . | 2-1/2 | DG40 | . | | |
| 1-1/16 | DG17 | . | WDG17 | . | 2-5/8 | DG42 | . | | |
| 1-1/8 | DG18 | . | WDG18 | . | 2-3/4 | DG44 | . | | |
| 1-3/16 | DG19 | . | WDG19 | . | 2-7/8 | DG46 | . | | |
| 1-1/4 | DG20 | . | WDG20 | . | 3 | DG48 | . | | |
| | | | | | 3-1/8 | DG50 | . | | |

Less 15% in lots of 50. May be assorted.

AP



QS 100 HOSE CLAMPS



Tangential worm-screw type for use on fuel, oil, air and coolant lines. Worm drive provides uniform clamping pressure without distorting hose. The QS100 series has stainless steel band with cadmium-plated carbon steel thumb screw. To attach, just push housing to the desired position on the band, snugly around hose, & the threads of the worm screw will drop into the slots. Tighten thumb screw with finger pressure - no tools required.

| QS100 Dash No. | Dia. Range (In.) | | Price Each | QS100 Dash No. | Dia. Range (In.) | | Price Each |
|----------------|------------------|--------|------------|----------------|------------------|-------|------------|
| | Min. | Max. | | | Min. | Max. | |
| M6W | 7/16 | 25/32 | . | M24W | 1-1/16 | 2 | . |
| M8W | 1/2 | 29/32 | . | M28W | 1-1/16 | 2-1/4 | . |
| M10W | 9/16 | 1-1/16 | . | M32W | 1-9/16 | 2-1/2 | . |
| M12W | 11/16 | 1-1/4 | . | M36W | 1-13/16 | 2-3/4 | . |
| M16W | 13/16 | 1-1/2 | . | M40W | 2-1/16 | 3 | . |

Less 15% in lots of 50. May be assorted.



QS 200 HOSE CLAMPS



Aero-Seal stainless steel clamps are for industrial & aircraft applications. This tangential worm-screw type clamp is for use on fuel, oil, air & coolant lines. The worm drive provides uniform clamping pressure without distorting hose. Attach by pushing housing snugly around the hose to desired position on the band—the threads of the worm screw will drop into slots. Tighten slotted head with screwdriver.

| QS200 Dash No. | Dia. Range (In.) | | Price Each | QS200 Dash No. | Dia. Range (In.) | | Price Each |
|----------------|------------------|--------|------------|----------------|------------------|-------|------------|
| | Min. | Max. | | | Min. | Max. | |
| -06H | 7/16 | 25/32 | . | -44H | 2-5/16 | 3-1/4 | . |
| -08H | 1/2 | 29/32 | . | -48H | 2-9/16 | 3-1/2 | . |
| -10H | 9/16 | 1-1/16 | . | -52H | 2-13/16 | 3-3/4 | . |
| -12H | 11/16 | 1-1/4 | . | -56H | 3-1/16 | 4 | . |
| -16H | 13/16 | 1-1/2 | . | -60H | 3-5/16 | 4-1/4 | . |
| -20H | 13/16 | 1-3/4 | . | -64H | 3-9/16 | 4-1/2 | . |
| -24H | 1-1/16 | 2 | . | -72H | 4-1/8 | 5 | . |
| -28H | 1-5/16 | 2-1/4 | . | -80H | 4-5/8 | 5-1/2 | . |
| -32H | 1-9/16 | 2-1/2 | . | -88H | 5-1/8 | 6 | . |
| -36H | 1-13/16 | 2-3/4 | . | -96H | 5-5/8 | 6-1/2 | . |
| -40H | 2-1/16 | 3 | . | --- | --- | --- | --- |

Less 15% in lots of 50. May be assorted.

BREEZE AERO-SEAL STAINLESS CLAMP KITS

Pack A : Contains 2 each QS200 -52H, -64H, -72H and -80H.

P/N 05-00942.....

Pack B : Contains 2 each QS200 -8H, -12H, -24H, -32H, -40H, & -64H.

P/N 05-01340.....



SNAPPER CLAMPS

A quick ratchet closure provides specific take-up, eliminating excessive tightening which may mutilate the hose.

3/8" for 1/4" fuel line

P/N 05-00940.....

1", for radiator hose

P/N 05-00941.....



AN742 PLAIN CLAMPS

Plain loop-type line support clamps, made of aluminum alloy meeting specification QQ-A-362, condition T. Heat-treated to a minimum tensile strength of 50,000 PSI.

| Dash No. | For Tube O. D. (In.) | Price Each | Dash No. | For Tube O. D. (In.) | Price Each |
|----------|----------------------|------------|----------|----------------------|------------|
| -D3 | 3/16 | . | -D8 | 1/2 | . |
| -D4 | 1/4 | . | -D10 | 5/8 | . |
| -D5 | 5/16 | . | -D12 | 3/4 | . |
| -D6 | 3/8 | . | -D15 | 15/16 | . |
| -D7 | 7/16 | . | -D16 | 1 | . |

Less 15% in lots of 50. May be assorted.



BREEZE MINIATURE CLAMPS

The best clamp for small diameter hose and tubing. Stainless steel band and housing with plated carbon steel screw. Applies an even circumferential pressure with less torque.

7/32" to 5/8"P/N 6504 Ea.

7/16" to 7/8"P/N 6506 Ea.

OETIKER STEPLESS SCREW CLAMPS



Oetiker Stepless Screw Clamps feature a unique tongue-in-groove design to provide a perfect 360° seal. Their narrow band width of 9 mm is designed to fit grooved objects. They are ideal where specialty clamping needs have to be met and the application calls for a smooth inner surface such as on flexible duct sleeves.

The tongue-in-groove design provides that "stepless" complete seal. Manufactured using 300 AISI series stainless steel.

| P/N | Clamping O.D. Range Inches | Price Each | P/N | Clamping O.D. Range Inches | Price Each |
|-------|----------------------------|------------|-------|----------------------------|------------|
| 028-9 | 13/16" - 1-1/8" | . | 090-9 | 3-5/16" - 3-1/2" | . |
| 031-9 | 15/16" - 1-1/4" | . | 095-9 | 3-1/2" - 3-3/4" | . |
| 032-9 | 1-1/16" - 1-1/4" | . | 100-9 | 3-11/16" - 3-15/16" | . |
| 036-9 | 1-1/4" - 1-7/16" | . | 105-9 | 3-15/16" - 4-1/8" | . |
| 040-9 | 1-3/8" - 1-9/16" | . | 110-9 | 4-1/8" - 4-5/16" | . |
| 045-9 | 1-9/16" - 1-3/4" | . | 115-9 | 4-5/16" - 4-1/2" | . |
| 050-9 | 1-3/4" - 2" | . | 120-9 | 4-1/2" - 4-11/16" | . |
| 055-9 | 1-15/16" - 2-1/8" | . | 125-9 | 4-11/16" - 4-15/16" | . |
| 060-9 | 2-1/8" - 2-3/8" | . | 130-9 | 4-7/8" - 5-1/8" | . |
| 065-9 | 2-5/16" - 2-9/16" | . | 135-9 | 5-1/16" - 5-5/16" | . |
| 070-9 | 2-9/16" - 2-3/4" | . | 140-9 | 5-1/2" - 5-11/16" | . |
| 075-9 | 2-3/4" - 3" | . | 145-9 | 5-11/16" - 5-7/8" | . |
| 080-9 | 2-15/16" - 3-1/8" | . | 150-9 | 5-7/8" - 6-1/16" | . |
| 085-9 | 3-1/8" - 3-5/16" | . | 160-9 | 6-1/16" - 6-1/4" | . |
| | | | 165-9 | 6-1/4" - 6-1/2" | . |



LINE CLAMPS

These line clamps are lightweight but tough enough for the most rugged applications. Feature single piece .030" thick aluminum construction. No more messy bundles. Each clamp is shaped to hold braided line, tubing, or wiring securely, without pinching. Secured w/ standard tie wraps, these clamps keep movement and wear to a minimum. Can be adjusted to mount on any tubing from 3/4".

| Size | P/N | Price | Size | P/N | Price |
|------|----------|-------|------|----------|-------|
| 1/4" | 05-00004 | . | 5/8" | 05-00007 | . |
| 3/8" | 05-00005 | . | 3/4" | 05-00008 | . |
| 1/2" | 05-00006 | . | 1" | 05-00009 | . |

30 piece assortment - includes 5 of each clamp
P/N 05-02205.....

NYLO-SEAL TUBING - POLY-FLO TUBING



NYLO-SEAL NYLON TUBING

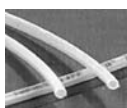
Nylo-Seal type "NSF" semi-rigid natural color tubing is made of Nylon-II and is far superior to other types of Nylon tubing. It does not depend on moisture for flexibility and does not become brittle. It has excellent resistance to flexural fatigue and can be used where there is vibration or tube movement. Self-extinguishing under A.S.T.M. Test D635-44. Excellent for instrument lines. NSR nyloseal tubing is black in color and is rated to 2500 lbs. It can be used for higher pressure applications than the NSF tubing.

NSF TUBING

| Part No. | O.D. (In.) | Wall (In.) | Burst Pressure (PSI) | Min. Bend Radius | Wt. (Lb/Ft) | Price per Ft. |
|----------|------------|------------|----------------------|------------------|-------------|---------------|
| 05-01009 | 1/8 | .026 | 1500 | 3/8" | .004 | . |
| 05-01010 | 3/16 | .039 | 1500 | 5/8" | .008 | . |
| 05-01011 | 1/4 | .050 | 1500 | 7/8" | .015 | . |
| 05-01012 | 3/8 | .075 | 1500 | 1-1/2" | .032 | . |

NSR TUBING

| Part No. | O.D. (In.) | Wall (In.) | Burst Pressure (PSI) | Min. Bend Radius | Wt. (Lb/Ft) | Price per Ft. |
|----------|------------|------------|----------------------|------------------|-------------|---------------|
| 05-01228 | 1/8 | .026 | 2500 | 3/8" | .004 | . |
| 05-01229 | 1/4 | .050 | 2500 | 7/8" | .015 | . |
| 05-01231 | 3/8 | .075 | 2500 | 1-1/2" | .032 | . |



NYLAFLOW NYLON TUBING

Nylon Polyenco® pressure tubing is a super-tough, low friction, high flexibility tubing that can be used for cable protectors or in short pieces, as small bushings and washers. Suitable for use in oil, air, vacuum, fuel and low pressure hydraulic lines. It Resists abrasion - wears better than aluminum or steel tubing. Has an extremely smooth inner surface with a very low coefficient of friction. Used for brake lines, and also as a conduit for the rudder cables in the Rutan VariEze and Long-EZ. Rated 1000 psi. Use Poly-Flo fittings.

| Type | OD | ID | PSI | Part No. | Price |
|------------------------|------|----------------|------|----------|-------|
| Thicker wall | 1/8 | .096 | 1000 | 05-00105 | . |
| Thicker wall | 3/16 | .138 | 1000 | 05-00110 | . |
| Thicker wall | 1/4 | .190 | 1000 | 05-00115 | . |
| High Bursting Pressure | 1/4 | .150 | 2500 | 05-04349 | . |
| High Bursting Pressure | 3/16 | .111 (approx.) | 2500 | 05-04355 | . |

NEOPRENE HOSE

Neoprene tubing is used in instrument hookups and for battery drains. Use AN hose fittings such as AN840 with Breeze Mini Clamps, nylon or polyethylene hose fittings such as 0710-153. Not for use as fuel or oil lines.

| I.D. | Wall | Part No. | Price/Ft |
|-------|-------|----------|----------|
| 3/16" | 1/16" | 05-00200 | . |
| 1/4" | 1/16" | 05-00300 | . |
| 3/8" | 1/16" | 05-00400 | . |



TYGON TUBING

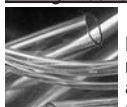
Tygon tubing is flexible, tough, abrasion-resistant and non-aging. Ideal for hookup of airspeed pitot and static lines (not recommended for pressurized applications). Use AN hose fittings such as AN840 with Breeze Mini Clamps, nylon or polyethylene hose fittings such as 0710-153.

3/8" O.D. X 1/4" I.D. P/N 05-00944 Ft
1/2" O.D. X 3/8" I.D. P/N 05-00945 Ft

BING ALCOHOL RESISTANT FUEL LINE

This fuel line is blue in color and does not rot or deteriorate from the inside, clogging the carburetor or fuel system. It withstands 50 PSI and tensile strength is 8000 PSI. It is resistant to temperatures of -65° to 220°F without deterioration, features exceptional resistance to gasoline, oil, oxygen, and ozone, and has high elastic memory allowing use of Delrin or nylon barbed fittings in low pressure applications without the need for external clamps.

| Description | ID | OD | Part No. | Price |
|----------------------------------|-----|-----|----------|-------|
| Bing Alcohol Resistant Fuel Line | 1/4 | 3/8 | 05-00500 | . |
| Bing Alcohol Resistant Fuel Line | 1/8 | 1/4 | 05-00560 | . |



NYLON TUBING

Nylon tubing is a popular choice for low pressure pneumatic applications because of its combination of flexibility and toughness. Nylon retains its performance integrity in elevated temperatures and generally, because of its higher pressure and temperature characteristics, Nylon will have a greater flow passage than composite tubing made from other material with the same outside diameter.

| Part No. | OD | ID | Price |
|----------|-----|-----|-------|
| 0500-165 | 7/8 | 5/8 | . |
| 0500-180 | 1 | 3/4 | . |



POLY-FLO POLYETHYLENE TUBING

Poly-Flo tubing is a flexible, economical thermoplastic tubing fabricated from high molecular weight polyethylene for improved strength. The base resin has the greatest resistance to environmental stress cracking of all the regular polyethylenes. It meets A.S.T.M. D-1248-60T, Type 1, Class A, Grade 4 and Federal Specification LP-590, Type 2, Grade 7. Used for instrument or pneumatic lines. Use Nylo-Seal fittings (259-N inserts are required), nylon or polyethylene hose fittings such as 0710-153. Color - natural.

| Part No. | Tube OD | Wall | Bend Radius | PSI at 75 F | PSI at 150 F | Price |
|----------|---------|-------|-------------|-------------|--------------|-------|
| 44-P | 1/4 | 0.040 | 1.250 | 190 | 75 | . |
| 66-P | 3/8 | 0.062 | 2.00 | 205 | 80 | . |
| 88-P | 1/2 | 0.062 | 2.500 | 150 | 60 | . |

CHEMICAL RESISTANCE

| Chemical (at 72°F.) | Poly-Flo (Polyethylene) | Nylo-SealNSR (Nylon 11) |
|---------------------------|-------------------------|-------------------------|
| Hydrocarbons (Fuel & Oil) | U | A |
| Chlorinated Hydrocarbons | U | A |
| Acetone, MEK | VariesA | |
| Toluene, Xylene | U | A |
| Weak Acids | A | A |
| Strong Acids | A | Varies |
| Weak Bases | A | A |
| Strong Bases | A | A |

A: Acceptable U: Unsatisfactory

PHYSICAL PROPERTIES OF TUBING BASE POLYMER

| Physical Property | Poly-Flo (Polyethylene) | Nylo-SealNSR (Nylon 11) |
|--------------------------------|-------------------------|-------------------------|
| Tensile Strength | 2,100 psi | 8,500 psi |
| Elongation | 600% | 160% |
| Water Absorption | 0.014% | 0.4% |
| Hardness | R-10 | R-86 |
| Specific Gravity | 0.92 | 302°F. |
| Heat Distortion Point (66 psi) | 107°F. | 302°F. |
| Modulus of Elasticity | 13,000 psi | 177,000 psi |

Data shown obtained from test on tubing raw material under A.S.T.M. procedures.

PRESSURE RATINGS

| Operating Temperature | Poly-Flo (Polyethylene) | | Nylo-Seal NSR** (Nylon 11) | |
|-----------------------|-------------------------|-------------------------|----------------------------|-------------------------|
| | Burst Pressure* PSI | Max. Work Pressure* PSI | Burst Pressure* PSI | Max. Work Pressure* PSI |
| Room Temp. | 250-600 | 75-160 | 2500 | 625 |
| 140°F. | 125-300 | 37-80 | 1800 | 425 |
| 230°F. | UNUSABLE | | 1400 | 350 |
| 280°F. | UNUSABLE | | UNUSABLE | |

*Depends on tube size and wall thickness. Working pressure based on a safety factor of 4.

**Satisfactory for continuous operation up to 180° F. Becomes embrittled above this point.

POLYURETHANE TUBING



Flexible polyurethane tubing has greater abrasion and tear resistance than any other type of plastic tubing. Won't age or oxidize. Excellent low temperature flexibility - avoids brittleness. Tensile strength 5900 PSI. Use AN hose fittings such as AN840 with Breeze Mini Clamps, nylon or polyethylene hose fittings such as 0710-153. Sold by the foot.

| Mfg PN | OD | ID | Our PN | Price |
|----------|-----|-----|----------|-------|
| 0585-071 | 3/8 | 1/4 | 0585-071 | . |
| 0585-107 | 1/2 | 3/8 | 0585-107 | . |
| 0585-165 | 7/8 | 5/8 | 0585-165 | . |
| 0585-180 | 3/4 | 1 | 05-04246 | . |

PARKER SUPER-FLEX FL FUEL LINE HOSE

Parker's fuel line hose includes a new thermoplastic barrier that helps protect our atmosphere from harmful hydrocarbons that escape through the carcass of ordinary fuel hose. This new hose surpasses all of CARB's stringent permeation requirements and is similar to SAE30R7 specifications. The Super-Flex FL hose also features an abrasion and weather resistant cover to help protect from external application abuse. **Approved for biodiesel fuels that meet ASTM D 6751 requirements per UL guidelines for Biodiesel compatibility.** 4:1 Design factor

| | |
|---------------------------|-----------------------------------|
| Tube: | NBR with a thermoplastic barrier |
| Cover: | Black Hypalon |
| Reinforcement: | Braided Polyester |
| Temperature Range: | -30°F to +257°F (-34°C to +125°C) |

| Part No. | ID (in.) | Reinf. Braids | OD(in.) | OD(mm) | Approx. wt. per 100 ft. | Min. Bend Rad. | Max Rec. WP | Price Per Ft. |
|----------|----------|---------------|---------|--------|-------------------------|----------------|-------------|---------------|
| 05-03597 | 1/4 | 1 | 0.500 | 12.7 | 9.7 | - | 100 | . |
| 05-03598 | 3/8 | 1 | 0.625 | 15.9 | 1.30 | - | 100 | . |



HOSE - HOSE FITTINGS

MIL6000D OIL AND COOLANT HOSE



Inside and out, MIL6000D is designed to handle the effects of oil, alcohol, coolant, and water. The tube is oil resistant with a black cover reinforced with high strength mildew resistant yarns. It withstands extreme temperature conditions from -40°F to +250°F. Meets or exceeds U.S. military specs. Lightweight, flexible and easy-to-

handle, making it the perfect hose for hard-to-get-to spots in tight engine compartments. Not recommended for fuel lines.

| Part No. | Hose Dimensions | | Burst Pressure (PSI) | Wt./ Ft. (Lb.) | Price Per Ft. |
|----------|-----------------|------------|----------------------|----------------|---------------|
| | I.D. (In.) | O.D. (In.) | | | |
| 6000-4 | 1/4 | 5/8 | 1,000 | .14 | . |
| 6000-5 | 5/16 | 11/16 | 1,000 | .16 | . |
| 6000-6 | 3/8 | 3/4 | 1,000 | .18 | . |
| 6000-8 | 1/2 | 7/8 | 1,000 | .22 | . |
| 6000-10 | 5/8 | 1 | 1,000 | .26 | . |
| 6000-12 | 3/4 | 1-1/8 | 1,000 | .27 | . |
| 6000-14 | 7/8 | 1-1/4 | 1,000 | .32 | . |
| 6000-16 | 1 | 1-3/8 | 1,000 | .38 | . |

MIL-H-6000 HOSE AVAILABLE IN 10 FT MAXIMUM LENGTHS
MIL-H-6000 IS SUPERCEDED BY MIL-DTL-6000C
NOT RECOMMENDED FOR FUEL LINES

AEROQUIP 306 HOSE (MIL-H-5593)

A low-pressure hose for instrument air & vacuum lines. Consists of an inner tube of seamless synthetic rubber, reinforced with a single layer of cotton braid and a synthetic rubber cover. Used with slip-over hose fittings such as the AN840 series, or with Aeroquip 471 hose fittings when connecting to AN type fittings. Conforms to Specification MIL-H-5593. Specify hose I.D. when ordering.

| Part No. | Hose Dimensions | | Burst Pressure (PSI) | Wt./ Ft. (Lb.) | Price Per Ft. |
|----------|-----------------|------------|----------------------|----------------|---------------|
| | I.D. (In.) | O.D. (In.) | | | |
| 306-2 | 1/8 | 11/32 | 1,000 | .056 | . |
| 306-4 | 1/4 | 15/32 | 1,000 | .072 | . |
| 306-6 | 3/8 | 19/32 | 1,000 | .096 | . |
| 306-8 | 1/2 | 3/4 | 750 | .144 | . |
| 306-10 | 5/8 | 7/8 | 700 | .168 | . |

AEROQUIP 471 HOSE FITTING USED WITH AEROQUIP 306 HOSE

Aeroquip 471 hose fittings consist of an AN818 nut, an externally threaded 37° nipple and an internally threaded hose socket. All components are anodized aluminum. Fittings conform to MS27404.

| Part No. | Tube Size (In.)* | AN818 Nut Thread Size | Price Ea. |
|----------|------------------|-----------------------|-----------|
| 471-2D | 1/8" | 5/6-24 | . |
| 471-4D | 1/4 | 7/16-20 | . |
| 471-6D | 3/8 | 9/16-18 | . |
| 471-8D | 1/2 | 3/4-16 | . |

*Corresponds to tube O.D. of AN-type flared tube fittings. Not an Aeroquip dimension.

AEROQUIP ASSEMBLY MANDRELS FOR AIRCRAFT HOSE ASSEMBLIES

For use with Aeroquip 491 fittings. These tools are recommended to avoid damage to the sealing surface and to properly support the inner tube. **Note:** These are Aeroquip Factory Mandrels, which are highly recommended for best results.

| Hose Size | #491 Fitting P/N | Mandrel P/N | Price | Hose Size | #491 Fitting P/N | Mandrel P/N | Price |
|-----------|------------------|-------------|-------|-----------|------------------|-------------|-------|
| 3/16" | 491-3 | S-1051-3* | . | 1/2" | 491-8 | S-1051-8 | . |
| 1/4" | 491-4 | S-1051-4* | . | 5/8" | 491-10 | S-1051-10 | . |
| 5/16" | 491-5 | S-1051-5* | . | 3/4" | 491-12 | S-1051-12 | . |
| 3/8" | 491-6 | S-1051-6* | . | | | | |

*With Removable mandrel. Aeroquip Qty. Discount: 15% for 20 ft.; 20% for 50 ft.; 25% for 100 ft. or more (Per Item)

AEROQUIP FITTINGS - 8791

For AE701 Hose.



| Part No. | Price | Part No. | Price |
|----------|-------|----------|-------|
| 8791-4 | . | 8791-8D | . |
| 8791-6D | . | 8791-10D | . |

AEROQUIP FITTINGS - 526

For AE701 Hose.



| Part No. | Price | Part No. | Price |
|----------|-------|----------|-------|
| 526-4 | . | 526-8D | . |
| 526-6D | . | 526-10D | . |

AEROQUIP 303 HOSE



This standard hose is used in med-pressure a/c hydraulic fuel, oil and coolant systems.

An inner tube of seamless synthetic rubber is reinforced with a synthetic-impregnated single-wire braid over a single cotton braid and an outer cover of synthetic-impregnated oil-resistant cotton braid. Operating temperature -65° to 250°F. Conforms to MIL-H-8794 (supersedes MIL-H-5511A). Used with Aeroquip 491 hose fittings.

| Hose P/N* | For Tubing Size | Hose I.D. | Max. Oper. Pressure** (PSI) | Wt. per Ft. (Lb.) | Price Per Ft. |
|-----------|-----------------|-----------|-----------------------------|-------------------|---------------|
| 303-3 | 3/16 | 1/8 | 3,000 | .120 | . |
| 303-4 | 1/4 | 3/16 | 3,000 | .132 | . |
| 303-5 | 5/16 | 1/4 | 3,000 | .156 | . |
| 303-6 | 3/8 | 5/16 | 2,000 | .228 | . |
| 303-8 | 1/2 | 13/32 | 2,000 | .264 | . |
| 303-10 | 5/8 | 1/2 | 1,750 | .372 | . |
| 303-12 | 3/4 | 5/8 | 1,500 | .456 | . |

* Corresponds to dash no. of Aeroquip 491 hose fittings.

** Safety factor of 4.

AEROQUIP 491 HOSE FITTINGS USED WITH AEROQUIP 303 HOSE

P/N 491-3

Aeroquip 491 hose fittings consist of an AN818 style nut, an externally threaded 37° nipple and an internally threaded hose socket. Fittings of sizes 3 through 6 have nuts and nipples of cadmium plated steel. Nuts and nipples for size 8 and larger are of anodized aluminum. Fittings conform to MS24587.

| Part No. | Tube Size (In.)* | AN818 Nut Thread Size** | Price Each |
|----------|------------------|-------------------------|------------|
| 491-3 | 3/16 | 3/8-24 | . |
| 491-4 | 1/4 | 7/16-20 | . |
| 491-5 | 5/16 | 1/2-20 | . |
| 491-6 | 3/8 | 9/16-18 | . |
| 491-8D | 1/2 | 3/4-16 | . |
| 491-10D | 5/8 | 1-1/16-12 | . |
| 491-12D | 3/4 | 1-1/16-12 | . |

* Corresponds to dash no. of Aeroquip 816 hose fittings.

** Safety factor of 4.

MILSPEC MANDRELS

| PN | Hose | Fitting | Price |
|----------|---|---------|-------|
| 05-01885 | 3/16 | MS-3M | . |
| 05-01886 | 1/4 | MS-4M | . |
| 05-01887 | 5/16 | MS-5M | . |
| 05-01888 | 3/8 | MS-6M | . |
| 05-04241 | 1/2 | MS-8M | . |
| 05-04242 | 5/8 | MS-10M | . |
| 05-04243 | 3/4 | MS-12M | . |
| 05-04544 | Includes 1 each of the MilSpec Mandrels | | |

AEROQUIP 666 HOSE



Aeroquip 666 medium pressure Teflon hose is widely used in aircraft applications handling fuel,

oils, and other fluids. It is unaffected by all fuels, oils, alcohols, coolants, or solvents commonly use in aircraft. Construction of Aeroquip 666 hose is of spiral extruded Teflon resin for the inner tube with a reinforcement and outer cover of Type 300 Series stainless steel wire braid. The result is a lightweight hose able to withstand prolonged flexing and vibration under all service conditions. Aeroquip 666 hose is also use in hydraulic and pneumatic applications at pressures up to 1500 psi.

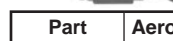
| Hose Part No. | Hose I.D. (inches) | Hose O.D. (inches) | Max. Oper. Pressure | Wt. Per Ft. (lbs.) | Price Per Ft. |
|---------------|--------------------|--------------------|---------------------|--------------------|---------------|
| 666-4 | .188 | .312 | 1500 | .08 | . |
| 666-5 | .250 | .375 | 1500 | .09 | . |
| 666-6 | .313 | .466 | 1500 | .11 | . |
| 666-8 | .406 | .562 | 1500 | .14 | . |
| 666-10 | .500 | .656 | 1500 | .19 | . |
| 666-12 | .625 | .789 | 1000 | .24 | . |

REUSABLE 37° FITTINGS FOR #666 HOSE



| Use with Hose Size | Part No. | Price ea. | Use with Hose Size | Part No. | Price ea. |
|--------------------|----------|-----------|--------------------|----------|-----------|
| 666-4 | 05-01320 | . | 666-8 | 05-01323 | . |
| 666-5 | 05-01321 | . | 666-10 | 05-01324 | . |
| 666-6 | 05-01322 | . | 666-12 | 05-01325 | . |

STRAIGHT CRIMP FLARELESS FITTINGS FOR #666 HOSE



| Part Number | Aeroquip Hose Size | Price ea. | Part Number | Aeroquip Hose Size | Price ea. |
|-------------|--------------------|-----------|-------------|--------------------|-----------|
| AE21502-E | 666-4 | . | AE21502-H | 666-8 | . |
| AE21502-F | 666-5 | . | AE21502-J | 666-10 | . |
| AE21502-G | 666-6 | . | AE21502-K | 666-12 | . |

Crimping tool and sleeve required for assembly.

AP

HOSE - HOSE FITTINGS - ASSEMBLIES

AEROQUIP 816 & 8891 HOSE FITTINGS USED WITH AEROQUIP 601 HOSE



816-4

Aeroquip 816 straight hose fittings and 8891 90° hose fittings consist of a pre-assembled nut/nipple assembly and an internally threaded hose socket. The size 4 fitting has a cadmium plated steel nut and nipple. Sizes 6, 8 and 10 nuts and nipples, and all sizes of sockets, are anodized aluminum. Note: Aeroquip 816 fittings are not the same as AN816 fittings. Include the word "Aeroquip" with Part number when ordering.

| Aeroquip 816 | | | Aeroquip 8891 | | |
|--------------|------------|-------|-------------------|----------|------------|
| Part No. | Price Each | Size* | Nut Thread Size** | Part No. | Price Each |
| 816-4 | | 1/4 | 7/16-20 | 8891-4 | |
| 816-6D | | 3/8 | 9/16-18 | 8891-6D | |
| 816-8D | | 1/2 | 3/4-16 | 8891-8D | |
| 816-10D | | 5/8 | 7/8-14 | 8891-10D | |

*Corresponds to tube O.D. of AN-type flared tube fittings. Not an Aeroquip dimension. ** Same thread size as AN818 nut of same dash no. Less 10%, 6 - 11 Aeroquip fittings; Less 15%, 12 - 24 Aeroquip fittings; Less 20%, 25 or more Aeroquip Fittings May be assorted sizes and types.

AEROQUIP FIRE SLEEVE



Aeroquip Firesleeve was specially developed to meet the fire resistance requirements of FAATSO - C53a OR TSO - C75. May be used for all fuel, oil, hydraulic, fire extinguisher & propeller feathering lines.

"Fire-proof" hose lines as defined by FAA must withstand a direct flame for fifteen minutes under specified flow conditions without failure. "Fire-resistant" lines must withstand a 5-minute exposure under these conditions. "Fire-proof" hose lines are obtained when the proper size Aeroquip Firesleeve is selected from the chart below and properly assembled. 900591B Clamps - used to secure firesleeve material on each end over the basic hose assembly. See chart for correct size.

| | |
|------------|--------------|
| 900591B-1C | P/N 05-02653 |
| 900591B-2C | P/N 05-02652 |
| 900591B-3C | P/N 05-02654 |

| Part No. | Use With Hose # | | 900591B Clamp Dash # | Price Per Ft. | Part No. | Use With Hose # | | 900591B Clamp Dash # | Price Per Ft. |
|----------|-----------------|-----|----------------------|---------------|----------|-----------------|-----|----------------------|---------------|
| | 303 | 601 | | | | 303 | 601 | | |
| AE102-8 | -3 | -4 | -1C | | AE102-16 | -10 | -10 | -3C | |
| AE102-9 | -4 | -5 | -2C | | AE102-18 | -12 | - | -3C | |
| AE102-10 | -5 | - | -2C | | AE102-20 | - | -12 | -3C | |
| AE102-12 | -6 | -6 | -2C | | AE102-22 | -16 | -16 | -3C | |
| AE102-14 | -8 | -8 | -2C | | | | | | |

Quantity Discounts Same As Aeroquip Hose

Firesleeve Clamp Installation Tool - Band Width: 1/4 in - 3/8 in
P/N 05-00447

Economy Firesleeve Clamp Tool - for 3/8" or 1/4" roll band.
P/N 12-00684

AEROQUIP AE466

Integral silicone firesleeves on Teflon 666 hose assemblies.

This hose/sleeve combination meets the test requirements of TSO-C53A Type D and TSO-C75 Type IIIA and IIIB. The Silicone sleeve is applied directly onto the metal braid an fittings to form a smooth, tight bond. Hose flexibility is not impaired. Non-age sensitive for extra-long service life. Eliminates the use of band clamps. Temperature range -65°F to +450°F. Specify hose size and length of assembly in inches and eighths of an inch from sealing surface to sealing surface. Available in blue or brown.

Call 877-4-SPRUCE (444823), or email
info@aircraftspruce.com for pricing and availability.

| Size | Aeroquip P/N | Size | Aeroquip P/N |
|------|----------------|------|----------------|
| -3 | AE3663161BXXXX | -8 | AE3663161HXXXX |
| -4 | AE3663161EXXXX | -10 | AE3663161JXXXX |
| -5 | AE3663161FXXXX | -12 | AE3663161KXXXX |
| -6 | AE3663161GXXXX | | |

SILICONE HOSE



Temp. range -65°F to +350°F. Color; Blue

| ID | OD | Wt / Ft. (Lb.) | Part No. | Price / Ft |
|------|-------|----------------|----------|------------|
| 1/4" | 0.45" | .064 | 05-00659 | |
| 3/8" | 0.67" | .144 | 05-00660 | |
| 5/8" | 0.95" | .220 | 05-00661 | |
| 3/4" | 1.07" | .276 | 05-00671 | |

BLACK SILICONE FIRE JACKET



This black silicone fire jacket has a temperature range of -65°F to +2000°F AND IS 5/8" I.D. Fits all E185-E225 & IO-470 breather tubes.

P/N 05-00672

AEROQUIP 601/AE701 HOSE



An inner tube of seamless, specially formulated synthetic rubber reinforced with a stainless steel partial inner braid and full-coverage stainless steel outer braid. Operating temperature -40° to 300°F. Aeroquip 601 hose is widely used for aircraft fuel and oil lines where flexibility and light weight are prime considerations. Because of its lighter weight and lower operating pressure than type 303 hose, it is not recommended for hydraulic lines. Use with Aeroquip 816 hose fittings. Aeroquip 601/AE701 is a direct replacement for old 601 hose. AE701 hose has no shelf life and is the upgraded version of 601 hose.

| Hose Part No.* | For Tubing Size | Hose I.D. | Max. Oper. Pressure** (PSI) | Wt. per Ft. (Lb.) | Price Per Ft. |
|----------------|-----------------|-----------|-----------------------------|-------------------|---------------|
| 601-4 | 1/4 | 7/32 | 1,000 | .120 | |
| 601-6 | 3/8 | 11/32 | 1,000 | .156 | |
| 601-8 | 1/2 | 7/16 | 1,000 | .168 | |
| 601-10 | 5/8 | 11/16 | 1,000 | .204 | |

* Corresponds to dash no. of Aeroquip 816 hose fittings. ** Safety factor of 4.



CUSTOM AEROQUIP 666 TEFLON HOSE ASSEMBLIES

Aeroquip Teflon hose is constructed with a conductive, seamless smooth bore inner tube covered with a stainless steel braid. Unattracted by fuel, oil, coolants and solvents used in aircraft systems. Service and shelf life of Aeroquip Teflon hose is unlimited for all practical purposes. They can be used in fuel, hydraulic and pneumatic applications at working pressures to 1500psi. Minimum burst pressures are 8000 psi sizes -3 to -8. Temperature range is -65° to +450° F. Hose assemblies prices are straight to straight. Call for 45° and 90° elbow pricing. Measurements are taken as follows:

| Fittings | Measurement |
|----------------------|--|
| Straight to Straight | End to end (overall length) |
| Straight to 45° | End of straight fitting to top of b-nut on 45° fitting |
| Straight to 90° | End of straight fitting to center of 90° fitting |
| 45° to 45° | Top of b-nut on 45° fitting to Top of b-nut on 45° fitting |
| 45° to 90° | Top of b-nut on 45° fitting to center of 90° fitting |
| 90° to 90° | Center of 90° fitting to Center of 90° fitting |

Call 877-4-SPRUCE (444823), or email at info@aircraftspruce.com for pricing and availability.

| Size | Aeroquip P/N | Size | Aeroquip P/N |
|------|----------------|------|----------------|
| -3 | AE3660000BXXXX | -8 | AE3660000HXXXX |
| -4 | AE3660000EXXXX | -10 | AE3660000JXXXX |
| -5 | AE3660000FXXXX | -12 | AE3660000KXXXX |
| -6 | AE3660000GXXXX | | |



AEROQUIP MS28741 CUSTOM RUBBER HOSE ASSEMBLIES

All hose assemblies are special-order and non-returnable. Custom-fabricated MS28741 hose assemblies fabricated (Aeroquip #303 or 302A) from MIL-H-8794 hose and MS24587 fittings (Aeroquip #491 or equivalent). Inner Tube: seamless synthetic rubber compound Reinforcement: synthetic impregnated single-wire braid over single cotton braid Outer Cover: synthetic impregnated oil-resistant cotton braid Operating Temperatures: • 303 Hose: -65° to +250°F • 302A Hose: -40° to +250°F. See measuring instructions above.

Call 877-4-SPRUCE (444823), or email
at info@aircraftspruce.com for pricing and availability.



SPEEDLOX LOCKING FITTINGS

Features: * No Wrenches Required * NHRA Approved * Retrofittable with existing hoses & hose ends * Eliminates the need for a wrench to seal the connection, Just hand tight * Eliminates cross-threading with the built in B-Nut guide * Prevents cavitation * Stays as a unit, no assembly required * Protects threads from F.O.D. (Foreign Object Damage) * Eliminates the need for safety wire * Reduces R & R time * Increased safety factor * Eliminates unscheduled maintenance * Eliminates hose twisting or binding * Greatly reduces contamination at the connection * Discourages over tightening the connection due to sealing system * Allows for torsional flex without losing the seal at the connection * Standard B-Nut is accessible to be torqued before locking, If required * Can be made tamper proof by filling the lock ring hole with a suitable material such as silicone or epoxy * Eliminates unnecessary contamination to the environment (leaks) * The hose end may be "Timed" in order to position the release tang away from any vulnerable areas * In the event an object should strike the sleeve in the unlocked position, the sleeve will absorb the impact of F.O.D. by snapping out of the unlock detent

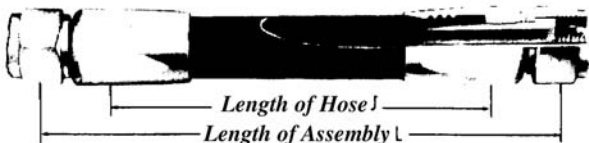
| Size | Thread | Part No. | Price | Size | Thread | Part No. | Price |
|--------|----------|----------|-------|--------|--------|----------|-------|
| SSA-3 | Straight | 04-01966 | | SPA-3 | Pipe | 04-01974 | |
| SSA-4 | Straight | 04-01967 | | SPA-4 | Pipe | 04-01975 | |
| SSA-6 | Straight | 04-01968 | | SPA-6 | Pipe | 04-01976 | |
| SSA-8 | Straight | 04-01969 | | SPA-8 | Pipe | 04-01977 | |
| SSA-10 | Straight | 04-01970 | | SPA-10 | Pipe | 04-01978 | |
| SSA-12 | Straight | 04-01971 | | SPA-12 | Pipe | 04-01979 | |
| SSA-16 | Straight | 04-01972 | | SPA-16 | Pipe | 04-01980 | |
| SSA-20 | Straight | 04-01973 | | | | | |

HOSE ASSEMBLY

ASSEMBLY INSTRUCTIONS

USING 303 HOSE AND 491 FITTINGS

To make hose assembly of length "L", cut hose to length "J". Obtain "J" length by subtracting proper fitting allowances.



| Hose & Fitting Dash No. | -3 | -4 | -5 | -6 | -8 | -10 | -12 |
|--------------------------|------|------|------|------|------|------|------|
| Fitting Allowance* (In.) | 1.30 | 1.30 | 1.48 | 1.54 | 1.88 | 2.00 | 2.00 |

*Allowance for 2 fittings.

step 1 Cut hose squarely to length. Use hose cut-off machine or fine tooth hacksaw. Do not remove cover.

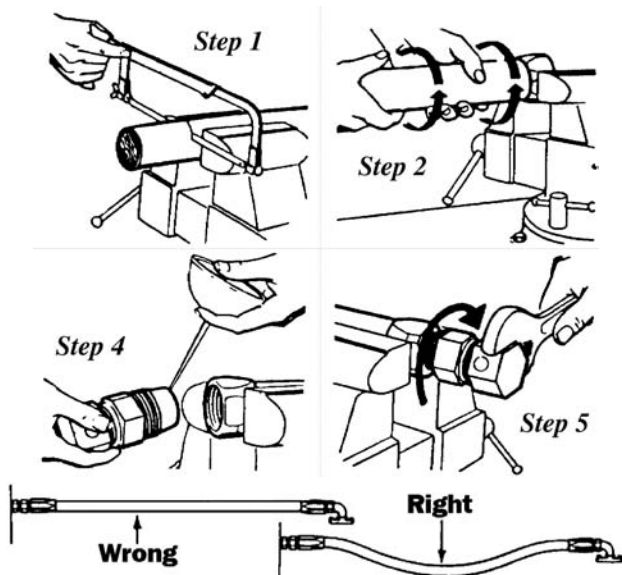
step 2 Place socket in vise. Do not overtighten vise on thin-walled sockets of lightweight fittings. Screw hose into socket until it bottoms. Back-off 1/4 turn.

step 3 Tighten nipple and nut on assembly mandrel.

step 4 Lubricate inside of hose and nipple threads liberally. Use lubricating oil, petrolatum or light grease.

step 5 Screw nipple into socket and hose using wrench on ass'y tool hex. Nut must swivel freely when assembly tool is removed. Maximum allowable gap is 1/16 inch. L.P.S.-1 is an excellent lubricant for use in hose assembly.

CLEAN, INSPECT, PROOF TEST



PLANNING HOSE LINE INSTALLATIONS

1. Provide slack or bend in the hose line to provide for changes in length that will occur when pressure is applied.



2. Observe linear stripe. Hose must not be twisted. High pressures applied to a twisted hose may cause failure or loosen the nut.



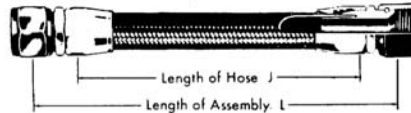
*10781-4 Clamp to be used to secure the Firesleeve material on each end over the basic hose assembly. Specify size. . . .



End Dip for Firesleeve - P/N 5027

USING 601 HOSE AND 816 FITTINGS

To make hose assembly of length "L", cut hose to length "J". Obtain "J" length by subtracting proper fitting allowances.



step 1 - Cut hose squarely to length. Use hose cut-off machine or fine tooth hacksaw. To minimize wire braid flare-out, wrap hose with masking tape and saw through tape. Remove tape before step 2.

step 2 - Insert hose in socket with a twisting, pushing motion until hose is in line with back of socket threads.

step 3 - Important-mark hose position around hose at rear of socket. Use a grease pencil, painted line or tape.

step 4 - Lubricate inside of hose & nipple threads liberally. Use SAE 30 lubricating oil. Avoid getting oil in the cutting spur of the nipple.

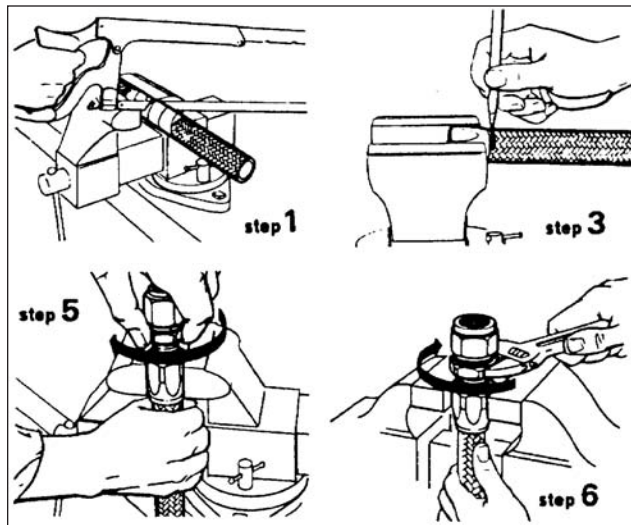
step 5 - Carefully insert nipple and engage nipple and socket threads while holding hose in position with other hand. Make sure that hose does not push out of socket by observing mark made in step 3.

step 6 - Complete assembly using wrench while continuing to hold in position. Maximum allowable gap is .041" in sizes 3, 4, & 5, and .031" in size 6 & up.

step 7 - IMPORTANT—check for hose push-out by observing hose position mark. None should be evident.

CLEAN, INSPECT, PROOF TEST

Note: Hose push out after proof test should not exceed 1/32" on sizes 12 and up. None is allowable on smaller sizes.



STRATOFLEX 2650 FIRESLEEVE



| Part No. | Use With Hose No. | | | | *10781-4 Clamp | Price Per Ft. |
|----------|-------------------|-----|-------|-----|----------------|---------------|
| | 124 | 193 | 111 | 156 | | |
| 2650-6 | -4 | - | - | - | - | - |
| 2650-8 | -6 | -3 | - | -4 | 22CR | - |
| 2650-9 | - | -4 | - | -5 | 22CR | - |
| 2650-10 | -8 | - | -4 | -6 | 22CR | - |
| 2650-11 | - | -6 | - | - | - | - |
| 2650-12 | -10 | - | -5,-6 | -8 | 22CR | - |
| 2650-13 | - | -8 | -8 | - | - | - |
| 2650-14 | -12 | - | - | - | 22CR | - |
| 2650-16 | - | -10 | -10 | -10 | 32CR | - |
| 2650-18 | - | - | - | -12 | 32CR | - |
| 2650-20 | -16 | - | -12 | - | 32CR | - |
| 2650-22 | - | - | -16 | -16 | 32CR | - |

STRATOFLEX HOSE & FITTINGS



STRATOFLEX 111 HOSE

| Part No | Tube O.D. | Hose ID. | Max Press | Wt Per lb./In. | Price Per Ft. |
|---------|-----------|----------|-----------|----------------|---------------|
| 111-4 | .250 | .188 | 3000 | .0120 | . |
| 111-5 | .312 | .250 | 3000 | .0130 | . |
| 111-6 | .375 | .312 | 2000 | .0190 | . |
| 111-8 | .500 | .406 | 2000 | .0220 | . |
| 111-10 | .625 | .500 | 1750 | .0310 | . |
| 111-12 | .750 | .625 | 1500 | .0380 | . |
| 111-16 | 1.00 | .875 | 800 | .0368 | . |

STRATOFLEX 300 STRAIGHT FLARED FITTINGS FOR 111 HOSE



| Part No. | Tube O.D. | Thread | Price Ea. |
|----------|-----------|-----------|-----------|
| 300-3S | .188 | 3/8-24 | . |
| 300-4S | .200 | 7/16-20 | . |
| 300-5S | .312 | 1/2-20 | . |
| 300-6S | .375 | 9/16-18 | . |
| 300-8D | .500 | 3/4-16 | . |
| 300-10D | .625 | 7/8-14 | . |
| 300-12D | .750 | 1-1/16-12 | . |
| 300-16D | 1.00 | 1-5/16-12 | . |

STRATOFLEX 156 MEDIUM PRESSURE HOSE



| Part No | Tube O.D. | Hose ID. | Max Press | Mini Blend | Price Per Ft. |
|---------|-----------|----------|-----------|------------|---------------|
| 156-3 | .188 | .156 | 1500 | 1.75 | . |
| 156-4 | .250 | .219 | 1500 | 2.00 | . |
| 156-5 | .312 | .281 | 1500 | 2.25 | . |
| 156-6 | .375 | .344 | 1500 | 2.50 | . |
| 156-8 | .500 | .438 | 1250 | 3.50 | . |
| 156-10 | .625 | .562 | 1250 | 4.00 | . |
| 156-12 | .750 | .688 | 1250 | 4.50 | . |
| 156-16 | 1.000 | .875 | 1000 | 5.50 | . |

STRATOFLEX 678 45° ELBOW FLARED FITTINGS FOR 156 HOSE



| Part No. | Tube O.D. | Thread | Price Ea. |
|----------|-----------|-----------|-----------|
| 678-3S | .188 | 3/8-24 | . |
| 678-4S | .250 | 7/16-20 | . |
| 678-6D | .375 | 9/16-18 | . |
| 678-8D | .500 | 3/4-16 | . |
| 678-10D | .625 | 7/8-14 | . |
| 678-12D | .750 | 1-1/16-12 | . |
| 678-16D | 1.00 | 1-5/16-12 | . |



STRATOFLEX 193 HOSE

| Part No | Tube O.D. | Hose ID. | Max Press | Weight per In. (l.b.) | Price Per Ft. |
|---------|-----------|----------|-----------|-----------------------|---------------|
| 193-2 | .35 | .125 | 300 | .0038 | . |
| 193-3 | .41 | .188 | 250 | .0050 | . |
| 193-4 | .48 | .250 | 200 | .0058 | . |
| 193-6 | .60 | .375 | 150 | .0079 | . |
| 193-8 | .75 | .500 | 150 | .0015 | . |
| 193-10 | .87 | .625 | 150 | .0138 | . |

STRATOFLEX 646/640 45° ELBOW FLARED FITTINGS FOR 111 HOSE



| Part No. | Tube O.D. | Thread | Price Ea. |
|----------|-----------|-----------|-----------|
| 646-4S | .250 | 7/16-20 | . |
| 646-6S | .375 | 9/16-18 | . |
| 646-8D | .500 | 3/4-16 | . |
| 646-10D | .625 | 7/8-14 | . |
| 640-12D | .750 | 1-1/16-12 | . |
| 640-16D | 1.00 | 1-5/16-12 | . |

STRATOFLEX 649/643 90° ELBOW FLARED FITTINGS FOR 111 HOSE



| Part No. | Tube O.D. | Thread | Price Ea. |
|----------|-----------|-----------|-----------|
| 649-4S | .250 | 7/16-20 | . |
| 649-6S | .375 | 9/16-18 | . |
| 649-8D | .500 | 3/4-16 | . |
| 649-10D | .625 | 7/8-14 | . |
| 649-12D | .750 | 1-1/16-12 | . |

STRATOFLEX 676 STRAIGHT FLARED FITTINGS FOR 156 HOSE



| Part No. | Tube O.D. | Thread | Price Ea. |
|----------|-----------|-----------|-----------|
| 676-3S | .188 | 3/8-24 | . |
| 676-4S | .250 | 7/16-20 | . |
| 676-5S | .312 | 1/2-20 | . |
| 676-6D | .375 | 9/16-18 | . |
| 676-8D | .500 | 3/4-16 | . |
| 676-10D | .625 | 7/8-14 | . |
| 676-12D | .750 | 1-1/16-12 | . |
| 676-16D | 1.000 | 1-5/16-12 | . |

STRATOFLEX 680 90° ELBOW FLARED FITTINGS FOR 156 HOSE



| Part No. | Tube O.D. | Thread | Price Ea. |
|----------|-----------|-----------|-----------|
| 680-3S | .188 | 3/8-24 | . |
| 680-4S | .250 | 7/16-20 | . |
| 680-5S | .312 | 1/2-20 | . |
| 680-6D | .375 | 9/16-18 | . |
| 680-8D | .500 | 3/4-16 | . |
| 680-10D | .625 | 7/8-14 | . |
| 680-12D | .750 | 1-1/16-12 | . |
| 680-16D | 1.000 | 1-5/16-12 | . |

STRATOFLEX 311 STRAIGHT FLARED FITTING FOR 193 HOSE



| Part No. | Tube O.D. | Thread | Price Ea. |
|----------|-----------|---------|-----------|
| 311-2D | .125 | 5/16-24 | . |
| 311-3D | .188 | 3/8-24 | . |
| 311-4D | .250 | 7/16-20 | . |
| 311-6D | .375 | 9/16-18 | . |
| 311-8D | .500 | 3/4-16 | . |
| 311-10D | .625 | 7/8-14 | . |

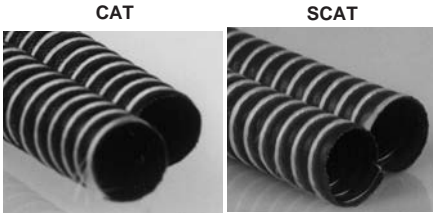
STRATOFLEX FLARED HOSE ASSEMBLIES

Call for quote on Stratoflex 111, 156, 193 and 124 PTFE flared hose assemblies. Our hose assemblies are competitively priced and available for immediate shipment.



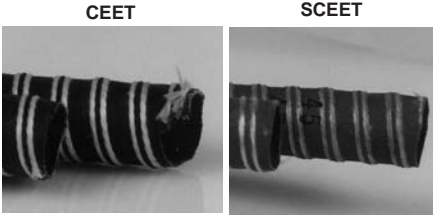
DUCTING

AIRCRAFT FLEXIBLE DUCTING



"CAT" - "CAT" type flexible hot or cold air ducting is extremely lightweight and highly flexible. Short lengths can be joined together to form a continuous length. Made of a single ply black neoprene-impregnated fiberglass with a spiral copper coated steel wire inside and wrapped with fiberglass cord on the outside. Suitable for conveying fumes and air at temperatures from -65° to over 350°F. Not recommended for handling liquids or highly abrasive materials, or for negative pressure applications.

"SCAT" - "SCAT" type ducting has the same type construction as "CAT" except with red silicone rubber impregnation. For use in conducting extremely cold or hot air with temperatures from -65° to over 550°F. Not recommended for negative pressure applications.



"CEET" - "CEET" type ducting has two plies of neoprene-impregnated fiberglass, similar to CAT except wire between plies. For use in hot or cold air applications and for conveying fumes at temperatures ranging from -65° to over 350°F. Not recommended for handling liquids or highly abrasive materials, or for negative pressure applications.

"SCEET" - "SCEET" type ducting has two plies of silicone rubber-impregnated fiberglass, similar to SCAT except wire between plies. Ideal for use in conducting extremely cold or hot air at temperatures from -80° to over 550°F, and for conveying fumes. Not recommended for handling liquids or highly abrasive materials, or for negative pressure applications.

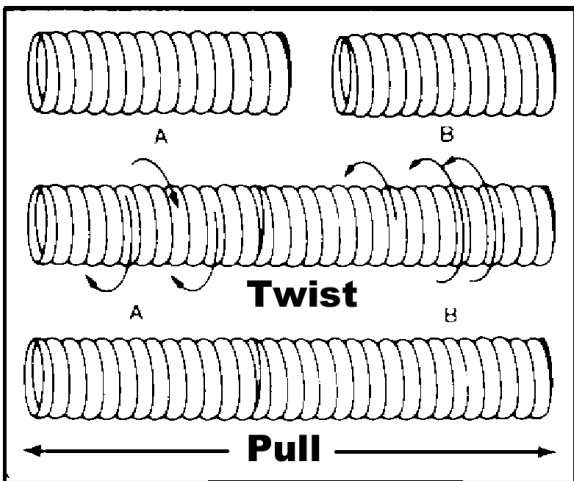
AP

| Dash No. | Inside Diameter | CAT | | SCAT | | CEET | | SCEET | |
|----------|-----------------|-------------|----------------|-------------|----------------|-------------|----------------|-------------|----------------|
| | | Part Number | Price Per Foot | Part Number | Price Per Foot | Part Number | Price Per Foot | Part Number | Price Per Foot |
| -2A | 5/8" | 05-29801 | . | 05-29901 | . | 05-30501 | . | 05-30601 | . |
| -3 | 3/4" | 05-29802 | . | 05-29902 | . | 05-30502 | . | 05-30602 | . |
| -3A | 7/8" | 05-29803 | . | 05-29903 | . | 05-30503 | . | 05-30603 | . |
| -4 | 1" | 05-29804 | . | 05-29904 | . | 05-30504 | . | 05-30604 | . |
| -5 | 1-1/4" | 05-29805 | . | 05-29905 | . | 05-30505 | . | 05-30605 | . |
| -6 | 1-1/2" | 05-29806 | . | 05-29906 | . | 05-30506 | . | 05-30606 | . |
| -7 | 1-3/4" | 05-29807 | . | 05-29907 | . | 05-30507 | . | 05-30607 | . |
| -8 | 2" | 05-29808 | . | 05-29908 | . | 05-30508 | . | 05-30608 | . |
| -9 | 2-1/4" | 05-29809 | . | 05-29909 | . | 05-30509 | . | 05-30609 | . |
| -10 | 2-1/2" | 05-29810 | . | 05-29910 | . | 05-30510 | . | 05-30610 | . |
| -11 | 2-3/4" | 05-29811 | . | 05-29911 | . | 05-30511 | . | 05-30611 | . |
| -12 | 3" | 05-29812 | . | 05-29912 | . | 05-30512 | . | 05-30612 | . |
| -13 | 3-1/4" | 05-29813 | . | 05-29913 | . | 05-30513 | . | 05-30613 | . |
| -14 | 3-1/2" | 05-29814 | . | 05-29914 | . | 05-30514 | . | 05-30614 | . |
| -15 | 3-3/4" | 05-29815 | . | 05-29915 | . | 05-30515 | . | 05-30615 | . |
| -16 | 4" | 05-29816 | . | 05-29916 | . | 05-30516 | . | 05-30616 | . |
| -18 | 4-1/2" | 05-29818 | . | 05-29918 | . | 05-30518 | . | 05-30618 | . |
| 20 | 5" | 05-29820 | . | 05-29920 | . | 05-30520 | . | 05-30620 | . |
| 24 | 6" | 05-29824 | . | 05-29924 | . | 05-30524 | . | 05-30624 | . |

Diameters not listed are available as a special order in full lengths only. Order CAT 2-3/4" diameter for Whisperflow air vents. Full factory lengths are 10 ft. on CAT and CEET and 12 ft. on SCAT & SCEET.

SCREWING DUCTING TOGETHER

Short lengths of ducting can be spliced to eliminate waste. For permanent splices, an adhesive should be applied to the ends before joining. To relieve wire tension when cut, bend end of wire in slightly.



ALUMINUM FLANGES FOR DUCTING

Simplify installation of cabin, carb. heat, cabin vent lines. Aluminum flange may be welded or riveted in place. Slip ducting over outlet and secure with clamp.



| Flange Size | Part No. | Price |
|-------------|----------|-------|
| 1" | 10350-4 | . |
| 1-1/4" | 10350-5 | . |
| 1-1/2" | 10350-6 | . |
| 1-3/4" | 10350-7 | . |
| 2 | 10350-8 | . |
| 2-1/4" | 10350-9 | . |
| 2-1/2" | 10350-10 | . |
| 2-3/4" | 10350-11 | . |
| 3" | 10350-12 | . |

Discount: 10% On 20; 15% On 50. 20% On 100 (Assorted)

ANTIQUE PIPER WING ROOT FRAME COVERS



This cover is constructed of a light-weight stiffener panel, 1/2" foam padding and headliner fabric. A flap extends into the back side of the wing root frame and glues in place for a professional finish.

P/N 09-17345.....

SOUNDPROOFING – INSULATION

E-A-R-COMPOSITE DAMPING FOAM



ADC-224 is a mid-temperature skin damping composite of 0.25" thick damping foam fixed with 0.005" thick aluminum foil and backed with pressure sensitive adhesive. Used in aircraft for weight efficient damping and to reduce radiated noise. Meets FAR 25.853 (A) for fire resistance. Furnished in 27" x 48" sheets.

P/N 09-00181 / sheet

Less 10% discount on 10 or more sheets

3M™ SOUND & VIBRATION DAMPING PANELS



Designed for damping resonant vibrations of thin sheet metal, these panels are pressure sensitive, specially compounded polyurethane damping foam with an aluminum foil backing. The adhesive on the foam is protected by a peel-off paper covering. It is an excellent insulator for conducted heat and is an excellent heat reflector. Fire-resistant and self-extinguishing per FAA test procedure. Excellent moisture resistance. Resistant to most solvents. Easily applied with only hand pressure for a permanent bond even on rough, irregular surfaces. Used extensively in commercial aircraft and highly recommended for metal home builds. Apply to firewall, fuselage — anywhere a vibration problem exists. Wt. 4 oz./sq. ft., 1/4" thick.

3M Sound Damp Panel 6" x 48"..... P/N 09-30206 ea.
3M Sound Damp Panel 12" x 48"..... P/N 09-30212 ea.
3M Sound Damp Panel 18" x 48"..... P/N 09-30218 ea.

**Less 15% on 12 or more pieces
FOR OTHER 3M™ PRODUCTS SEE PAGES 345-352**

ALUMINUM FOIL TAPE



A 2 Mil. (50 micron) high strength aluminum foil coated with an aggressive, high temperature acrylic adhesive system. The foil conforms well to both fibrous and sheet metal ducts, providing an excellent vapor seal. The malleable foil also conforms well around corners and to irregular surfaces. Coated with a special cold weather acrylic pressure sensitive adhesive system which combines superior quick stick at normal temperature with superior low temperature performance below freezing - this is the ultimate in cold weather tapes. Recommended for use at normal and elevated temperatures also. **Applications:** Primarily used for vapor sealing fiberglass ductboard and sheet metal ducts; can also be used on FSK systems. tape described above. 2" x 25 Yd. Roll.

| Description | Part No. | Price | Description | Part No. | Price |
|-------------|----------|-------|-------------|----------|-------|
| 1"X 25YD | 09-01273 | . | 4"X25 YD | 09-01275 | . |
| 2"X 25 YD | 09-01274 | . | 6"X50 YDS | 09-01276 | . |

TEFLON ANTI-CHAFE TAPE



ISD Chafe Tape is a durable Teflon material with a pressure sensitive adhesive which resists solvents, and oils. Designed specifically to prevent aluminum chafing between airframes and engine cowls. It helps prevent black streaking on aircraft exterior due to cowl chafing. Not FAA/PMA approved. Operable temperature range: -100°F to +500°F. Width: 1". Roll length: 6 yds. Tkns: .012" P/N 09-31805 /roll

TEFLON COATED FIBERGLASS ANTI-CHAFE TAPE



These 1' wide rolls of Teflon on fiberglass anti-chafe tape are excellent for use on engine cowlings to keep cowl components from chafing. The tape is available in 5 mil thick and 10 mil thick and comes with a silicone adhesive on the tape. Just peel back liner and install. Rolls are 1" wide x 36 yds long.

5 Mil Anti-Chafe tape P/N 05-01024 /roll
10 Mil Anti-Chafe tape P/N 05-01025 /roll

UNI-WRAP SILICONE TAPE RUBBER SELF-BONDING TAPE



UniWrap silicone rubber sealing tape bonds to itself permanently to protect, repair, join, or insulate virtually any type of part on which ordinary tape can be used. But the big difference between UniWrap and ordinary tape is that it fuses to itself permanently to form a homogenous mass and provides unprecedented protection and insulating characteristics. UniWrap uses no adhesives so it is non-tacky. It has a 12 month shelf life and after fusing is unaffected by moisture, cold, heat, ozone shock, or vibration. Meets MIL-I-46852 Type II as well as strict aerospace industry performance requirements. Available in red, black, gray, or white. Furnished in 10 yard rolls, UniWrap is 1" wide and 0.020" thick UniWrap (red) P/N 09-30450.....

COWLING CHAFE SEAL



Off-white, 100% non-asbestos woven tape. Unaffected by most chemicals and temperatures. 15" roll. 1" P/N 09-31800 r

NOXUDOL SOUNDPROOFING LIQUID



A paint-on soundproofing material that is applied to metal surfaces to reduce vibration and reverberant noise. Use to fill cracks and spaces where noise can enter. Buff color and can be painted. Paint engine mounts to increase fire resistance! Odorless and non-toxic when dry. Waterbased product. Non-Flammable. Shelf life: 1-year. Not FAA approved.

Quarts P/N 09-42740
Gallon..... P/N 09-00772

SUPER SOUNDPROOFING TAPE



This is a 1/8" thick by 2" wide self adhesive tape that can be placed on metal panels and wrapped around ducts to reduce vibration and reverberant noise transfer. Not FAA approved. 30 ft. rolls.

2" wide P/N 09-42745...../ea.
1" wide P/N 09-00381...../ea.

SUPER SOUNDPROOFING FLOOR MAT

This heavy duty, wear resistant vinyl mat with foam backing can be placed on aircraft floors to reduce noise & vibration. 54" width.

FAA approved. P/N 09-42750 /lin.ft.

Floormat 4" wide X 25' Roll..... P/N 09-00433..... /roll

Floormat without foam backing..... P/N 09-42751..... /lin.ft.

HOW TO SOUNDPROOF LIGHT AIRCRAFT



This excellent book explains how to properly use the soundproofing materials below to best reduce noise and vibration in your aircraft cabin. Illustration; 20 pages.

P/N 09-42755 FREE

SUPER SOUNDPROOFING SHEET WITHOUT ADHESIVE



This material is excellent for reducing noise levels in all types of certificated and homebuilt aircraft. It is a closed cell vinyl insulating material which will not absorb water or oil. Has fire retardant qualities and meets FAR 25.853a Appendix F, Pt1. It is smooth on one side for easy attachment to the inside cabin skins, sides, top and front firewall. Excellent for helicopters as well. Furnished in bulk 48" wide sheet, it is easily cut by scissors and attached with contact cement. Available in black only.

The Flammability Report (Burn Certs) are available on request.

| Thick-ness | Wt. / Lineal ft. | P/N 09- | Price Per. Lineal Ft. | Thick-ness | Wt. per Lineal ft. | P/N 09- | Price Per. Lineal Ft. |
|------------|------------------|---------|-----------------------|------------|--------------------|---------|-----------------------|
| 1/8" | 25 lbs. | 42719 | . | 3/4" | 1.4 lbs. | 42727 | . |
| 1/4" | 60 lbs. | 42720 | . | 1" | 2.0 lbs. | 42730 | . |
| 3/8" | 80 lbs. | 42723 | . | 1-1/2" | 3.0 lbs. | 72731 | . |
| 1/2" | 1.0 lbs. | 42725 | . | 2" | 4.0 lbs. | 42760 | . |

SUPER SOUND PROOF WITH ADHESIVE



Super Soundproofing Foam Mat for noise control: A closed cell vinyl-nitride noise control FOAM suitable for application to cars, boats, planes, home and office, anywhere a noise control mat is needed. Won't absorb moisture or odor, long lasting and durable. An excellent thermal insulator! (FAA Approved for aircraft, too!) Just apply with vinyl or contact cement to reduce and absorb sound.

1/8" w/adhesive P/N 09-01243
1/4" w/adhesive P/N 09-01244
3/8" w/adhesive P/N 09-00443
1/2" w/adhesive P/N 09-00444
3/4" w/adhesive P/N 09-01245
1" w/adhesive P/N 09-01246
2" w/adhesive P/N 09-01247

SOUND EX KITS



SoundEx™ is a premium aircraft soundproofing / insulation that incorporates excellent vibration damping and noise absorption properties. SoundEx™ is a superior product compared to other products on the market because of it's thermal qualities, adds less weight to aircraft (4.5 oz. per sq. ft. for 1-1/8" thickness and 3 oz. per sq. ft. for 7/8" thickness), and affordability. Materials are available in bulk or soundproofing template kits. Stop the yelling and make flying fatigue a thing of the past. Improve your quality of flight with SoundEx™

SEE WWW.AIRCRAFTSPRUC.COM FOR A LIST OF SOUND EX AIRCRAFT KITS AND BULK MATERIAL.

SEE THE ENGINE PARTS SECTION OF THE CATALOG FOR MORE INSULATION PRODUCTS!

INSULATION MATERIALS

THE INSULATOR AIRCRAFT INSULATOR MATERIAL



The Insulator is one of the finest sound proofing and thermal insulation materials available, and will last the life of the aircraft. The dual sided Insulator panels are ideal for installation on interior skin, floor, engine covers, doors, headliners, and bulkheads. The Insulator uses multi-layered fiber plys bonded to reinforced high performance foil to provide optimum barrier to acoustics, radiant heat, thermal heat, and moisture. Insulator is available in 4' x 6' panels or by the lineal foot (4' wide). Install Insulator with Sticky Stuff spray adhesive (shown below) and Insul-Tape. Not FAA approved.

INSULATOR PANELS

Insulator – one ply 4' x 6' sheet P/N 09-27400 **ea**
 Insulator – two ply 4' x 6' sheet P/N 09-27405 **ea**
 Insulator – two ply 2' x 6' sheet P/N 09-00282 **ea**
 Insulator – three ply 4' x 6' sheet P/N 09-27410 **ea**
 Insulator – three ply 2' x 6' sheet P/N 09-00283 **ea**

Discount: less 15% on orders for 20 sheets (assorted)

INSULATOR BY THE FOOT

Single side foil, single layer #6014; 4 ft. wide.
 P/N 09-06014 **/ft.**
 Double side foil, single layer #6016;
 2 ft wide P/N 09-00275 **/ft.**
 4 ft wide P/N 09-06016 **/ft.**
 Double side foil, double layer #3200
 P/N 09-00226 **/ft.**
 Discount: less 15% for 100 ft. (per P/N)

AP

STICKY STUFF ADHESIVE

Sticky Stuff is one of the best performing spray adhesives available. It is ideal for installing the Insulator and has many other uses. One spray can will install two 4' x 6' panels.

P/N 09-27415 **/ea.**



INSUL-TAPE AIRCRAFT INSULATOR MATERIAL

This pressure sensitive aluminized foil tape conforms to irregular surfaces, seals seams and joints and provides a vapor barrier. Also mends damaged Insulator foil. Cuts easily with household scissors.



30' roll P/N 09-27420 **/ea.**

BLANKET IN-A-BOX



Insulating your aircraft made easy! Blanket is ready to install as is or can be modified to fit special areas. Each box contains all the materials to insulate your aircraft including an Orcotek strip blanket, tape, cutting knife, instructions and built-in work surface with measuring grid. FAA8110-3 airworthiness certificate in each box. Furnished as follows: 1" blanket-in-a-box contains 1 roll (1"x20"x100') Orcotek strip blanket, 2 rolls of Orcotape OT-16A (2"), utility knife, dispenser

box-work platform
 2" blanket-in-a-box contains 1 roll (2"x20"x50') Orcotek strip blanket
 1 roll of Orcotape OT-16A (3"), utility knife, dispenser box/work platform
 P/N 09-45005 **/box**
 P/N 09-45010 **/box**

CONTEGO FIRE BARRIER LATEX PRIMER -THE FIRE STOPS HERE-



Contego protects most building materials from the ravages of fire. Contego intumescent fire barrier products are all non-toxic, non-dermatic, and safe for pets. When exposed to fire, Contego fire retardant coatings expand to form a tough char barrier fire cannot penetrate. Deprived of fuel, the fire quickly dies. Contego not only helps prevent fires, it minimizes deadly smoke production, one of the leading causes of fatalities in residential

and commercial fires. Intumescent fire barriers are nothing new, but Contego Passive Fire Barrier Latex represents a quantum leap forward in terms of quality, versatility, affordability and fire safety-all in one truly impressive fire proofing product.
 P/N 05-02615.....

AIRCRAFT CARPET TAPE



Orcotape OT-40 is a double-sided, pressure sensitive cloth tape used to adhere to floor coverings, such as carpet to aircraft flooring and meets the requirements of FAR 25.853. Furnished in a 25 yard roll.
 2" width P/N 09-00402.....

INSULATION REPAIR & FABRICATION TAPE



Orcotape OT-16A is a lightweight, pressure sensitive, reinforced, metallized polyvinyl fluoride tape which is designed to be used in the fabrication, repair & installation of thermal/acoustic blankets. It is the companion tape to be used with the Orcotek strip blanket to seal the edges. Furnished in 60yd rolls.

2" width P/N 09-45040 **/ea.**
 3" width P/N 09-45045 **/ea.**

ORCOTEK STRIP BLANKET



Aircraft insulation by the foot. This durable, state-of-the-art, light weight blanket meets the thermal and acoustic requirements of the major aircraft manufacturers and is now available for your airplane.

The blanket consists of fiberglass enclosed in moisture barrier. It can be used as is or cut in special shapes. Use Orcotape OT-16A 2" or 3" tape to seal the open edge(s) of the blanket. Strip blanket available in 1" thick x 20" wide or 2" thick x 20" wide.

1" thick x 20" wide P/N 09-45015 **/linear ft.**
 2" thick x 20" wide P/N 09-45020 **/linear ft.**

VALCO CINCINNATI MULTI-PURPOSE SEALANT



Valco Cincinnati multi-purpose sealant is a paste-like, one component material that cures to a tough, rubbery solid upon exposure to moisture in the air. Because it does not flow due to its own weight, this sealant can be applied overhead or on sidewall joints and surfaces without sagging, slumping or running off. It adheres to clean metal, glass, most types of wood, silicone resin, vulcanized silicone rubber, ceramic, natural and synthetic fiber, and painted and many plastic surfaces.

Valco multi-purpose sealant has good resistance to weathering vibration, moisture, ozone and extreme temperatures. It may be applied in subzero weather without loss of extrusion or physical property characteristics and is effective to -46°C (-50°F). Fully cured Valco multi-purpose sealant can be used for extended periods at temperatures up to 204°C (400°F), and for shorter periods as high as 218°C (425°F)

2 oz. tube P/N 09-00277
 7 oz. tube P/N 09-00278.....

VHT FLAMEPROOF COATINGS



Originally designed for NASA's reentry spacecraft, VHT FlameProof is a scientifically formulated compound designed to withstand temps. up to 1500°F (816°C) VHT It survives where other paints can't, shields & protects, maintains the finish, prevents rust & corrosion, and resists oils & solvents. For aircraft applications the typical use is on high temperature steel components such as exhaust & turbocharging systems. Excellent for use as a heat resistant & anti-corrosion coating on exhaust manifolds and turbine casings. Both Flat Aluminum and Flat Black are non-facing colors.

Flat Aluminum 16 oz. aerosol spray P/N 08-00713
 Flat Black 16 oz. aerosol spray P/N 08-00714
 Flat Black Quart Can P/N 08-00716

BAFFLING MATERIAL



FIBERFRAX

A new material made from washed ceramic fibers with binders added to form a lightweight, flexible asbestos-free insulation. Withstands temperatures to 2300° F. Excellent for aircraft firewalls. Available in 24" wide rolls in 1/16" and 1/8" thicknesses.

1/16" Thick..... P/N 05-02678 Lin ft.
1/8" Thick..... P/N 05-02679 Lin ft.
Discount Less 15% On 50Ft. Per Size



FIBERFRAX ADHESIVE

Recommended adhesive for installing Fiberfrax is QF-180 Hi-Temp White Glue. Coverage: 15 sq. ft. per pint & 120 sq. ft per gallon.

Fiberfrax Adhesive Pt..... P/N 05-00800.....
Fiberfrax Adhesive Gal..... P/N 05-00900.....



NEOPRENE BAR

Neoprene bar of proper Shore hardness for fabrication of shock absorber donuts. Used in Osprey II nose gear. Available in 2 sizes:

1/2" Th x 2" W..... P/N 05-02000..... /ft.
3/4" Th x 3" W..... P/N 05-02100..... /ft.



RUBBER SHEET PACKING

Will not deteriorate in petroleum products. Recommended for oil and solvent service. Meets specification MIL-R-6855. Wt. 6 oz. per sq. ft. 1 Size: 1/16" thick x 36" wide roll. Sold in 36" 1 width only. Price is per Lin. Ft.

P/N 05-01000.....

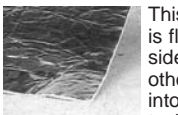
Discount: Less 15% On 20 Ft.

HEAT-PROOF TAPE

Heat-proof and fire resistant. Made of woven fiberglass. Non-metallic, commercial grade. Withstands up to 1000°F. 2" wide x 1/16" thick. Wt. 4-1/2 lbs. per 100 ft. roll. Sold in 36" 1 width only. Price is per Lin. Ft.

P/N 09-31500..... /ft.
Less 15% On 100 ft.

FIREWALL 2000 CERAMIC BLANKET



This blanket is .250" thick, weighs only 9.5 oz/sq. ft. and is flexible enough to cover compound curves. The heat side of the blanket is covered with stainless steel, the other side is aluminum. It is easy to rivet or can be glued into position. Sold by the running foot. Temp. range up to 1000°F. 24" wide P/N 05-00948.....

Less 15% on 25ft. roll

3M™ FIRE BARRIER 2000

A premium nonslump sealant bonds to most common construction material to form a flexible seal. Superior Adhesion. Remains elastomeric and is weather resistant. This product is great for through penetrations and may also be used for fire rated construction joints.

P/N 05-00949.....

FOR OTHER 3M™ PRODUCTS SEE PAGES 345-352

FIREWALL 2000 KIT

Contains 24"x48" sheet of Firewall 2000 and one tube of firewall caulk. Flammable. P/N 05-00950.....



FIREWALL BLANKET

Firewall blanket is black in color and comes 48" wide. Looks best when in 3' sections, anything larger has seams and stitching lines do not match well. Note: This material is used for cosmetic purposes on the inside portion of a firewall to cover up an unsightly firewall. It is not fireproof and is not an actual firewall material. Sold by the foot. P/N 09-00276..... /Linear ft.

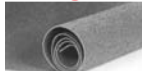


KOOLMAT HEAT BARRIER

Koolmat Insulation is a .070 thick fiberglass textile cured to a 1/8" silicone substrate. The latter providing a good wear resistant surface. Used by NASCAR, Winston Cup race teams as a firewall/floor safety and comfort heat barrier for drivers and has applications in the homebuilt aircraft field. It can be used on steel, aluminum, fiberglass, wood and plastic surfaces. It is good to temperatures up to 1000° F and reduces cockpit heat up to 75%. Contains no asbestos. Can be used to insulate cowl and firewall forward area. (Not used on exhaust) Color: gray on top side (silicone) and white woven cloth (fiberglass). Wt: .72 lbs. per sq. ft. Sold in 30" width by the lineal foot.

Gray..... P/N 09-24730..... /lin ft.
Beige..... P/N 09-01277..... /lin ft.

NEOPRENE COATED PYROGLASS CLOTH



This neoprene coated cloth is designed for applications where its superb heat and flame resistance provide an extra margin of protection for people and equipment.

Self-extinguishing, it is used as aircraft firewall barriers, protective sleeves and tadpole tape covers, flat seals, gaskets, mounts and door seals. It is ozone and weather resistant, and can be used against caustics, gasoline, oil, water and steam. It does not support combustion and will operate in continuous temperatures from -40°F to +200°F. Thickness .070". Sold in 40" Width only.

P/N 05-00600..... ft.

PRE-CUT PYROGLASS CLOTH BAFFLE STRIP

Cut from Pyroglass cloth above. 3" x 84"..... P/N 05-00700.....

COWL SAVER BAFFLE SEAL MATERIAL

Friction between baffle seal and cowl transfers engine motion and vibration



Cowl Saver™ Baffle Seal Material has 10 times Less Friction!

One side is silicone and the other is the revolutionary friction free surface unique to the patent pending Cowl Saver™. Cowl Saver™ dramatically reduces the friction between your cowl and baffle seals.

Low Friction Saves You Money!

Reduces transfer of damaging engine vibration to the engine cowl. Minimizes cowl chaffing and erosion from baffle seals. Extends baffle seal life. Reduces expensive cowl and cowl fastener repairs. Reduces fatigue and cracking in aluminum baffles and cowl skins.

The cowling even goes on easier!

Unbeatable Performance. Ideal balance of flexibility and stiffness to insure a proper seal. Fiberglass reinforced. Meets industry standard AMS3320G specification. McFarlane quality you can count on! Not FAA-PMA approved

| Part Number | Thickness | Size | Color | Spruce PN | Price |
|--------------|-----------|-----------|-------|-----------|-------|
| CS085X36X36G | .085" | 36" x 36" | Gray | 05-03403 | . |
| CS085X18X36G | .085" | 18" x 36" | Gray | 05-03404 | . |
| CS085X3X108G | .085" | 3" x 108" | Gray | 05-03405 | . |

ACCESSORIES

6036 BAFFLE SEAL RETAINER STRIP - A baffle seal retainer strip used as a retainer for riveting baffle seals to baffles. Designed to be cut to desired lengths during installation. PN 05-03399.....

RIVET KIT 2 - A baffle seal rivet kit containing soft Mil-Spec rivets that will not deform the baffles. Several sizes are included for various baffle thickness and hole sizes. PN 05-03401.....

BAFFLE-KIT-1 - A convenient kit that includes (1) CS085X3X108G Cowl Saver™ Baffle Seal Material, (1) RIVET-KIT-2 Soft Rivets, (5) 6036 Retainer Strip PN 05-03402.....

BAFFLE-KIT-2 - This new baffle kit with more material. This kit is best for larger aircraft or curved baffle seals that cannot be cut from three inch strips. The new kit includes (1) 18x36 inch piece of Cowl Saver™ material, (2) Baffle Seal Rivet Kits and (10) Baffle Seal Retaining Strips. PN 05-04108.....

INSPECTA-SHIELD FIRE RETARDANT PENETRANT

Inspecta-Shield is a durable, non-toxic, fire retardant chemical penetrant which when cured and dried, is odorless and colorless. Inspecta-Shield will retard flame in materials such as fabrics, poly foam, paper, and wood. The flame protection will generally last for the life of the product to which it has been applied. Inspecta-Shield is environmentally compatible and will protect surfaces up to 2,200°. In addition, when it is applied to fabrics, upholstery, carpets or wood, these surfaces will retain their color and resist sun rot up to 50% longer. Inspecta-Shield is a Class A rated flame retardant that meets F.A.R. 25.853 (a & b). 1qt. spray bottle will treat an area of 150 sq. ft. Can be applied with most garden and household sprayers. **Note:** Inspecta-Shield is corrosive to aluminum and other metals. If it comes in contact with metals be sure to wipe off metal and clean thoroughly

Qt. P/N 09-05760.....

Gal. P/N 09-00274.....

SILICONE SEAL WITH ADHESIVE

A general use silicone with an acrylic sticky backing. Can be used as any silicone seal where a

sticky backing is used, such as Battery Box Covers (top), and Baffle anti-chafe (prevent wear between metal baffles and cylinder head fins) Low temp use only: 0 to +300 Thickness is .050"

| Size | Part No. | Price |
|---------|----------|-------|
| 6"x6" | 05-04254 | . |
| 12"X36" | 05-04253 | . |
| 18"X36" | 05-04252 | . |
| 36"X36" | 05-04255 | . |

SEE THE ENGINE PARTS SECTION OF THE CATALOG FOR MORE INSULATION PRODUCTS!

AP

RUBBER CHANNEL - COWL SEAL



HIGH QUALITY RUBBER CHANNEL

Good-grade neoprene. Soft, flexible, oil-resisting.

- Style B:** 1/2" high - right, 3/8" high-left, 1/16" Groove 05-00596...../ft
Style C: 3/8" high, 1/8" groove, 1/4" across bottom .05-00597...../ft
Style D: 1/2" high - left, 3/16" - right 1/32" Groove... 05-00598...../ft
Style E: 1-1/8" high, 1/4" lip right side, 1/16" Groove.. 05-00599...../ft



SILICONE COWL SEALS

This silicone rubber is excellent for replacement of baffle seals as it exceeds asbestos type seals in durability and flexibility over its entire operating heat range of -80 F to +425 F. Meets Mil Spec ZZR765B. ISR3 meets Mil Spec AMS3320. Available in red, blue & black.

IRON OXIDE RED

- 3/32" thick x 3" wide x 9' long P/N 05-00775 /ft
 3/32" thick x 36" wide P/N 05-00781 /ft
 3/32" thick x 3" wide P/N 05-00781-3 /ft
 1/8" thick x 2" wide x 9' long P/N 05-00795 /ft
 1/8" thick x 3" wide x 9' long P/N 05-00755 /ft
 1/8" thick x 4" wide x 9' long P/N 05-00760 /ft
 1/8" thick x 36" wide P/N 05-00772 /ft
 1/8" thick x 2" wide P/N 05-00772-2 /ft
 1/8" thick x 3" wide P/N 05-00772-3 /ft
 1/8" thick x 4" wide P/N 05-00772-4 /ft
 1/8" thick x 3"W x 9' (w/fiberglass mat) ... P/N 05-00770 /ft
 1/8" thick x 36"W (w/fiberglass mat)..... P/N 05-00771 /ft
 1/8" thick x 3" wide (w/fiberglass mat)..... P/N 05-00771-3 /ft

LIPSTICK RED

- 3/32" thick x 36" wide P/N 05-00786 /ft
 3/32" thick x 3" wide P/N 05-00786-3 /ft

DARK BLUE

- 3/32" thick x 3" wide x 9' long P/N 05-03055 /ft
 3/32" thick x 3" wide P/N 05-01831-3 /ft
 3/32" thick x 36" wide P/N 05-01831 /ft

BLUE

- 3/32" thick x 3" wide x 9' long P/N 05-00790 /ft
 3/32" thick x 36" wide P/N 05-00806 /ft
 3/32" thick x 3" wide P/N 05-00806-3 /ft
 1/8" thick x 3"W x 9' (w/fiberglass mat) .. P/N 05-00792 /ft
 1/8" thick x 36"W (w/fiberglass mat)..... P/N 05-00791 /ft
 1/8" thick x 3" wide (w/fiberglass mat)..... P/N 05-00791-3 /ft

BLACK

- 3/32" thick x 3" wide x 9' long P/N 05-00810 /ft
 3/32" thick x 36" wide P/N 05-00811 /ft
 3/32" thick x 3" wide P/N 05-00811-3 /ft
 1/8" thick x 3"W x 9' (w/fiberglass mat) .. P/N 05-00826 /ft
 1/8" thick x 36"W (w/fiberglass mat)..... P/N 05-00825 /ft
 1/8" thick x 3" wide (w/fiberglass mat) ... P/N 05-00825-3 /ft

AIRCRAFT BAFFLE SEAL KITS

These pre-cut baffle seal kits are cut to original specifications. Please specify aircraft make, model, serial number, and color of seal. Kits are furnished with rivets, washers, drill bits, & silicone.



BAFFLE FASTENER KIT

This engine baffle fastener kit makes attaching baffle material much easier. The kit includes 12 soft aluminum fasteners.

- 1 Set.....P/N 05-56140
 Pkg. of 12 Sets.....P/N 05-01829

COWL SEAL HARDWARE & TOOLS

GB4-3A: Rivet - (Button head) 1/8" Dia. x 3/16" Grip - This rivet is used for mounting the baffle seal behind the metal baffle. This method requires a metal baffle strip or back-up washer to secure the seal to metal baffle
 Pkg. of 100 P/N 05-56100

GB-A4: Back-up Washers 1/8" Dia. x 1/4" Grip
 Pkg of 150 P/N 05-56130

GB-SF- 3/16: Screw Fastener (Post Type) Used for joining sides or overlapping of baffle material.
 P/N 05-56140

GB4-3AW: Rivet (white) 1/8" Dia. x 3/16"Grip (button head)
 Qty. 100..... P/N 05-56132

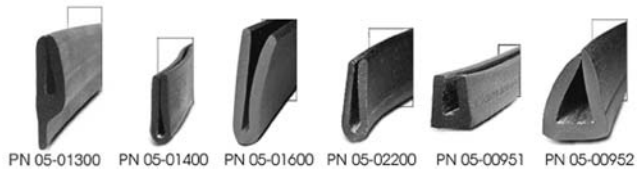
GB4-3AB: Rivet (black) 1/8" Dia. x 3/16"Grip (button head)
 Qty. 100..... P/N 05-56133

GBL4-3A: Rivet (Large Flange) 1/8" Dia. x 3/16"Grip
 Qty. 100..... P/N 05-56134

GBL4-2AW: Rivet (Large Flange white) 1/8" Dia. x 1/8"Grip
 Qty. 100..... P/N 05-56135

Silicone Revolving Punch Tool: Makes various size holes in baffle material.
 P/N 72.....

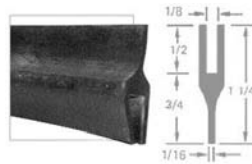
U CHANNEL BLACK 65 DURO EPDM U-CHANNEL.



| Groove | P/N | Height | Price/Ft. |
|--------|----------|--------|-----------|
| 1/16" | 05-01300 | 6/16" | .. |
| 1/16" | 05-01400 | 6/16" | .. |
| 1/16" | 05-01600 | 1/2" | .. |
| 1/16" | 05-02200 | 6/16" | .. |
| 1/8" | 05-00951 | 1/4" | .. |
| 1/4" | 05-00952 | 6/16" | .. |

Use CRL Glass and Acrylic Setting Rubber Channels if you have acrylic or glass panels you need to protect. Our Glass Setting Rubber Channels will provide you with the product you need. Available in multiple sizes for most applications.

OPEN SEAL



1/2" Legs 3/4" Curve 3/8" Radius
 Made in 12' Lengths -
 #4.....P/N 05-01500 Ft.

Neoprene sponge rubber 1/4-round door seal. Hollow core is more effective than solid core and makes a better seal. Manufactured in 25 Ft. lengths.
 #7..... P/N 05-01700 Ft

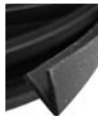


ANTI-CHAFE MOLDING



Anti-Chafe Molding for fuel tank straps. Neoprene channel accommodates metal straps 1" wide.
 #9.....P/N 05-01800 ft

"V" STRIP



"V" Strip Canopy Channel 20 Ft. required for Long-EZ.
 #10.....P/N 05-01900 ft



QUARTER ROUND SOLID DOOR SEAL - Closed cell black neoprene with smooth outer surface. 1/2" Legs, 3/4" Curve, 1/2" Radius. 25 ft. Roll
 P/N 05-00000



PIPER DOOR SEAL - Used on Piper, Mooney and others, small cell sponge rubber. Packaged in 25 foot rolls JM189139. 25 ft. Roll
 P/N 05-00010



BAGGAGE DOOR SEAL - Flexible small cell sponge rubber seal used on many aircraft baggage doors. Packaged in 25 foot rolls. 25 ft. Roll
 P/N 05-00020



PIPER WING ROOT SEAL - Black packaged in 12-foot lengths, adequate for one wing root. 12 ft. Roll
 P/N 05-00030



BEECH WING ROOT SEAL - Black, packaged in 12-foot lengths, adequate for one wing root. 12 ft. Roll
 P/N 05-00040



J-3, PA-18 DOOR GAP SEAL - 24" length Standard color, black. P/N 05-00953

Note: The above moldings are not FAA approved.



CESSNA CHAFE SEAL

This seal is riveted to the firewall on the Cessna 150, 152, 172, and 182. Meets MIL SPEC: AMS3320-.093 black. 1-1/2" wide x 84" long.
 P/N 05-04489.....


AP

CHAFE SEAL - DOOR SEALS


EPDM WEATHERSTRIP

Self-adhesive rubber strip, made in Sweden of 100% EPDM rubber. Resistant to aging, weather, ozone, ultraviolet sun rays and many chemicals and solvents. Retains resilience at low temperatures (to -45°F). Excellent for all types of weatherstripping and canopy installations. Furnished in three sizes


P-STRIP

 Furnished in full rolls as a double-width strip which splits in the middle to give two single-width P-strips as illustrated. 17 Ft. Roll 1/4" thick x 3/8" wide. **COLOR: WHITE**
P/N 05-01200 Ea.


D-STRIP WEATHERSEAL

 17' Roll 5/16" thick x 23/64" wide. (2) 8-1/2" strips.
P/N 05-00897


ALL STRIP WEATHERSEAL

 10' Roll 5/16" thick x 19/64" wide.
P/N 05-00898..... Ea.


BEECHCRAFT COWL DOOR CHAFE SEAL

 A Complete set of black silicone chafe seal for the upper cowl doors for Beech models 33, 35, 36. 3/8" wide X .020 thick. Kit includes silicone cement.
P/N 05-00665


BEECHCRAFT NOSE GEAR CHAFE SEAL

 A Complete set of black silicone nose gear door seals designed to keep the nose gear doors from chafing against the airframe. Fits models 33, 35, 36. Kit includes silicone cement. P/N 05-00666


BEECHCRAFT MAIN LANDING GEAR DOOR CHAFE SEAL

 A Complete set of black silicone chafe seals cut to the original design. These seals are cemented to the underside of the wing to reduce the chafing of the main landing gear doors when closed.
P/N 05-00667


BEECHCRAFT TAIL ROOT SEAL

 A set of two tail root seals for models 33-36.
P/N 05-00669


BEECHCRAFT RUDDERVATOR SEAL

 A set of two ruddervator seals for model 35.
P/N 05-00670


BEECHCRAFT UPPER WING SEAL

 A set of two upper wing seals for models 33, 35, 36, 55, 58. Includes lower wing seals (2)..... P/N 05-00668


SILICONE AIRBOX & HEATER SEAL

 This fiberglass reinforced silicone seal (1/16" thick) makes an excellent replacement for various airbox and heater box seals used in a variety of aircraft. Furnished as a 6" x 6" piece; Black.
P/N 05-00662


SILICONE GBP SEAL WITH 5/8" BULB

 This seal makes an excellent replacement for felt type seals or other neoprene P-seals found in various aircraft. Overall size is 1-3/8" with a 5/8" bulb. Similar to Cessna #S2729-1 P/N 05-00663 Jt.


BLACK SILICONE SEAL 7/8 INCH

 This seal makes an excellent replacement for felt type seals or other neoprene P-seals found in various aircraft. Overall size is 1-3/8" with a 7/8" bulb.
P/N 05-02144


BEECHCRAFT T34 CANOPY SEALS

 AMS 3303 silicone seal -65 to +350 for Beechcraft T34 Canopy Seals. Package includes: • 1 ea Canopy Seal 50.0 Long • 2 ea. Canopy Bumper Seal 21.0 Long • 2 ea Canopy Bumper Seal 48.0 Long
P/N 05-04247

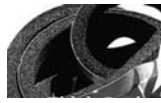
GB56 SILICONE ANTI-CHAFE SEAL

 The kit includes: 15 Foot Roll with Adhesive, Anti-Chafe Seal and Catalyst. Sold in 15ft. rolls.
P/N 05-00664

SILICONE CEMENT FOR CHAFE SEAL

 This silicone cement is the same cement that is included with some of the chafe seals on this page and is excellent for attachment of chafe seals. 2 oz. P/N 05-00996

AVTEK SQUEEZE-OUT DOOR SEAL KITS



Door Seal keeps water, cold, wind and noise out of your aircraft. The seal is designed for use on multiple aircraft make/model applications. The -02 is shipped with dual Air-Chambers. The installer can split the chambers using one near the hinges, where gaps are small, use two of three chambers in the rear where the gaps are larger. The -02 is very versatile, and works great on every aircraft, where as the -01 may not. Get the -01/-02 combination kit if you are unsure!


| Description | Use | Features | Part No. | Price |
|--|--|---|----------|-------|
| AvTek Squeeze-Out Door Seal -01 | Not Recommended for Most Aircraft. Use for Large Gaps in Cabin Doors. | Ear-Popping Tight | 05-01504 | . |
| AvTek Air Chamber Door Seal -02 | Recommended for All Aircraft. Fwd-Aft Cabin Doors & Bag Door. | Flex, E/Z Conform Will Not Push Door-Out | 05-02198 | . |
| AvTek Thin Seal (Window) -03 | Recommended for Cessna & Beech. Use for Windows, Paper-Thin Door-Gaps | Seals When No Other Seal Will | 05-02199 | . |
| AvTek Thin Seal (Door) -03 | Recommended for All Aircraft. Use for Very Small Gaps in Doors | Seals When No Other Seal Will | 05-02201 | . |
| AvTek Thicker Seal (Door) | Recommended for All Aircraft. Seal installed on the door. | Resist Mildew, Mold, & Tearing | 05-02202 | . |
| Air Squeeze Kit (Combo Kit of the Two Best Seals) Squeeze-Out-01 & Air Seal-02 | Recommended for All Aircraft Squeeze-Out: Top & Rear of the Door Air-Seal: Bottom and Forward Door Where the Hinges are Located. | Ear-Popping Tight, Flex, Ez Conform Will Not Push Door Out. | 05-02217 | . |

AVTEK GAP SEAL



The "Spring-Steel" reinforcement channel has "Gripper" teeth to hold firmly in place. And when your door is closed the seal is pinched between the airframe. You can not pull the seal out when the door is closed...however applying adhesive into the channel is recommended. Length: 9ft. P/N 05-02203

HOMEBUILDERS GAP SEAL KIT FOR EXPERIMENTAL AIRCRAFT

 Designed for experimental aircraft that have been identified as needing gap seals to improve control response and effectiveness. Features transparent, UV stable film with a long aging, acrylic adhesive. Remains flexible down to -40 deg. F. Easy to install with the use of simple hands tools. Kit includes 3M 8674 Film (PN 09-01643), 86A Adhesion Promoter to ensure maximum adhesion, Scotchbrite pad (PN 09-01753) and 3M Application Solution (PN 06-00604) P/N 05-03480

PIPER DOOR SEALS



This new seal was developed from a special rubber compound that meets military specifications and FAA requirements for aircraft seals. Has a memory, compresses and conforms to the sealing surface providing a perfect seal. Comes with pressure sensitive adhesive that makes it easy to apply and bonds well with any metal surface painted or bare. Installs in the channel on the fuselage opening, which allows for complete closing and sealing of the doors. Provides for an air- and water-tight seal. Also a kit designed for the baggage doors. FAA-PMA approved. Detailed instructions, an engineering drawing for installation of the new seal, including instructions for adjustment of the door as well as removal of the old seal from the door(s). **Please call or visit our website for additional photos and models.**

| Description | Part No. | Price |
|-------------------------------------|----------|-------|
| PA-28 Front Entry Door | 05-01240 | . |
| PA-28 Rear Baggage Door | 05-01241 | . |
| PA-32 Front Entry Door | 05-01242 | . |
| PA-32 Front Baggage Door | 05-01243 | . |
| PA-32 Rear Entry Door-No Cargo Door | 05-01244 | . |
| PA-32 Rear Entry Door w/Cargo Door | 05-01245 | . |
| PA-34 Front Entry Door | 05-01246 | . |
| PA-34 Front Baggage Door | 05-01247 | . |
| PA-34 Rear Entry Door w/Cargo Door | 05-01248 | . |
| Mooney Baggage Door | 05-02481 | . |
| Mooney Vent Window | 05-02483 | . |
| Front Mooney Baggage Door | 05-02482 | . |

• Mooney Door Seals
• Experimental

• Call for Quotation
• Provide Door Dimensions for Quotation

CESSNA DOOR SEALS



The new seal installed on the fuselage enables the door to fully close and be air and water tight. The new seals are FAA-PMA certified for all Cessna single engine aircraft including the 336 and 337 twins.

| | |
|-------------------------------------|-------------------|
| Cessna Entry Door Seal..... | P/N 05-01610..... |
| Cessna Window Seal..... | P/N 05-01611..... |
| Cessna Baggage Door Seal..... | P/N 05-01612..... |
| Cessna AFT ENT/CARGO Door Seal..... | P/N 05-01613..... |
| Cessna 207 Front Bag Door Seal..... | P/N 05-01614..... |

AP

INTERIORS

BAGGAGE COMPARTMENTS

Our Baggage Compartments are custom designed and manufactured to provide your aircraft with a sturdy and attractive area for storing baggage, books, charts, etc. If your aircraft is not listed, please send us the old baggage compartment to use as a pattern for a new one. Available in two colors: off-white or olive drab canvas.

Note: Complete the part number with color choice. Use -1 for off-white or -2 for olive drab. Baggage Compartments are special order & non-returnable



| Aircraft | Part No. | Price |
|------------------|-----------|-------|
| Aeronca 7AC | 09-17265- | . |
| Aeronca 11AC | 09-17270- | . |
| Aeronca 120/140* | 09-17275- | . |
| Cessna 150* | 09-17280- | . |
| Cessna 172* | 09-17285- | . |
| Cessna 310* | 09-17290- | . |
| Ercoupe | 09-17295- | . |
| Fairchild 24 | 09-17300- | . |

| Aircraft | Part No. | Price |
|-------------|-----------|-------|
| Luscombe 8A | 09-17302- | . |
| Piper J3 | 09-17305- | . |
| Piper J4 | 09-17307- | . |
| Piper J5 | 09-17310- | . |
| Piper PA12 | 09-17312- | . |
| Stearman | 09-17315- | . |
| Taylorcraft | 09-17317- | . |

THE ULTIMATE DOOR SEAL

The Ultimate Door Seal compensates for ill-fitting doors and in-flight door movement, thus keeping a positive seal to reduce the high pitched sound which causes fatigue, anxiety, and progressive hearing loss in pilots and passengers. The Deluxe Electric model features a panel mounted air control valve which is fully automatic in flight with electric power supply module. The Deluxe model features a handheld manometer bulb mounted permanently coiled hose and mounting bracket and panel mounted air flow control valve. The Economy model is the same system as the Deluxe but features a self-contained thumb screw air flow valve mounted on a manometer bulb with storage bracket mounted on the door. Requires no hoses or wires to be run. All systems contain everything needed for installation. All components covered under F.A.A. STC's & PMA.

AVAILABLE FOR AIRCRAFT MODELS

| | |
|--|---|
| <ul style="list-style-type: none"> •CESSNA, 310, 320 •CESSNA, 170, 175, 180, 182, 185, 206, 210 •CESSNA P210, CABIN & EMERGENCY EXIT •BEECH 33, 35, 36, 50, 55, 56, 95, 58 •MOONEY ALL MODELS •PIPER PA23 SERIES •PIPER PA24, 30, 39, 40 •PIPER PA28, 32, 34, 44 •BELLANCA •PIPER AEROSTAR 601P, 602P, 700P •CABIN DOOR •EMERGENCY EXIT •PIPER PA32, 34, •CABIN DOOR •REAR DOOR •CARGO DOORS | <ul style="list-style-type: none"> •PA32, 34 •REAR DOOR •CARGO DOORS WHEN ADDED TO THE EXISTING SYSTEM •PIPER PA31 •CABIN DOOR •CREW DOORS •BOTH DOORS •BEECH 36, 58 •CABIN DOOR •REAR DOORS •ELECTRIC ONLY REAR DOORS ADDED TO EXISTING SYSTEM •BFA 3000 COMPRESSOR NEW •RH50 RESISTOR PAK •BEECH 58 P SERIES SEAL •CESSNA P337 |
|--|---|

CALL FOR A QUOTE FOR YOUR AIRCRAFT

MAP POCKET



10' elastic mouth, square black vinyl pocket mounted on fiberboard. Includes hardware.P/N 09-17415

TAIL WHEEL BOOTS



To keep your aircraft components clean from contamination by dust, grime and dirt, install these quality covers made from black vinyl. No mounting hardware included.

Cessna 195P/N 09-17350

StaggerwingP/N 09-17352

StearmanP/N 09-17355

PIPER SHOCK BOOTS / COVERS



To keep your aircraft components clean from contamination by dust, grime and dirt, install these quality covers made from black vinyl. No mounting hardware included.

| Aircraft | Description | Qty | Part No. | Price |
|---------------------------|---------------------------|------|----------|-------|
| PA-22 | 1 Pc. Control Column Boot | Each | 09-17410 | . |
| PA-25 | Gate Control Rod Boot | Each | 09-17357 | . |
| J-3 | Piper Shock Boots | Pair | 09-17360 | . |
| PA-25 | Gate Control Rod Boot | Each | 09-17375 | . |
| PA-25, SN25-2000 to -4171 | Shock Strut Boots, pair | Pair | 09-17377 | . |

MISCELLANEOUS BOOTS / COVERS

| Aircraft | Description | Qty | Part No. | Price |
|---------------------------|-----------------------------------|------|----------|-------|
| Aeronca 7AC | Joy Stick Covers | Pair | 09-17362 | . |
| Cessna172 (also fits 182) | Steering Linkage Covers | Pair | 09-17365 | . |
| Citabria | Interior Boots | Each | 09-17367 | . |
| Beech Bonanza | Gear Boots for Main Gear | Pair | 09-17370 | . |
| Beech Bonanza | Dust Boot for Retractor Nose Gear | PAIR | 09-17372 | . |

SEAT SLINGS



These canvas slings are available in Off-White or Olive Drab. All seat slings include front and rear slings except:

Aeronca 65CA..... 1pc PA-12 3 pcs
 Piper J-3..... 3 pcs Taylorcraft 1 pc
 PA-22 1 pc

Note: Complete Part Number with color. Use -1 for Off White or -2 for Olive Drab.

| Aircraft | Part No. | Price | Aircraft | Part No. | Price |
|--------------|-----------|-------|-------------|-----------|-------|
| Aeronca 65CA | 09-17320- | . | Piper J-3 | 09-17330- | . |
| Bellanca | 09-17322- | . | Piper J-5 | 09-17332- | . |
| Citabria | 09-17325- | . | Piper PA-12 | 09-17335- | . |
| KR-1 & 2 | 09-17327- | . | Piper PA-22 | 09-17337- | . |
| | | | Taylorcraft | 09-17340- | . |

WINDLACE INTERIOR DOOR SEAL WELT



1/2" diameter vinyl covered material that provides additional sealing and ornamental edging for the door opening. The windlace is mounted between door post structure and upholstery panels or trim. Install with sheet metal screws. Black color only.

P/N 09-00281 / ft.

ANTIQUE PIPER WING ROOT FRAME COVERS



This cover is constructed of a lightweight stiffener panel, 1/2" foam padding and headliner fabric. A flap extends into the back side of the wing root frame and glues in place for a professional finish. P/N 09-17345.....

3M™ SUPER WEATHERSTRIP ADHESIVE

For adhering all types of rubber weatherstripping to metal. Light colored adhesive, very fast drying, exceptional bonding strength. Can be used for adhering vinyl trim head liners and side panels.

5 oz. tube, #8001..... P/N 09-27200

3M™ WEATHERSTRIP ADHESIVE



Adheres firmly to metal and has quick tack necessary for holding pads and linings in place securely. Can also be used for sealing windshields between rubber and glass. 5 oz. tube, #8011..... P/N 09-27300

3M™ FAST TACK TRIM ADHESIVE



This general purpose adhesive is used for bonding trim fabrics, floor mats, and rugs. Features quick tacking quality, does not bleed through fabric, and remains rubbery and flexible. Doesn't dry hard. Excellent for upholstery repairs.

5 oz. tube, #8031..... P/N 09-27210

3M™ GENERAL TRIM SPRAY ADHESIVE

This convenient sprayable adhesive is used for bonding a variety of trim fabrics. It is non-misting, very strong, light colored, and has a controllable spray pattern.

19.75 oz. Aerosol Can..... P/N 09-28330

FOR OTHER 3M™ PRODUCTS SEE PAGES 345-352

SCOTCH GRIP RUBBER ADHESIVE

This fast drying adhesive develops strength very quickly. It has excellent heat resistance; temperature performance is from -5 to 300°F. Meets specification requirements of MIL-A-1154C. Bonds neoprene, reclaim, SB-R, and butyl rubber to metal, wood, most plastics, and many other products. #1300L Qt Can..... P/N 09-27220



AERO-SEAL CEMENT

Designed for door seals and moldings. Adheres rubber to wood, other rubber, fiberglass or metal. 4 oz. brush-top container. P/N 05-00955

HEADLINERS - INTERIOR MATERIALS

HEADLINERS

A sagging or torn headliner can make even the nicest airplane look unattractive and worn out. Headliners are actually quite inexpensive and easier to replace than many pilots realize. Our headliners are professionally manufactured and every headliner set comes with complete instructions. Available in Excell stretchable vinyl or wool. Specify fabric type and color as noted below the chart. Headliners are special order & non-returnable.

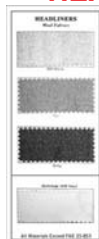
| AIRCRAFT | PART NO. | PRICE |
|-----------------------|----------|-------|
| Aeronca | | |
| 7AC | 09-17454 | . |
| 11AC | 09-17455 | . |
| 15AC | 09-17456 | . |
| Chief 65CA | 09-17458 | . |
| Chief LA65 | 09-17460 | . |
| L-3 Defender | 09-17462 | . |
| Bellanca Scout | | |
| w/Greenhouse | 09-17464 | . |
| Super Viking 1730 | 09-17466 | . |
| Cessna | | |
| 120/140 | 09-17468 | . |
| 150 (59) | 09-17470 | . |
| 150 (60) | 09-17472 | . |
| 150 (61-63) | 09-17474 | . |
| 150 (64-65) | 09-17475 | . |
| 150 (66-68) | 09-17476 | . |
| 150 (69) | 09-17478 | . |
| 170A/170B | 09-17480 | . |
| 172 (56-58) | 09-17482 | . |
| 72 (59-60) | 09-17484 | . |
| 72 (61-62) | 09-17485 | . |
| 172 (63-70) | 09-17486 | . |
| 175 | 09-17488 | . |
| 180 | 09-17490 | . |

| AIRCRAFT | PART NO. | PRICE |
|----------------------|----------|-------|
| Cessna | | |
| 182 (56) | 09-17492 | . |
| 182 (57-59) | 09-17494 | . |
| 182 (60-61) | 09-17495 | . |
| 182 (62, Omnivision) | 09-17496 | . |
| 185 (75) | 09-17498 | . |
| 206/207 | 09-17510 | . |
| 210 (75) | 09-17512 | . |
| 310 | 09-17514 | . |
| Citabria | | |
| w/Greenhouse | 09-17515 | . |
| w/o Greenhouse | 09-17516 | . |
| Commonwealth | | |
| Skyranger | 09-17518 | . |
| Fairchild | | |
| 24 | 09-17520 | . |
| Maule | | |
| M4 | 09-17522 | . |
| M5 | 09-17524 | . |
| Piper | | |
| J-4 Coupe* | 09-17525 | . |
| PA-121/J-5* | 09-17526 | . |
| PA-14* | 09-17528 | . |
| PA-15 Vagabond* | 09-17530 | . |

| AIRCRAFT | PART NO. | PRICE |
|---|----------|-------|
| Piper | | |
| PA-16 Clipper* | 09-17532 | . |
| PA-18 Super Cub* | 09-17534 | . |
| PA-20/22 (51-52)* | 09-17535 | . |
| 6 bows, 2 zippers | | . |
| PA-20/22 (52-58)* | 09-17536 | . |
| 8 bows, 3 zippers | | . |
| Colt 108* | 09-17538 | . |
| PA-23/250 (early 1960) | 09-17540 | . |
| PA-242 (thru 1965) | 09-17542 | . |
| PA28/323 | 09-17544 | . |
| Stinson | | |
| 1084 | 09-17546 | . |
| 10A | 09-17548 | . |
| 105-HW75 | 09-17550 | . |
| Taylorcraft | | |
| BC12 | 09-17552 | . |
| 1 Specify round or square windshield Round: S/N 12-01 thru 12-2903.-2907, -2914, -2915, -2917, -2925, -2950, -3028-S, -3901 -3902, -3903; Square: S/N 12-2904 and up except those listed above. | | |

Note: Complete Part No. with Fabric & Color. Excell stretchable vinyl off white -1, wool off white -2, Tan -3, Gray -4.

HEADLINER FABRIC SWATCH SAMPLE



Wool Fabrics

Wool headlining fabrics are available in Off White, Tan or Grey. The fit is in the quality of the workmanship, therefore it can be made to conform to almost any curve.

Mellohlide VFR

Mellohlide VFR vinyl has a unique four-way stretch which easily eliminates tension wrinkles and produces a smooth, professional finish. Backing and facing are mildew resistant.

All materials exceed FAR 23-853

P/N 09-02004 FREE

FIREWALL SETS

Vinyl outside, backed with 1/4" closed-cell insulation. If your aircraft is not listed, please send us your current firewall set to use as a pattern. 1-Piece Bulkhead Firewall



| Aircraft | Part No. | Price |
|----------------|----------|-------|
| Aeronca 11AC | 09-35910 | . |
| Cessna 120/140 | 09-35915 | . |
| Piper PA20/22 | 09-35925 | . |
| Piper PA18 | 09-35930 | . |
| Piper PA28/140 | 09-35935 | . |



CITABRIA

Bulkhead and wrap-around pad 3 piece set.

P/N 09-35950

LUSCOMBE 8A & 8E

Please specify model. Also specify if 8A is with or without dishpan. If "with dishpan", specify if round or oblong.

P/N 09-35940

w/Dishpan add P/N 09-35945

UPHOLSTERY HARDWARE

82° CSK Washer

Size 4 P/N 04-00393 Size 6 P/N 04-00394

82° Oval Head Screw

4x1/2 - A-OV.... P/N O4X8..... 6x1/2 - A-OV.... P/N O6X8.....
6x3/3 - A-OV.... P/N O6X12..... 6x1..... P/N O6X16.....



Snap Studs - Males snaps attached to self-tapping phillips head screws. For canopies

#7 x 3/8"..... P/N 04-01520

#7 x 5/8"..... P/N 05-02131

HEADLINER WOOL

This is a quality versatile wool headlining fabric. Wrinkles can be removed by applying water in a fine mist then using heat, such as a hair dryer, allowing wool to shrink. This gives a nice tight fit. Colors: Off-white, tan and gray. Complete P/N with color choice using (-2) for Off white, (-3) for tan, or (-4) for gray.

P/N 09-17566 /yd.



3M™ HEADLINER CEMENT

Headliner, rubber & gasket adhesive.

Quart..... P/N 09-17570

FOR OTHER 3M™ PRODUCTS SEE PAGES 345-352



SUPER TRIM ADHESIVE #1081

A high temp high strength contact type adhesive. Bonds metal, foam, decorative laminates, fabrics, headliners. Variable width spray pattern. Meets Fed. Spec. MMM-A-130B.

16.5 Oz. Can..... P/N 09-42652 ea.

HEADLINER EXCELL STRETCHABLE VINYL

Unique four-way stretch that easily eliminates tension wrinkles, producing a smooth professional finish. Backing and facing are mildew resistant. 54" width. Color: Off white.

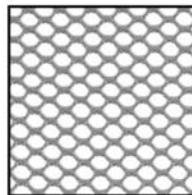
P/N 09-17564 /yd.



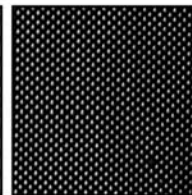
FELT

All wool, 1/4" thick felt for paddings. Firm but resilient construction for many aircraft applications. Gray/brown mix. NOTE: Sold in Full 36" Width only.

P/N 09-31600 /Lineal Ft.



Tan PN 09-00461



Black PN 09-00462

CARGO NETTING POCKET MESH - MSG mesh products are developed with customers to ensure the highest quality standard in both product design and longevity.

Black 50" wide..... P/N 09-00462 / yd.

Tan 60" wide..... P/N 09-00461 / yd.

AP

3M™ LEADING EDGE TAPES - PROTECTIVE BOOTS



3M™ 8672 POLYURETHANE PROTECTIVE TAPES

3M™ Polyurethane Protective Tape 8672 is made from a tough abrasion resistant polyurethane elastomer that resists punctures, tearing, abrasion and erosion. It is formulated for resistance to ultraviolet light.

Polyurethane Protective Tape 8672 provides a simple, easy method of protecting a surface from corrosion, abrasion and minor impact damage. It can be installed in a minimum amount of time with simple tools. It can be painted or applied over painted surfaces. Polyurethane Protective Tapes 8672 and 8672 GB are constructed with a long-aging, solvent resistant, pressure sensitive acrylic adhesive that is protected with an easy release paper liner. Polyurethane Protective Tape 8672 is a transparent tape with a paper liner on the adhesive side.

| W | L | Color | Description | Part No. | Price |
|----|------|-------------|------------------------|----------|-------|
| 1" | 12yd | Gloss Black | 3M™ 8672 Tape | 09-01636 | . |
| 1" | 12yd | Clear | 3M™ 8672 Tape | 09-01632 | . |
| 2" | 12yd | Gloss Black | 3M™ 8672 Tape | 09-01637 | . |
| 2" | 12yd | Clear | 3M™ 8672 Tape | 09-01633 | . |
| 3" | 12yd | Gloss Black | 3M™ 8672 Tape | 09-01638 | . |
| 4" | 12yd | Gloss Black | 3M™ 8672 Tape | 09-01639 | . |
| 4" | 12yd | Clear | 3M™ 8672 Tape | 09-01635 | . |
| 6" | 18yd | Clear | 3M™ 8672 Light A/C Kit | 09-20110 | . |
| 6" | 18yd | Gloss Black | 3M™ 8672 Tape | 09-02104 | . |
| 1" | 36yd | Clear | 3M™ 8672 Tape | 09-00841 | . |
| 2" | 36yd | Clear | 3M™ 8672 Tape | 09-20140 | . |
| 3" | 36yd | Clear | 3M™ 8672 Tape | 09-00843 | . |
| 4" | 36yd | Clear | 3M™ 8672 Tape | 09-20145 | . |
| 6" | 36yd | Clear | 3M™ 8672 Tape | 09-00845 | . |
| 1" | 36yd | Gloss Black | 3M™ 8672 Tape | 09-00842 | . |
| 2" | 36yd | Gloss Black | 3M™ 8672 Tape | 09-00811 | . |
| 3" | 36yd | Gloss Black | 3M™ 8672 Tape | 09-00844 | . |
| 4" | 36yd | Gloss Black | 3M™ 8672 Tape | 09-00812 | . |
| 6" | 36yd | Gloss Black | 3M™ 8672 Tape | 09-00846 | . |

3M™ 8674 POLYURETHANE PROTECTIVE TAPES



3M™ Polyurethane Protective Tape 8674 is made from a tough abrasion resistant polyurethane elastomer that resists punctures, tearing, abrasion and erosion. It is formulated for resistance to ultraviolet light. Polyurethane Protective Tape 8674 provides a simple, easy method of protecting a surface from corrosion, abrasion and minor impact damage. It can be installed in a minimum amount of time with simple tools. It can be painted or applied over

painted surfaces. Polyurethane Protective Tape 8674 is constructed with a long-aging, solvent resistant, pressure sensitive acrylic adhesive that is protected with an easy release poly liner. This tape is a transparent film and available in 2 liner configuration: Protective Tape 8674 has a single poly liner on the adhesive side. Protective Tape 8674DL has dual liners, one on each side of the tape. The adhesive side has a poly liner, and the liner on the top of the urethane tape is polyester.

| W | L | Color | Description | Part No. | Price |
|----|------|-------|---------------------------|----------|-------|
| 1" | 12yd | Clear | 3M™ 8674 Lead Edge Tape | 09-01642 | . |
| 1" | 36yd | Clear | 3M™ 8674 Lead Edge Tape | 09-00847 | . |
| 2" | 12yd | Clear | 3M™ 8674 Lead Edge Tape | 09-01643 | . |
| 2" | 36yd | Clear | 3M™ 8674 Lead Edge Tape | 09-00813 | . |
| 3" | 12yd | Clear | 3M™ 8674 Lead Edge Tape | 09-01644 | . |
| 3" | 36yd | Clear | 3M™ 8674 Lead Edge Tape | 09-00849 | . |
| 4" | 12yd | Clear | 3M™ 8674 Lead Edge Tape | 09-01645 | . |
| 4" | 36yd | Clear | 3M™ 8674 Lead Edge Tape | 09-00814 | . |
| 6" | 36yd | Clear | 3M™ 8674 Lead Edge Tape | 09-00850 | . |
| 1" | 12yd | Clear | 3M™ 8674DL Lead Edge Tape | 09-01646 | . |
| 1" | 36yd | Clear | 3M™ 8674DL Lead Edge Tape | 09-00851 | . |
| 2" | 12yd | Clear | 3M™ 8674DL Lead Edge Tape | 09-01647 | . |
| 3" | 12yd | Clear | 3M™ 8674DL Lead Edge Tape | 09-01648 | . |
| 3" | 36yd | Clear | 3M™ 8674DL Lead Edge Tape | 09-00852 | . |
| 4" | 12yd | Clear | 3M™ 8674DL Lead Edge Tape | 09-01649 | . |

AP

3M™ POLYURETHANE PROTECTIVE BOOTS



3M™ Polyurethane Protective Boots SJ8665 are pre-formed and used extensively in private, commercial and military aircraft to fit the complex curvatures of a variety of applications. These boots are designed to help provide long lasting protection of radomes, wing and stabilizer tips, landing gear pods, composite parts, and other portions of aircraft from rain, moisture ingress, UV light, insects, sand, sleet, snow, and most other airborne particle erosion damage. The boots are part of a 3M family of high performance surface protection products available for various aerospace applications worldwide.

| Boot Application | 3M P/N | Our P/N | Price |
|---|----------|----------|-------|
| Aero Commander | | | |
| 500-1000, Radome | FP-20 | 09-00854 | . |
| Shrike, Radome | FP-91 | 09-00855 | . |
| Aerostar | | | |
| 601 P Radome | FP-127 | 09-00856 | . |
| Beechcraft | | | |
| Baron Norton Radom (Honeycomb) | FP-55 | 09-00857 | . |
| Baron Non-Honeycomb (#58-410015-613) | FP-68 | 09-00858 | . |
| Baron Honeycomb Nose (#58-410017-603) | FP-69 | 09-00859 | . |
| Beech/Mitsubishi Diamond Radome | FP-84 | 09-00860 | . |
| Duchess Radome | FP-129 | 09-00861 | . |
| Duke Radome | FP-179 | 09-00862 | . |
| 90,100,200,1300,1900,Most King Air, 65/A65,70,80, A80,B80,U-8F, U-21A | FP-5 | 09-00863 | . |
| 99 | FP-35 | 09-00864 | . |
| 1900& King Air Series Vertical Fairing Dome | FP-173 | 09-00865 | . |
| Bombardier | | | |
| Learjet 23,24,25, Radome (PN24111241-1) | FP-7-1 | 09-00866 | . |
| Learjet 33, 36 Wing Tip | FP-13-1 | 09-00867 | . |
| Learjet M-45 Navigational Lens Ass'y | FP-195-1 | 09-00868 | . |
| Learjet M-45 Radome | FP-174-1 | 09-00869 | . |
| Learjet 50, 55, 60, (PN54111212-1) | FP-14-1 | 09-00870 | . |

| Boot Application | 3M P/N | Our P/N | Price |
|---|--------|----------|-------|
| Cessna | | | |
| 208 Wing Mounted Radome | FP-34 | 09-00871 | . |
| 208 Prop Spinner | FP-87 | 09-00872 | . |
| 335,340,340A,401-421 | FP-25 | 09-00873 | . |
| Radome Long Nose | FP-90 | 09-00875 | . |
| 310K-Q w/Norton Rad, 320, 310R (#4096) | FP-130 | 09-00876 | . |
| 310q w/Norton Radome PN4131 | FP-190 | 09-00877 | . |
| 310R w/Norton Radome PN4096 | FP-114 | 09-00877 | . |
| Citation S, I, II, IV, V | FP-29 | 09-00878 | . |
| Citation II, IV, VII | FP-70 | 09-00879 | . |
| 210 Centurian,182,206,337 w/Wing Pod | FP-126 | 09-00880 | . |
| 425-441 Series Radome | FP-41 | 09-00881 | . |
| Piper | | | |
| Aztec (Turbo) "C" non Coleman/Apache | FP-143 | 09-00882 | . |
| Aztec E-F Radome | FP-136 | 09-00884 | . |
| Cheyenne I, PA31P, Mojave, PA31T1/3, etc. | FP-12 | 09-00885 | . |
| Cheyenne II | FP-4 | 09-00886 | . |
| Cheyenne III, IV | FP-24 | 09-00887 | . |
| Navajo (except PA31P) | FP-23 | 09-00888 | . |
| Seneca | FP-54 | 09-00889 | . |

3M™ POLYURETHANE PROTECTION TAPE APPLICATION SOLUTION.

A pre-mixed, water-based solution for applying 3M Polyurethane Protective Tape and Boots. Solution is provided pre-mixed in a ready to use squirt bottles. Allows wide width and contoured performed boots to be easily installed.

P/N 06-00604.....



3M™ TAPE ADHESION PROMOTER 86A & CLOTH

Tape Adhesion Promoter 86A is intended for use in enhancement of 3M Polyurethane Protective Tape adhesion levels to certain types of surfaces. It is most effective when used over polyurethane enamel surfaces. P/N 06-00605

Adhesion Promoter Cloth (Sold Each) P/N 05-03479



3M™ TAPE & RESIDUE REMOVE - Use for removal of polyurethane protective tapes, neoprene rubber and other tape residues; such as carpet tape from interior cabin composite surfaces. 16 Ounce..... P/N 05-02682

Gallon..... P/N 05-02683.....

FOR OTHER 3M™ PRODUCTS SEE PAGES 345-352

LEADING EDGE TAPE - WINGWALK



LEADING EDGE TAPE

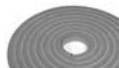
Clear plastic tape with adhesive backing for application to wing and tail leading edges for protection against nicks caused by stones and gravel. 100 Ft. Rolls.

| Width | Color | P/N | Price/roll |
|-------|-------|----------|------------|
| 2" | Clear | 09-31610 | . |
| 3" | Clear | 09-31615 | . |
| 4" | Clear | 09-31620 | . |
| 6" | Clear | 09-31625 | . |

3M™ POLYURETHANE LEADING EDGE TAPE

Designed to help protect light aircraft from the damaging effects of rain, insects, sand, snow and sleet. A tough durable, protective tape for exposed surfaces. 3M #8672 Polyurethane Protective Tape is designed to help protect the leading edges of aircraft wings, struts, and horizontal and vertical stabilizers from airborne particle damage. Versions of this tape are used extensively for surface protection in both military and commercial aircraft applications. May be applied to clean metal or to commonly used aircraft paints over metal or fabric. Not to be used on props, helicopter rotors or balanced surfaces such as elevators or ailerons. Clear in color. Sold in full rolls only.

2" wide..... P/N 09-20140.....
4" wide..... P/N 09-20145.....
6" wide..... P/N 09-20110.....



MD FOAM TAPE

An excellent canopy seal which helps stop vibration. Recommended for use on Quicke. Size: 3/8" thick x 1/2" wide x 10 ft. P/N 05-01100.....



3M™ DUCT TAPE

A general-purpose gray cloth tape with good adhesive qualities. 2" x 60 Yd. Roll..... P/N 09-30900.....



FOR OTHER 3M™ PRODUCTS SEE PAGES 345-352

MASKING TAPE

Armak general or 3M purpose crepe masking tape. Long shelf life.

1/4" x 60 yd. Roll..... P/N 09-20101..... ea.
3/4" x 60 Yd. Roll..... P/N 09-20100..... ea.



CLOTH TAPE

Has many uses in aircraft maintenance work. Strip over sharp corners to protect fabric. Strips under doped fabric will prevent fabric from sticking to parts. Pressure-sensitive adhesive backing. Easily applied, easily removed.

1" x 60 Yd. Roll..... P/N 09-17100.....



GLASS STRAPPING TAPE

A pressure-sensitive transparent acetate film tape reinforced with glass strands. Possesses high tensile strength (375 lbs./inch width) and good impact strength. Especially effective for carton sealing applications.

#RG-2A, 3/4" x 60 Yd. Roll..... P/N 09-31200.....

POLYPROPYLENE TAPE

A pressure-sensitive transparent polypropylene plastic tape for packaging & edging. Outstanding stretchiness/conformability. Waterproof, flame, abrasion and solvent resistant.

#371, 2" x 110 Yd. Roll..... P/N 09-31300.....

RESCUE TAPE

Rescue Tape is a self-fusing silicone repair product with infinite uses. First used by the US Military and now seen at consumer and industrial trade shows across America, this is the most versatile and easy to use emergency repair product available. Just stretch, wrap and Get Rescued! You can repair leaks on plumbing and hoses in a flash, use for electrical wiring or as shrink wrap, wrap tool handles, and much, much more. Incredible 700 PSI Tensile Strength, Insulates 8,000 Volts per layer, Withstands 500° F Degrees of heat! (260° C) ~ Remains flexible to -85° F! (-60° C), Creates a Permanent Air-Tight, Water-Tight Seal in seconds, Resists Fuels, Oils, Acids, Solvents, Salt Water, Road Salt, UV Rays.



| Description | Color | Part No. | Price |
|--|-------|----------|-------|
| Rescue Tape Standard Roll 1"x12"x.020" | Red | 01-00989 | . |
| Rescue Tape Standard Roll 1"x12"x.020" | Black | 01-00990 | . |
| Rescue Tape Standard Roll 1"x12"x.020" | Clear | 01-00991 | . |
| Rescue Tape Industrial Roll 2"x36"x.030" | Black | 01-00992 | . |
| Rescue Tape Industrial Roll 2"x36"x.030" | Red | 01-00993 | . |

CLEAR SLIP RESISTANT WING WALK



This patented slip-resistant material is an excellent alternative to black Wing Walk which has been used on aircraft for many years. This material is nearly clear (slightly opaque) and has an adhesive backing that requires heat or 1500 lbs. of pull to remove it from the surface on which it is applied. Imagine how much better a newly painted aircraft can look with a clear material which does not alter the paint design. The material is impervious to chemicals, compounds, and water and will expand and contract with the metal or fabric. Surface roughness of the material is about the same as standard black Wing Walk. Furnished in 16" x 30" sheets.

P/N 09-31810..... Ea.

NON-SKID WING WALK TAPE

Our non-skid adhesive tape is excellent for wing walk applications. The white and clear is perfect for pilots wishing their step areas to blend in, not stand out. This tape meets all applicable Mil Specs and has superior adhesion qualities. Sold by lineal foot.

DISCOUNT: LESS 15% ON 50 FT (Per P/N)

| Width | Color | Part No. | Price/Ft. | Width | Color | Part No. | Price/Ft. |
|-------|-------|----------|-----------|-------|-------|----------|-----------|
| 6" | Clear | 09-31645 | . | 12" | White | 09-31660 | . |
| 12" | Clear | 09-31650 | . | 6" | Black | 09-31665 | . |
| 6" | White | 09-31655 | . | 12" | Black | 09-31670 | . |
| 24" | Clear | 09-31685 | . | 24" | White | 09-31680 | . |
| 24" | Black | 09-31675 | . | | | | |

ULTRA WING WALK COATING

Developed exclusively for Aircraft Door Seals by a major chemical company, this phenomenal new wing walk coating reduces the chance of slipping when climbing up on the wing. Unlike the mundane wing walk coating found on most aircraft, ULTRA WING WALK is a fast-drying polyurethane-based semi-gloss black coating with fine particles of rubber that adds class to any plane..... P/N 05-04366.....



RANDOLPH WING WALK COMPOUND

Black Wing Walk Compound is a special grit mixed into a tough black enamel material. Used to form non-slip surfaces on airplane wing walks. Apply with a coarse brush directly over regular finish after thoroughly cleaning the surface, and breaking the glaze if the surface is old. Thin with toluene as required. Conforms to MIL-W-5044. Randolph X-1567.

Qt..... P/N X-1567-QT.....
Gal..... P/N X-1567-1G.....



3M™ SAFETY WALK SHEET

A durable, mineral coated, non-slip fabric for wing walks. Waterproof, weatherproof and unaffected by vibrations, heat, cold, gasoline or oil. Assures safe footing. Pressure-sensitive backing should have additional coating of Pliobond to assure adhesion for aircraft applications. Sold by lineal foot.



12" Width (3M)..... P/N 09-32250..... /Ft.
1/2 pt..... P/N 09-28000.....
1 pt..... P/N 09-28100.....
1 qt..... P/N 09-28200.....

Pliobond }
adhesive }

3M™ SAFETY WALK EDGE SEALING COMPOUND

3M Safety Walk Edge Sealing Compound is recommended for sealing around the edges of safety walk installations exposed to outdoor weathering or to excessive amounts of grease, oil or water.

5 oz. Tube..... P/N 09-32300.....



FOR OTHER 3M™ PRODUCTS SEE PAGES 345-352

RAC WING WALK

RAC wing walks are not made from the usual, sand-paper-like material, which can decompose and scratch both the wing surface and your knees. Instead, they use a low profile, synthetic rubber, that combines a comfortable feel with good gripping power. The RAC wing walk comes pre-cut to 26 1/2" x 9 1/2". Installation is easy with the aggressive, self-adhering backing. Each wing walk comes rolled in its own, 4"x4"x10" box and installation instructions are also provided with each box. Black P/N 09-28210..... ea.



PLIOBOND

Pliobond #20 is a viscous, quick setting highly versatile adhesive. Bonds metal; wood, plastics, fabrics; ceramics, glass, vulcanized rubber, paper, leather and concrete. Thin with MEK.



1/2 Pt. Brush Top Can P/N 09-28000.....
Pt. Can..... P/N 09-28100.....
Qt. Can..... P/N 09-28200.....

Discount Less 15% on 12 (Assorted)

AP

GASKETS - O-RINGS - GROMMETS



AN900 GASKETS

AN900 (MS35769) annular copper-asbestos gaskets are suitable for temperatures up to 500° F. and pressures up to 200 PSI. Ring width is 1/8"; thickness is 3/32.

| AN900 Dash No. | MS35769 Dash No. | I.D. (In.) | Price Each | AN900 Dash No. | MS35769 Dash No. | I.D. (In.) | Price Each |
|----------------|------------------|------------|------------|----------------|------------------|------------|------------|
| -3 | -1 | 3/16 | . | -17 | -24 | 1-1/16 | . |
| -4 | -2 | 1/4 | . | -18 | -26 | 1-1/8 | . |
| -5 | -5 | 5/16 | . | -19 | -29 | 1-3/16 | . |
| -6 | -6 | 3/8 | . | -20 | -31 | 1-1/4 | . |
| -7 | -8 | 7/16 | . | -21 | -33 | 1-5/16 | . |
| -8 | -9 | 1/2 | . | -22 | -35 | 1-3/8 | . |
| -9 | -10 | 9/16 | . | -23 | -38 | 1-7/16 | . |
| -10 | -11 | 5/8 | . | -24 | -39 | 1-1/2 | . |
| -11 | -13 | 11/16 | . | -25 | -41 | 1-9/16 | . |
| -12 | -15 | 3/4 | . | -26 | -42 | 1-5/8 | . |
| -13 | -17 | 13/16 | . | -27 | -46 | 1-11/16 | . |
| -14 | -18 | 7/8 | . | -28 | -48 | 1-3/4 | . |
| -15 | -20 | 15/16 | . | -29 | -51 | 1-13/16 | . |
| -16 | -21 | 1 | . | -30 | -52 | 1-7/8 | . |

Discount Less 20% For 100 Per Size

AN900 GASKET KIT

144 piece kit of copper crush washers in common sizes. Complete with durable plastic case with dividers and size chart. P/N 05-02220.....



AN901 O-RINGS

AN901 tube connection seals are fabricated from type1100 alum., H14 temper.

| AN901 Dash No. | Tube O.D. | Price Each | AN901 Dash No. | Tube O.D. | Price Each |
|----------------|-----------|------------|----------------|-----------|------------|
| -4A | 1/4 | . | -8A | 1/2 | . |
| -5A | 5/16 | . | -10A | 5/8 | . |
| -6A | 3/8 | . | -12A | 1-1/16 | . |

Discount Less 20% For 100 Per Size

MS28778 TUBE FITTING BOSS GASKET (FORMERLY AN6290)

Straight-thread tube fitting boss gaskets are used to provide a seal between straight-thread fittings, such as AN815, and ports of instruments with female straight threads instead of the more common female tapered pipe threads.

| MS28778 Dash No. | Tube O.D. | Price Ea. | MS28778 Dash No. | Tube O.D. | Price Ea. |
|------------------|-----------|-----------|------------------|-----------|-----------|
| -2 | 1/8 | . | -5 | 5/16 | . |
| -3 | 3/16 | . | -6 | 3/8 | . |
| -4 | 1/4 | . | | | . |

AN931 ELASTIC GROMMETS (MS35489)

Flexible grommets, made of black synthetic rubber to specification MIL-G-3036. Resistant to hot oil & coolant. Used to protect tubing, wiring and control cables where they pass through bulkheads & firewalls.

| PN | MS35489 ID | OD | Hole Size | Thickness | Price |
|-------------|------------|-------|-----------|-----------|-------|
| AN931-2-9 | -2 | 1/8 | 3/4 | 9/16 | 3/16 |
| AN931-2-16 | -3 | 1/8 | 1-1/4 | 1 | 1/4 |
| AN931-3-5 | -4 | 3/16 | 7/16 | 5/16 | 3/16 |
| AN931-3-9 | -134 | 3/16 | 3/4 | 9/16 | 3/16 |
| AN931-4-7 | -6 | 1/4 | 5/8 | 7/16 | 3/16 |
| AN931-4-12 | -7 | 1/4 | 1 | 3/4 | 1/4 |
| AN931-4-16 | -8 | 1/4 | 1-1/4 | 1 | 1/4 |
| AN931-5-9 | -9 | 5/16 | 13/16 | 9/16 | 5/16 |
| AN931-5-12 | -10 | 5/16 | 1 | 3/4 | 5/16 |
| AN931-6-10 | -11 | 3/8 | 7/8 | 5/8 | 5/16 |
| AN931-6-16 | -12 | 3/8 | 1-1/4 | 1 | 1/4 |
| AN931-7-11 | -13 | 7/16 | 15/16 | 11/16 | 5/16 |
| AN931-8-13 | -14 | 1/2 | 1-1/16 | 13/16 | 5/16 |
| AN931-8-20 | -15 | 1/2 | 1-1/2 | 1-1/4 | 1/4 |
| AN931-9-13 | -16 | 9/16 | 1-1/16 | 13/16 | 5/16 |
| AN931-10-14 | -17 | 5/8 | 1-1/8 | 7/8 | 5/16 |
| AN931-10-20 | -18 | 5/8 | 1-1/2 | 1-1/4 | 1/4 |
| AN931-11-16 | -19 | 11/16 | 1-5/16 | 1 | 3/8 |
| AN931-12-17 | -20 | 3/4 | 1-3/8 | 1-1/16 | 3/8 |
| AN931-12-20 | -135 | 3/4 | 1-5/8 | 1-1/4 | 1/4 |
| AN931-12-23 | -21 | 3/4 | 1-13/16 | 1-7/16 | 3/8 |
| AN931-14-20 | -22 | 7/8 | 1-5/8 | 1-1/4 | 7/16 |
| AN931-16-22 | -23 | 1 | 1-3/4 | 1-3/8 | 7/16 |
| AN931-20-38 | -25 | 1-1/4 | 2-3/4 | 2-3/8 | 7/16 |



O-RINGS

O-rings give effective sealing over wide ranges of pressure, temperature, and movement, with the advantage of sealing pressure in both directions and reducing friction and wear on moving parts. The use of O-rings as gaskets or static seals permits metal-to-metal contact and allows almost unlimited pressures under extreme vibration. All O-rings should be lubricated before installation and constant lubrication should be provided for running seals to avoid excessive wear. Avoid sharp edges, threads, and cross-drilled ports over or through which rings must be installed. AN6227B and AN6230B O-rings are manufactured to Spec. MIL-P 25732 for use in hydraulic systems using MIL-O-5606 hydraulic oils. MS28778 O-rings meet Spec. MIL-P-5510A and are suitable for MIL-O-5606 hydraulic fluid at 160° F.

| AN6227B Dash # | Dimensions (In.) W | I.D. | O.D. | Price Each | AN6227B Dash # | Dimensions (In.) W | I.D. | O.D. | Price Each |
|----------------|--------------------|--------|--------|------------|----------------|--------------------|--------|---------|------------|
| 1 | 1/16 | 1/8 | 1/4 | . | 24 | 1/8 | 1-5/16 | 1-9/16 | . |
| 2 | 1/16 | 5/32 | 9/32 | . | 25 | 1/8 | 1-3/8 | 1-5/8 | . |
| 3 | 1/16 | 3/16 | 5/16 | . | 26 | 1/8 | 1-7/16 | 1-11/16 | . |
| 4 | 1/16 | 7/32 | 11/32 | . | 27 | 1/8 | 1-1/2 | 1-3/4 | . |
| 5 | 1/16 | 1/4 | 3/8 | . | 28 | 3/16 | 1-1/2 | 1-7/8 | . |
| 6 | 1/16 | 5/16 | 7/16 | . | 29 | 3/16 | 1-5/8 | 2 | . |
| 7 | 1/16 | 3/8 | 1/2 | . | 30 | 3/16 | 1-3/4 | 2-1/8 | . |
| 8 | 3/32 | 3/8 | 9/16 | . | 31 | 3/16 | 1-7/8 | 2-1/4 | . |
| 9 | 3/32 | 7/16 | 5/8 | . | 32 | 3/16 | 2 | 2-3/8 | . |
| 10 | 3/32 | 1/2 | 11/16 | . | 33 | 3/16 | 2-1/8 | 2-1/2 | . |
| 11 | 3/32 | 9/16 | 3/4 | . | 34 | 3/16 | 2-1/4 | 2-5/8 | . |
| 12 | 3/32 | 5/8 | 13/16 | . | 35 | 3/16 | 2-3/8 | 2-3/4 | . |
| 13 | 3/32 | 11/16 | 7/8 | . | 36 | 3/16 | 2-1/2 | 2-7/8 | . |
| 14 | 3/32 | 3/4 | 15/16 | . | 37 | 3/16 | 2-5/8 | 3 | --- |
| 15 | 1/8 | 3/4 | 1 | . | 38 | 3/16 | 2-3/4 | 3-1/8 | . |
| 16 | 1/8 | 13/16 | 1-1/16 | . | 39 | 3/16 | 2-7/8 | 3-1/4 | . |
| 17 | 1/8 | 7/8 | 1-1/8 | . | 40 | 3/16 | 3 | 3-3/8 | . |
| 18 | 1/8 | 15/16 | 1-3/16 | . | 41 | 3/16 | 3-1/8 | 3-1/2 | . |
| 19 | 1/8 | 1 | 1-1/4 | . | 42 | 3/16 | 3-1/4 | 3-5/8 | . |
| 20 | 1/8 | 1-1/16 | 1-5/16 | . | 43 | 3/16 | 3-3/8 | 3-3/4 | . |
| 21 | 1/8 | 1-1/8 | 1-3/8 | . | 44 | 3/16 | 3-1/2 | 3-7/8 | . |
| 22 | 1/8 | 1-3/16 | 1-7/16 | . | 45 | 3/16 | 3-5/8 | 4 | . |
| 23 | 1/8 | 1-1/4 | 1-1/2 | . | 46 | 3/16 | 3-3/4 | 4-1/8 | . |

| AN6230B Dash # | Dimensions (In.) W | I.D. | O.D. | Price Each | AN6230B Dash # | Dimensions (In.) W | I.D. | O.D. | Price Each |
|----------------|--------------------|-------|-------|------------|----------------|--------------------|-------|-------|------------|
| 1 | 1/8 | 1-5/8 | 1-7/8 | . | 6 | 1/8 | 2-1/4 | 2-1/2 | . |
| 2 | 1/8 | 1-3/4 | 2 | . | 7 | 1/8 | 2-3/8 | 2-5/8 | . |
| 3 | 1/8 | 1-7/8 | 2-1/8 | . | 8 | 1/8 | 2-1/2 | 2-3/4 | . |
| 4 | 1/8 | 2 | 2-1/4 | . | 9 | 1/8 | 2-5/8 | 2-7/8 | . |
| 5 | 1/8 | 2-1/8 | 2-3/8 | . | 10 | 1/8 | 2-3/4 | 3 | . |

See Page 805 for AN/MS O-Ring Equivalent Chart.

AN/MS O-RING KIT



This AN/MS O-Ring Kit includes over 382 O-rings made of Nitrile Buna N 70 duro material. These rings have a temperature range of -6 to 275°F and are for use with petroleum oils and fluids. Size range in kit is 0 through 30.

(O-Ring Set An6227B-1, -30).....P/N 05-02210.....

AS568A O-RING KIT



- 70 Duro Nitrile
- 382 O rings
- Great kit for the homebuilder
- Sizes: -06 to -32

P/N 13-02804.....

MS29513 FUEL RESISTANT O-RINGS

These MS29513 series O-rings are resistant to fuel and are ideal for applications such as fuel injection connections and primers. A small amount of fuel proof grease applied to these O-rings helps the installation and operation of primers. Not resistant to automotive fuels.

| Part Number | Nominal Size | | | Price Each |
|-------------|--------------|--------|-------|------------|
| | I.D. | O.D. | W | |
| MS29513-006 | 1/8" | 1/4" | 1/16" | . |
| MS29513-007 | 5/32" | 9/32" | 1/16" | . |
| MS29513-008 | 3/16" | 5/16" | 1/16" | . |
| MS29513-009 | 7/32" | 11/32" | 1/16" | . |
| MS29513-010 | 1/4" | 3/8" | 1/16" | . |
| MS29513-011 | 5/16" | 7/16" | 1/16" | . |
| MS29513-012 | 3/8" | 1/2" | 1/16" | . |
| MS29513-110 | 3/8" | 9/16" | 3/32" | . |
| MS29513-111 | 7/16" | 5/8" | 3/32" | . |
| MS29513-112 | 1/2" | 11/16" | 3/32" | . |
| MS29513-113 | 9/16" | 3/4" | 3/32" | . |
| MS29513-114 | 5/8" | 13/16" | 3/32" | . |
| MS29513-115 | 11/16" | 7/8" | 3/32" | . |
| MS29513-116 | 3/4" | 15/16" | 3/32" | . |

AP

TIE RODS - GROMMET EDGING



BRUNTON TIE RODS

These high quality aircraft wires and terminals are manufactured in Scotland by Bruntons Aero Products who first originated streamline wires in 1909. They feature the stronger rolled threads and are available in high polish or satin finish.

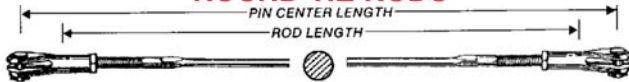
Material is 316 high tensile stainless steel. Wires are also available in BSF or metric threads. Special wires with combination streamline and round section commonly used for biplane roll wires or seaplane float installations are available. Wires are manufactured to AN specifications and are 100% proof loaded. Wires ordered with terminal assemblies are supplied assembled. Quality certifications are provided with all orders. Aircraft tie rods carry tensile loads for bracing wings, tail assemblies as well as float installations. They may be ordered separately or with terminal assemblies (AN665 terminal, clevis pin, jam nut, cotter pin). AN specs define thread lengths as well as a fixed difference in length between rod length and pin center length (K). Order pin center lengths ONLY when AN665 terminals are used on both ends of the wire. All other installations must order rod length. Due to fluctuations in international exchange rates, the prices of Brunton tie rods are subject to change. We guarantee the lowest prices and fastest delivery on all Brunton tie rods. Request current pricing. Allow 8-10 weeks for delivery of Brunton tie rods.

STREAMLINE TIE RODS



| AN Number | Size & Thread | Diameter Inches | Thread Length (IN.) | | K | Minimum Strength Pounds |
|-----------|---------------|-----------------|---------------------|-------|-------|-------------------------|
| | | | RH | LH | | |
| AN671AC- | 6-40 | .138 | 1 3/4 | 1 1/4 | 1 1/4 | 1,200 |
| AN673AC- | 10-32 | .190 | 1 7/8 | 1 3/8 | 1 1/2 | 2,400 |
| AN674AC- | 1/4-28 | .250 | 2 1/8 | 1 5/8 | 1 7/8 | 4,200 |
| AN675AC- | 5/16-24 | .3125 | 2 1/4 | 1 3/4 | 2 1/8 | 6,900 |
| AN676AC- | 3/8-24 | .375 | 2 3/8 | 1 5/8 | 2 1/4 | 10,000 |
| AN677AC- | 7/16-20 | .4375 | 2 5/8 | 2 1/8 | 2 1/2 | 13,700 |
| AN678AC- | 1/2-20 | .500 | 2 7/8 | 2 3/8 | 2 7/8 | 18,500 |
| AN679AC- | 9/16-18 | .5625 | 3 1/8 | 2 5/8 | 3 1/4 | 24,000 |
| AN680AC- | 5/8-18 | .625 | 3 3/8 | 2 7/8 | 3 1/2 | 29,500 |
| AN682AC- | 3/4-16 | .750 | 3 3/4 | 3 1/4 | 4 3/8 | 42,000 |

CALL FOR CURRENT PRICING! ROUND TIE RODS



| AN Number | Size & Thread | Diameter Inches | Thread Length (IN.) | | K | Minimum Strength Pounds |
|-----------|---------------|-----------------|---------------------|-------|-------|-------------------------|
| | | | RH | LH | | |
| AN701AC- | 6-40 | .138 | 1 3/4 | 1 1/4 | 1 1/4 | 1,000 |
| AN703AC- | 10-32 | .190 | 1 7/8 | 1 3/8 | 1 1/2 | 2,100 |
| AN704AC- | 1/4-28 | .250 | 2 1/8 | 1 5/8 | 1 7/8 | 3,400 |
| AN705AC- | 5/16-24 | .3125 | 2 1/4 | 1 3/4 | 2 1/8 | 6,100 |
| AN706AC- | 3/8-24 | .375 | 2 3/8 | 1 7/8 | 2 1/4 | 8,000 |
| AN707AC- | 7/16-20 | .4375 | 2 5/8 | 2 1/8 | 2 1/2 | 11,500 |
| AN708AC- | 1/2-20 | .500 | 2 7/8 | 2 3/8 | 2 7/8 | 15,500 |

CALL FOR CURRENT PRICING! SEALS-IT GROMMET SEALS



Grommet seals have many applications. In race cars they serve to keep unwanted smoke and fumes from entering the driver's area while protecting lines from chafing and abrading on rough surfaces. In hot rods and custom car applications, they provide the perfect "finishing touch" to all through panel installations. Wiring, fuel and oil lines, air and liquid hoses, and all other lines that make up your rod or custom, can make an otherwise detailed installation look unfinished. Seals-It grommet seals add the well-organized, professional appearance you want. Grommet seals also have many other applications including: marine, commercial equipment, motor homes, etc.

| Grommet Seal 1 Hole Series | | | | Grommet Seal 2 Hole Series | | | |
|----------------------------|-------|----------|-------|----------------------------|-------|----------|-------|
| Dia. | Hole | P/N | Price | Dia. | Hole | P/N | Price |
| 1.5" | n/a | 05-02493 | . | All Rubber Blank 5-1/4" | | | |
| 2.0" | n/a | 05-02494 | . | 1-1/2" | 2.125 | 05-02511 | . |
| 3.0" | n/a | 05-02495 | . | 2 Hole Blank 5-1/4" | | | |
| 3.0" | .250 | 05-02496 | . | 1.4" | n/a | 05-02493 | . |
| 3.0" | .375 | 05-02497 | . | 3/8" | n/a | 05-02494 | . |
| 3.0" | .500 | 05-02498 | . | 1/2" | n/a | 05-02495 | . |
| 3.0" | .625 | 05-02499 | . | 5/8" | .250 | 05-02496 | . |
| 3.0" | .750 | 05-02501 | . | 3/4" | .375 | 05-02497 | . |
| 3.0" | .950 | 05-02502 | . | 1" | .500 | 05-02498 | . |
| 3.0" | 1.180 | 05-02503 | . | 3.0" | .625 | 05-02499 | . |
| 4.0" | n/a | 05-02504 | . | 3.0" | .750 | 05-02501 | . |
| 4.0" | 1.00 | 05-02505 | . | 3.0" | .950 | 05-02502 | . |
| 4.0" | 1.80 | 05-02506 | . | 3.0" | 1.180 | 05-02503 | . |
| 4.5" | 1.50 | 05-02507 | . | 4.0" | n/a | 05-02504 | . |
| 4.5" | 2.12 | 05-02508 | . | 4.0" | 1.00 | 05-02505 | . |
| 6.0" | n/a | 05-02509 | . | 4.0" | 1.80 | 05-02506 | . |
| | | | | 2 Hole Blank 5-1/4" | | | |
| | | | | 1.4" | 2.750 | 05-02520 | . |
| | | | | 3/8" | 2.750 | 05-02521 | . |
| | | | | 1/2" | 2.750 | 05-02522 | . |
| | | | | 5/8" | 2.750 | 05-02523 | . |
| | | | | 3/4" | 2.750 | 05-02524 | . |
| | | | | 1" | 2.750 | 05-02525 | . |
| | | | | .700 | 3.625 | 05-02526 | . |

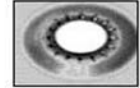
SPRING-FAST GROMMET EDGING



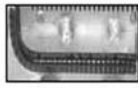
M22529/2 Series



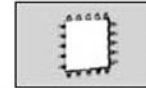
M22529/2 Series



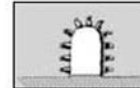
BAP Series



SL Series



M22529/1 Series



M22529/1 Series

Spring-Fast® Composite Grommet Edging covers sharp edges of panels that come in contact with wires and cables, and mechanically locks on indefinitely with finger pressure, in only seconds per foot, a significant time reduction and long-term reliability solution. Eliminates nylon caterpillar plastic grommets and associated toxic solvents, adhesives, ancillary materials and volatile organic compounds. Provides a cushion between sharp metallic edges and an aircraft's wiring, cabling, and tubing. Qualifications: resistance to shock, vibration, salt spray and immersion. Applications: avionics racks, ribs, bulkheads, intercostals, and other airframe structures.

Spring-Fast Grommet Edging is approved by the U.S. Defense Department and FAA per NASM 22529/1 and NASM 22529/2 for all aircraft applications. Meets FAR 25.853 for flammability and Mil Std 1344 for shock & vibration. Spring-Fast is available in 8 different sheet thickness ranges from 0.025 to 0.260 and can be purchased in either 10 piece packs of 12.75" long pieces, or 25 or 100-foot reels. Use Spring-Fast BAP and SL series for flanged lightning holes and three-axis contours. The BAP Series Flexi-Grommet is perfect for roll formed edges and small lightening holes. Where wires routed in the same plain as the sheet metal, the Spring-Fast SL Series is just right and provides a trim characteristic for all edges with or without cabling nearby.

To make installation easier consider these tools. All Spring-Fast series products are easy to fabricate to length utilizing the DTI Shears P/N 05-04446. In addition, for repetitive cutting tasks the PSA backed Mylar Grommet Scale P/N 05-04448 mounts on most table top surfaces. For grommet installation in tight or repetitive areas, the Roller installation tool (pictured to the right) P/N 05-04449 is just the thing.

Spring-Fast is used in a wide variety of aviation and aerospace applications:

- Lightening Holes
- Wing Sections
- Seating
- Intercostals
- Fuselage
- Avionics
- Tail Sections
- Tactical Satellite Emulators
- Ferrules
- Navigation Systems
- Electrical Power Centers
- Racks
- IFE (In-Flight Entertainment)
- Bulkheads
- Ground Control
- Air Traffic Control
- EAU (Electrical Avionic Units)
- PSU (Personal Safety Units)
- APU (Auxiliary Power Units)

| MFG Number | Sheet Thickness | Package Size | Our P/N | Price Ea. |
|------------------|-----------------|--------------|----------|-----------|
| M22529/2-1R | .025-.036 | Per Foot | 05-00673 | . |
| M22529/2-1R-10PK | .025-.036 | 10pcs/12.75" | 05-00674 | . |
| M22529/2-2R | .036-.063 | Per Foot | 05-00675 | . |
| M22529/2-2R-10PK | .036-.063 | 10pcs/12.75" | 05-00676 | . |
| M22529/2-3R | .059-.074 | Per Foot | 05-00677 | . |
| M22529/2-3R-10PK | .059-.074 | 10pcs/12.75" | 05-00678 | . |
| M22529/2-4R | .070-.093 | Per Foot | 05-00679 | . |
| M22529/2-4R-10PK | .070-.093 | 10pcs/12.75" | 05-00680 | . |
| M22529/2-5R | .090-.111 | Per Foot | 05-00681 | . |
| M22529/2-5R-10PK | .090-.111 | 10pcs/12.75" | 05-00682 | . |
| M22529/2-6R | .105-.134 | Per Foot | 05-00683 | . |
| M22529/2-6R-10PK | .105-.134 | 10pcs/12.75" | 05-00684 | . |
| M22529/2-7R | .178-.198 | Per Foot | 05-00685 | . |
| M22529/2-7R-10PK | .178-.198 | 10pcs/12.75" | 05-00687 | . |
| M22529/2-8R | .240-.260 | Per Foot | 05-00688 | . |
| M22529/2-8R-10PK | .240-.260 | 10pcs/12.75" | 05-00690 | . |

| Accessories | Part No. | Price |
|-------------------------------|----------|-------|
| DTI Shears 830 PS | 05-04446 | . |
| Grommet Scale 860GSB | 05-04448 | . |
| Roller Installation Tool 840R | 05-04449 | . |

25ft. rolls are 20% discount off per foot prices



SPECIAL SPRING-FAST FULL BYPASS CUT-OFF SHEARS

P/N 05-00689.....

AP

CONTROL SYSTEM SUPPLIES



AN100 CABLE THIMBLES

Made of cadmium plated steel or stainless steel per procurement specification MIL T-5677. Used to form sturdy eye end on control cable. Form cable around thimble and secure with Nicopress sleeve.

| Cadmium Plated Steel Thimbles | | | Cable Size | Stainless Steel Thimbles | | |
|-------------------------------|------------|---------------|-------------|--------------------------|------------|---------------|
| AN Part No. | Price Each | Price Per 100 | | AN Part No. | Price Each | Price Per 100 |
| AN100-3 | . | . | 1/16" | AN100C-3 | . | . |
| AN100-4 | . | . | 3/32", 1/8" | AN100C-4 | . | . |
| AN100-5 | . | . | 5/32" | AN100C-5 | . | . |
| AN100-6 | . | . | 3/16" | AN100C-6 | . | . |
| AN100-7 | --- | --- | 7/32" | AN100C-7 | --- | --- |
| AN100-8 | . | . | 1/4" | AN100C-8 | . | . |
| AN100-12 | . | . | 3/8" | AN100C-12 | . | . |



AN111 CABLE BUSHINGS

Made of cadmium plated steel. Used in same manner as AN100 cable thimble.

| Dash No. | Cable Size | Price Ea. |
|----------|--------------|-----------|
| -3 | 1/16", 3/32" | . |
| -4 | 1/8" | . |
| -5 | 5/32" | . |
| -6 | 3/16" | . |

Less 20% for 100

AN115 CABLE SHACKLES



Made of cadmium plated forged steel per specification MIL-S-5675.

| AN 115 Dash No. | Shackle Strength Lbs. | Cable Size | Used With | | Price Each |
|-----------------|-----------------------|-------------|-----------|------------|------------|
| | | | Thimble | Clevis Pin | |
| -8 | 800 | 1/16" | AN100-3 | AN393-9 | . |
| -21* | 2100 | 3/32", 1/8" | AN100-4 | AN393-11 | . |
| -32 | 3200 | 5/32" | AN100-5 | AN394-15 | . |
| -46 | 4600 | 3/16" | AN100-6 | AN395-17 | . |
| -61 | 6100 | 7/32" | AN100-7 | AN396-19 | . |

*Replaces AN115 - 16.

DISCOUNT: Less 10% for 12, 15% for 25, 20% for 50 or more. May be assorted.

WIRE ROPE SLEEVES (MS51844)



Oval shaped copper sleeves used in making eye or lap splices in flexible cable. Sleeves are slipped over the two strands of cable to be fastened and are then compressed with special Nicopress hand squeezers. Provides a bond that is even stronger than a standard splice. "18" Series sleeves are plain copper and "28" Series sleeves are zinc plated.

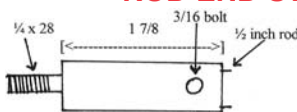
| Part No | Nicopress Ref. | Cable Dia. | Matl./Finish | Price | |
|------------|----------------|------------|--------------|-------|-----|
| | | | | Each | 100 |
| MS51844-42 | 18-1-C | 1/16" | Copper/Plain | . | . |
| MS51844-43 | 18-2-G | 3/32" | Copper/Plain | . | . |
| MS51844-44 | 18-3-M | 1/8" | Copper/Plain | . | . |
| MS51844-45 | 18-4-P | 5/32" | Copper/Plain | . | . |
| MS51844-46 | 18-6-X | 3/16" | Copper/Plain | . | . |
| MS51844-22 | 28-1-C | 1/16" | Copper/Zinc | . | . |
| MS51844-23 | 28-2-G | 3/32" | Copper/Zinc | . | . |
| MS51844-24 | 28-3-M | 1/8" | Copper/Zinc | . | . |
| MS51844-25 | 28-4-P | 5/32" | Copper/Zinc | . | . |
| MS51844-26 | 28-6-X | 3/16" | Copper/Zinc | . | . |

STOP SLEEVES

These copper stop sleeves are used on the ends of bare cables.

| Cable Dia. | Model No. | Part No. | Price Ea. |
|------------|-----------|----------|-----------|
| 1/16" | ST2-2 | 04-00899 | . |
| 3/32" | ST2-3 | 04-00901 | . |
| 1/8" | ST2-4 | 04-00902 | . |
| 5/32" | ST2-5 | 04-00903 | . |

ROD END SWIVEL BEARING



Permanently lubricated in-line swivel for rod end bearing or clevis fork. For applications where rod needs to swivel in a rotary motion to reduce binding while maintaining a straight line to control or stabilizer rod. For use on 1/2" rod and will fit 1/4" x 28 female rod end or clevis fork.

P/N 05-01021.....



P/N MS27976-1

AN481 CLEVIS FORK ROD ENDS (MS27976)

Manufactured of 1035 or 1042 carbon steel and cadmium plated. Minimum tensile strength 65,000 PSI. For welding to steel tubing or riveting to aluminum tubing. All sizes fit inside of 3/8" O.D. x .035 wall steel tubing.

| Current Part No. | Old Part No. | Clevis Pin Hole Dia. | Fork Width | | Price Each |
|------------------|--------------|----------------------|------------|--------|------------|
| | | | Overall | Inside | |
| MS27976-1 | AN481-1P | 1/4" | 1/2" | 17/64" | . |
| MS27976-2 | AN481-2P | 1/4" | 5/16" | 9/64" | . |
| MS27976-3 | AN481-3P | 3/16" | 1/2" | 17/64" | . |
| MS27976-4 | AN481-4P | 3/16" | 5/16" | 9/64" | . |



AN486 THREADED CLEVIS FORK ROD ENDS (MS27975)

These rods ends are machined from 1035 or 1042 carbon steel and cadmium plated. Minimum tensile strength 65,000 PSI. They are internally threaded 1/4"-28 to fit threaded 1/4" dia. rod. Used for engine controls. For experimental aircraft only.

| Current Part No. | Old Part No. | Clevis Pin Hole Dia. | Fork Width | | Price Each |
|------------------|--------------|----------------------|------------|--------|------------|
| | | | Overall | Inside | |
| MS27975-1 | AN486-1P | 1/4" | 1/2" | 17/64" | . |
| MS27975-2 | AN486-2P | 1/4" | 5/16" | 9/64" | . |
| MS27975-3 | AN486-3P | 3/16" | 1/2" | 17/64" | . |
| MS27975-4 | AN486-4P | 3/16" | 5/16" | 9/64" | . |
| AN486-1032 | Special | 3/16" | 7/16" | 3/16" | . |

AN490 THREADED ROD ENDS

Manufactured of 4130 steel, heat-treated and cadmium plated. Minimum tensile strength 125,000 PSI. For welding to steel tubing or riveting to aluminum tubing.



PN AN490HT-16P

| Part Number | Thread Size | Used With Tube Size | Price Each |
|-------------|-------------|---------------------|------------|
| AN490HT5P | 1/4-28 | 5/16"x.035 | . |
| AN490HT6P | 1/4-28 | 3/8"x.035 | . |
| AN490HT8P | 1/4-28 | 1/2"x.035 | . |
| AN490HT10P | 5/16-24 | 5/8"x.035 | . |
| AN490HT11P | 5/16-24 | 3/4"x.035 | . |
| AN490HT14P | 3/8-24 | 3/4" x .035 | . |
| AN490HT15P | 5/16-24 | 1/2"x.058 | . |
| AN490HT16P | 3/8-24 | 1/2"x.058 | . |



AN665 THREADED CLEVIS TIE ROD TERMINALS

These cadmium plated steel terminals are manufactured to "AN" specifications, with either right-hand or left-hand threads. Example: P/N AN665-10L has a 6-40 lefthand thread. AN665-34R has a 1/4-28 right-hand thread. Order terminal "assemblies" if locknut, clevis pin, and cotter pin are required along with terminal. Otherwise, only terminals are supplied.

| Dash No. | Right Hand | Left Hand | Thrd. Size | Fork Pin Hole Dia. | Inside Width | Sgth. (Lbs.) | AN665 Rt. | AN665 Lt. |
|----------|------------|-----------|------------|--------------------|--------------|--------------|----------------|----------------|
| | | | | | | | only Price Ea. | only Price Ea. |
| -10R | -10L | 6-40 | .190" | .109" | 1200 | . | . | |
| -21R | -21L | 10-32 | .190" | .150" | 2400 | . | . | |
| -34R | -34L | 1/4-28 | .250" | .203" | 4200 | . | . | |
| -46R | -46L | 5/16-24 | .313" | .203" | 4600 | . | . | |
| -61R | -61L | 5/16-24 | .375" | .203" | 6900 | . | . | |
| -80R | -80L | 3/8-24 | .375" | .266" | 10000 | . | . | |

AN665 TERMINAL ASSEMBLIES

These terminal assemblies include the AN665 terminals plus the appropriate lock nut, clevis pin, and cotter pin.

| Description | Part No. | Price | Description | Part No. | Price |
|-------------|----------|-------|-------------|----------|-------|
| AN665-10R | 05-02300 | . | AN665-10L | 05-02400 | . |
| AN665-21R | 05-02500 | . | AN665-21L | 05-02600 | . |
| AN665-34R | 05-02700 | . | AN665-34L | 05-02800 | . |
| AN665-46R | 05-02900 | . | AN665-46L | 05-03000 | . |
| AN665-61R | 05-03100 | . | AN665-61L | 05-03200 | . |
| AN665-80R | 05-03300 | . | AN665-80L | 05-03400 | . |

CABLE TERMINALS

The finest and best means of attaching fittings to cable. Properly swaged to the cable, these terminals will maintain the minimum rated breaking strength of that cable. These terminals are made of stainless steel alloy having the best swaging and corrosion resistant properties and have a polished finish.



**SA110
PLAIN BALL**

| Dash No. | Cable Dia. | Sphere Dia. | Breaking Strength Lbs. | Price |
|----------|------------|-------------|------------------------|-------|
| 2 | 1/16 | .188 | 380 | . |
| 3 | 3/32 | .250 | 730 | . |
| 4 | 1/8 | .315 | 1050 | . |



**MS20664C
BALL & SINGLE
SHANK**

| Dash No. | Cable Dia. | Sphere Dia. after Swage | Breaking Strength Lbs. | Price |
|----------|------------|-------------------------|------------------------|-------|
| 2 | 1/16 | .190 | 480 | . |
| 3 | 3/32 | .253 | 920 | . |
| 4 | 1/8 | .315 | 2000 | . |
| 5 | 5/32 | .379 | 2800 | . |
| 6 | 3/16 | .442 | 4200 | . |



**MS20663C
BALL &
DOUBLE
SHANK**

| Dash No. | Cable Dia. | Sphere Dia. after Swage | Breaking Strength Lbs. | Price |
|----------|------------|-------------------------|------------------------|-------|
| 2 | 1/16 | .190 | 480 | . |
| 3 | 3/32 | .253 | 920 | . |
| 4 | 1/8 | .315 | 2000 | . |
| 5 | 5/32 | .379 | 2800 | . |
| 6 | 3/16 | .442 | 4200 | . |

MS20667 FORK END



PN-MS20667-2

| Dash No. | Cable Dia. | Breaking Strength Lbs. | Pin Hole Dia. | Fork Width "G" | Price |
|----------|------------|------------------------|---------------|----------------|-------|
| 2 | 1/16 | 480 | .190 | .093 | . |
| 3 | 3/32 | 920 | .190 | .108 | . |
| 4 | 1/8 | 2000 | .190 | .195 | . |
| 5 | 5/32 | 2800 | .250 | .202 | . |
| 6 | 3/16 | 4200 | .313 | .260 | . |

MS20668 EYE END



| Dash No. | Cable Dia. | Breaking Strength Lbs. | Pin Hole Dia. | Eye End Width "J" | Price |
|----------|------------|------------------------|---------------|-------------------|-------|
| 2 | 1/16 | 480 | .190 | .088 | . |
| 3 | 3/32 | 920 | .190 | .103 | . |
| 4 | 1/8 | 2000 | .190 | .190 | . |
| 5 | 5/32 | 2800 | .250 | .197 | . |
| 6 | 3/16 | 4200 | .313 | .255 | . |

MS21259 STUD END



| Dash No. | Cable Dia. | Breaking Strength Lbs. | Thread Size NF-3 | Price |
|----------|------------|------------------------|------------------|-------|
| 2 | 1/16 | 480 | 6-40 | . |
| 3 | 3/32 | 920 | 10-32 | . |
| 4 | 1/8 | 2000 | 1/4-28 | . |
| 5 | 5/32 | 2800 | 1/4-28 | . |
| 6 | 3/16 | 4200 | 5/16-24 | . |

Add "RH" or "LH" after dash numbers for right or left hand threads

MS21260 TURNBUCKLE END



S=Short
L=Long

| Dash No. Short | Price Each | Dash No. Long | Price Each | Cable Dia. | Thread Size | Min. Breaking Strength (lbs) |
|----------------|------------|---------------|------------|------------|-------------|------------------------------|
| -S2RH | . | -L2RH | . | 1/16" | 6-40 | 480 |
| -S2LH | . | -L2LH | . | | | |
| -S3RH | . | -L3RH | . | 3/32" | 10-32 | 920 |
| -S3LH | . | -L3LH | . | | | |
| -S4RH | . | -L4RH | . | 1/8" | 1/4-28 | 2000 |
| -S4LH | . | -L4LH | . | | | |
| -S5RH | . | -L5RH | . | 5/32" | 1/4-28 | 2800 |
| -S5LH | . | -L5LH | . | | | |
| -S6RH | . | -L6RH | . | 3/16" | 5/16-24 | 4200 |
| -S6LH | . | -L6LH | . | | | |



**SA361 EYE END &
SA362 FORK END**

| Part No. | Cable | Hole Dia. | Width | Price |
|----------|-------|-----------|-------|-------|
| SA361-2 | 1/16 | .188 | .088 | . |
| SA361-3 | 3/32 | .188 | .103 | . |
| SA361-4 | 1/8 | .188 | .190 | . |
| SA362-2 | 1/16 | .188 | .093 | . |
| SA362-3 | 3/32 | .188 | .108 | . |
| SA362-4 | 1/8 | .188 | .195 | . |

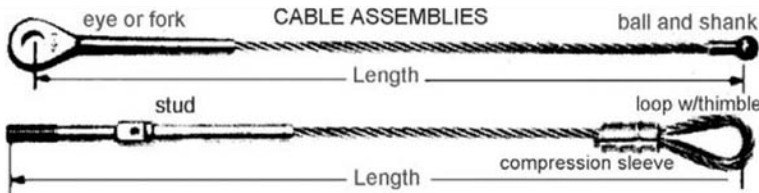
* Universally replaces the canceled AN669 & NAS650 parts identified by the same dash no.

* AN100 thimble not included.

** For short barrels listed above. Use two per assembly.

Discounts:
All Items This Section:
Less 10% For 12 Ea. 15% On 50 Or More (Per Size)

CUSTOM-MADE CABLE ASSEMBLIES



Measure eye and fork terminals from center of pin holes. Measure ball fittings from center of ball. Measure stud terminals from end of terminal. Measure loop with thimble from surface of thimble.

SEE "TOOLS" SECTION FOR KEARNEY PORTABLE SWAGER. CUSTOM-MADE CABLE ASSEMBLIES ARE SPECIAL ORDER AND NON-RETURNABLE

The terminals featured on this page must be installed with a rotary swaging tool, which is too costly for purchase by a homebuilder or small shop. We offer swaging service and custom-made cable assemblies in cable sizes of 1/16" to 5/32" diameter.

Select the cable fittings of your choice, specify cable size, cable construction, stainless steel or galvanized cable and length. Measure length of cable assembly as shown in the illustration. We will furnish complete cable assembly ready for installation. A simple drawing of the assembly required is appreciated and will expedite shipment.

The cost of custom-made cable assembly is base charge (up to 10 ft. - \$10.00, 10 to 20 ft. - \$15.00, over 20 ft. - \$20.00), plus the cost of selected fittings and cable plus swages at \$6.95 each. For cable assemblies requiring a third swage, such as an assembly with two end fittings plus a ball swaged at some point on the cable, add \$6.95 plus cost of the ball.

Example: The cost of a 10 ft. long cable assembly using 1/8" 7 x 19 galvanized cable, an MS20667-4 fork end and an MS21259-4RH stud end is 10 x .ft. for cable plus . and . for the fittings plus \$6.95 per swage + \$10.00 setup = \$41.15 total cost. For added MS20663C-4 ball add \$6.95 for swage plus . for ball.

Swaging Service - For cable assemblies requiring swaged fitting on one end only. \$6.95/swage plus cost of cable, fittings, and the base charges as described above.

Nicopress Swages - Performed for \$4.95/Swage plus cost of Nicopress sleeve and the base charges described above.

TOLERANCE - ±1/8"

CABLE – FORKS – PUSHROD FITTINGS

CONTROL CABLE

7 x 7 7 x 19 1 x 19



| Cable Dia. (In.) | Con-Struc-tion | Breaking Strength (Lbs.) | | Part Number | | Price/Ft. | |
|------------------|----------------|--------------------------|-----------|-------------|-----------|-------------|------------|
| | | Galva-nized | Stainless | Galva-nized | Stainless | Galva-nized | Stain-less |
| 1/16 | 7x7 | 480 | 480 | 05-03600 | 05-03500 | . | . |
| 3/32 | 7x7 | 920 | 920 | 05-03800 | 05-03700 | . | . |
| 3/32 | 7x19 | 1000 | 920 | 05-04000 | 05-03900 | . | . |
| 1/8 | 1x19 | 2100 | 2100 | 05-04200 | 05-04100 | . | . |
| 1/8 | 7x19 | 2000 | 1760 | 05-04400 | 05-04300 | . | . |
| 5/32 | 1x19 | 3300 | 3300 | 05-04600 | 05-04500 | . | . |
| 5/32 | 7x19 | 2800 | 2400 | 05-04800 | 05-04700 | . | . |
| 3/16 | 7x19 | 4200 | 3700 | 05-05000 | 05-04900 | . | . |
| 1/4 | 7x19 | 7000 | 6400 | 05-05200 | 05-05100 | . | . |

CABLE SPECIFICATIONS

Galvanized - MIL-DTL-83420 replaces MIL-2-83420
Stainless - MIL-DTL-83420 replaces both Galvanized & Stainless

CONTROL CABLE SPECIFICATIONS

• **7 X 7 FLEXIBLE CONTROL CABLE** - Has seven strands of seven wires each. Used for control purposes where extreme flexibility is not required but where abrasion is a factor.

• **7 X 19 FLEXIBLE CONTROL CABLE** - Has seven strands of 19 wires each. Its greater metallic area makes it stronger than 7 x 7 cable. Because of its fine wires the best service is obtained where abrasion is not too severe. These same wires, however, make it flexible to meet severe bending.

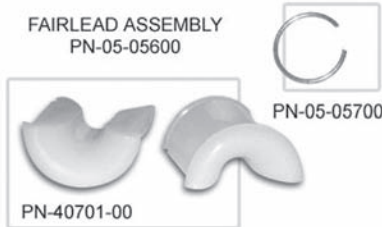
• **1 X 19 NON-FLEXIBLE CABLE** - Is one strand of 19 wires. It has more metallic area than 7 x 7 or 7 x 19 constructions which makes it the strongest but also the least flexible. 1 x 19 is generally used for bracing purposes, drag and anti-drag wires. It is often used with swage type terminals.

• The major difference between aircraft and commercial cable is the lubrication applied to aircraft cable, which provides substantially better fatigue life than non-lubricated commercial cable. Aircraft cable requires extensive extra testing, documentation, certification to meet military specifications. Aircraft Spruce obtains its aircraft cable from domestic sources and the cable is certified to MIL Spec MIL, W-83420 and QPL Certified.

AP

CABLE FAIRLEADS

Nylon construction for external use. Two halves with retaining clip.



Less 15% for 12 or more
 3/4" O.D. x 3/4" L P/N 05-05500 **Set**
 3/4" O.D. x 1" L P/N 05-05600 **Set**
 Clips Only P/N 05-05700 **Ea.**

SEE TOOL SECTION FOR CABLE TENSIMETERS

WING STRUT ADJUSTMENT FORK & BARREL SETS



Forks have 7/16 x 20 male threads and mate with an internally threaded steel barrel which is welded into strut allowing adjustment as required. Barrel has 7/16 x 20 undersize thread to permit retaping after welding. All forks have rolled threads and 100% magnafluxed. FAA Approved.

Barrels P/N 05-05900 **ea**
 Forks w/ 5/16" dia. hole (equivalent to Piper P/N 13770-00) **ea**
 P/N 05-06000 **ea**
 Use AN25-14 clevis bolt **ea**
 Forks with 3/8" dia. hole (equivalent to Piper P/N 14481-00) **ea**
 P/N 05-06100 **ea**

WIRE SWIVELS

| OD | ID | Length | Conduit | Part No. |
|-------------|-------------|--------|---------|----------|
| .437 x .312 | .225 x .100 | 3/4 | 3/16 | 2361 |

P/N 06-01282.....

CONDUIT RETAINER - STRAIGHT

| OD | ID | Length | Conduit | Part No. |
|---------|------|--------|---------|----------|
| 5/16-24 | .260 | 2 | 7/32 | 2386 |

P/N 06-01281.....

ASSORTED SPRINGS

| Spring | Part No. | Application | Spring Type | Length | Price ea. |
|-----------------------|----------|-------------|-------------|---------|-----------|
| Century Spring #186-C | 01-27200 | VariEze | Tension | 2" | . |
| Rudder Return Spring | 01-27300 | " | Tension | 4 1/2" | . |
| Landing Brake | 01-27600 | VE/Long-EZ | Tension | 10" | . |
| Tension Spring* | 01-37500 | " | Tension | 30" | . |
| Landing Brake | 01-27900 | Cozy | Tension | 12 1/2" | . |

FLIGHT CONTROL CABLES

These FAA-PMA approved cable assemblies are available in stainless or galvanized cable and are constructed of highest quality U.S. made materials. All components are fully traceable and each assembly is load tested and length stabilized. Over 2000 cable assemblies in stock. Custom cable assemblies can be fabricated to your specification.

- **AS0510105** Series for Cessna 170, 172, 180, 182, and 185
- **AS0400107** Series for Cessna 150, and 152
- **AS1660300** Series for Cessna 188
- **AS62701** Series for Piper PA28, PA32, and PA34
- **ACA** Series for Schweizer G-164

Call the Cessna/Piper parts specialist at 1-877-4SPRUCE with your Cessna or Piper cable assembly part number for pricing or for assistance in determining the part number you require for your aircraft.

PUSHROD THREADED END FITTING



Fits 5/8" diameter pushrods. 1/4 - 28 threaded hole. Secure to aluminum pushrod with two cross riveted or bolted fasteners. Made from 6061-T6 5/8" diameter x 1-5/8" long rod. Two sizes available.
 Fits: 5/8" x .049" tube P/N 05-01140
 Fits: 5/8" x .058" tube P/N 05-01150

PUSHROD BALL ROLLER GUIDES



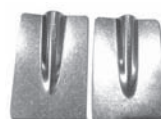
Provides almost frictionless push - pull and rotary movement of aileron and elevator push rods. Design is similar to that used in German sailplanes. Unit contains four nylon roller balls and provides 3.5" pushrod travel. Aluminum case size, 1.25" x 3.0" long. Fits 5/8" diameter pushrods..... P/N 05-01110 **ea.**

PUSHROD FORKED END FITTING



Fits 5/8" diameter pushrods. 3/16" pivot hole with .090" wide slot for bellcrank. Secure to aluminum pushrod with two cross riveted or bolted fasteners. Made from 6061-T6 5/8" diameter x 2-3/8" long rod. Two sizes available.
 Fits: 5/8" x .049" tube P/N 05-01120 **ea.**
 Fits: 5/8" x .058" tube P/N 05-01130 **ea.**

RUDDER CABLE FAIRING SETS FOR RV'S



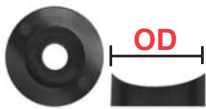
Pre-formed .025" thick aluminum fairings for rudder cable exit on RV fuselages. (None are supplied with the RV kits). Set contains (2) identical fairings - 1 for use on cables and 1 spare (could be used on elevator trim). Each will require some trimming to fit before riveting. P/N 12-00635.....

BOWDEN CABLE INNER WIRE



Stainless stainless steel wire .078" diameter. Sold by the foot. P/N 05-15510.....

SADDLES - FITTINGS - TANGS - BRACKETS



SUPER-TOUGH STANDOFF SADDLES - TYPE II

| P/N | Max Air # | Fits | O.D. | Hole | HT | Price |
|----------|-----------|-------|-------|------|------|-------|
| 05-02052 | S01-14 | 1.000 | 1.000 | .266 | .188 | . |
| 05-02055 | S01-24 | 1.500 | 1.000 | .266 | .188 | . |
| 05-02056 | S01-84 | 1.625 | 1.000 | .266 | .188 | . |
| 04-00922 | S01-44 | 1.750 | 1.000 | .266 | .188 | . |
| 05-02060 | S01-74 | 1.875 | 1.000 | .266 | .188 | . |
| 05-02062 | S01-94 | 2.000 | 1.000 | .266 | .188 | . |
| 05-02064 | S04-94 | 2.000 | 1.000 | .266 | .440 | . |



ULTRALIGHT SADDLES

SUPER-TOUGH SADDLES - TYPE I

| P/N | Max Air # | Fits | OD | Hole | HT | Price |
|-------|-----------|-------|-------|------|------|-------|
| S4436 | --- | .875 | 0.875 | .260 | .125 | . |
| S4352 | --- | 1.00 | 1.00 | .260 | .125 | . |
| S4350 | --- | 1.00 | 1.00 | .340 | .125 | . |
| S4353 | --- | 1.00 | 1.00 | .260 | .250 | . |
| S4326 | --- | 1.125 | 1.00 | .260 | .125 | . |

SUPER-TOUGH SADDLES - TYPE II

| P/N | Max Air # | Fits | OD | Hole | HT | Each |
|-------|-----------|-------|-------|------|------|------|
| S4451 | S-24 | 1.500 | 1.375 | .266 | .188 | . |
| S4453 | S-84 | 1.625 | 1.375 | .266 | .188 | . |
| S4456 | S-44 | 1.750 | 1.375 | .266 | .188 | . |
| S4459 | S-74 | 1.875 | 1.375 | .266 | .188 | . |
| S4460 | S-74 | 1.875 | 1.375 | .320 | .188 | . |
| S4462 | S-94 | 2.000 | 1.375 | .266 | .188 | . |
| S4482 | S-94 | 1.750 | 1.000 | .320 | .188 | . |

ALUMINUM SADDLES

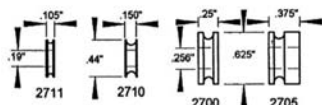
| P/N-Type | Our P/N | Fits | Base OD | Hole | Height | Price |
|----------|----------|------|---------|------|--------|-------|
| 4300/I | 04-00923 | 1.00 | 1.00 | .266 | .125 | . |
| 4327/I | 04-00924 | 1.13 | 1.00 | .266 | .125 | . |
| 4328/I | 04-00925 | 1.25 | 1.00 | .266 | .125 | . |
| 4310/II | 04-00926 | 1.50 | 1.00 | .266 | .250 | . |
| 4315/II | 04-00927 | 1.63 | 1.00 | .266 | .125 | . |
| 4320/III | 04-00928 | 1.63 | 1.50 | .378 | .125 | . |
| 4325/II | 04-00929 | 1.88 | 1.00 | .266 | .125 | . |
| 4329/I | 04-00930 | 2.00 | 1.00 | .266 | .125 | . |

TUBE CONNECTORS - NYLON



Fits 1 x .049 Tube P/N 05-02096
 Fits 3/4 x .049 Tube P/N 05-02095
 Fits 1 x .049 (Maxair TC-1) P/N 05-02097

CABLE FITTINGS



1/16" Cable, Steel, AN111-3
 P/N CF2710
 3/32" Cable, Aluminum
 P/N CF2700
 3/32" Cable, Aluminum
 P/N CF2705
 1/16" Cable, Stainless, AN111C-3... P/N CF2710S

REAR SPAR CONTOUR FITTING

Maxair#WT262, Contour
 P/N 05-01936



POLY TIP RIB END FITTING

Maxair#PT-1
 Poly Tip P/N 05-01932

THREADED INSERTS

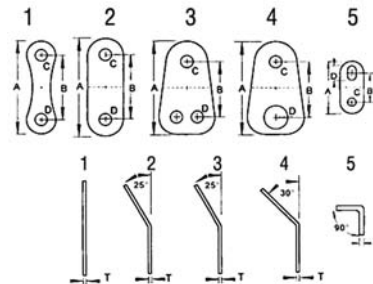
Inserts into tube connector (1" x .049 wall). 7/16" dia. Cross hole
 3/16" Cad2 Type 2 Yellow Chromate. P/N 05-02071

NYLON WASHERS

| Model | P/N | O.D. | I.D. | Tkns | Each |
|--------|----------|-------|------|------|------|
| NW2061 | 05-01971 | 1.000 | .256 | .125 | . |
| NW2059 | 05-01970 | .875 | .256 | .031 | . |
| NW2045 | 05-01968 | .875 | .256 | .062 | . |
| NW1540 | 05-01967 | .440 | .190 | .062 | . |
| NWPW-3 | 05-01972 | .625 | .190 | .062 | . |
| NWPW-4 | 05-01973 | .625 | .250 | .062 | . |

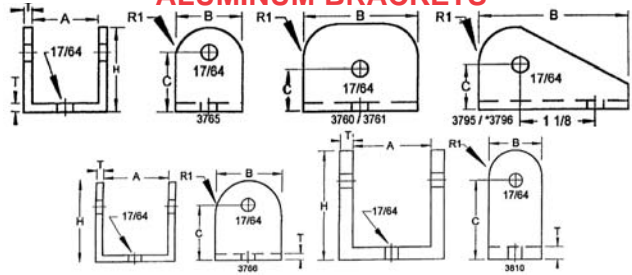
TANGS

Made of 304 stainless steel. All measurements are in inches.



| No. | Maxair | Description | T | A | B | C | D | Part No. | Price |
|-----|---------|-------------|-----|------|------|------|-----|----------|-------|
| 1 | T12-HT4 | Figure 8 | 14G | 2.0 | 1.38 | .26 | .26 | 05-02076 | . |
| | -- | 2-Hole Flat | 16G | 2.0 | 1.25 | .26 | .26 | 05-02072 | . |
| | -- | 2-Hole Flat | 13G | 2.0 | 1.25 | .26 | .26 | 05-02073 | . |
| 2 | T2-FLAT | 2-Hole Bent | 13G | 2.0 | 1.24 | .26 | .26 | 05-02074 | . |
| | -- | 2-Hole Bent | 12G | 2.0 | 1.24 | .26 | .26 | 05-02075 | . |
| | | 3-Hole Flat | 14G | 1.91 | 1.09 | .26 | .26 | 05-02077 | . |
| 3 | T8-DFT | 3-Hole Flat | 12G | 1.91 | 1.09 | .32 | .26 | 05-02078 | . |
| | | 3-Hole Bent | 14G | 1.86 | 1.04 | .26 | .26 | 05-02079 | . |
| | | 3-Hole Bent | 12G | 1.86 | 1.04 | .32 | .26 | 05-02080 | . |
| 4 | -- | Anchor Tang | 14G | 1.91 | 1.19 | .26 | .50 | 05-02081 | . |
| 5 | -- | SS EYE Bent | 13G | 1.13 | .563 | .188 | --- | 05-04371 | . |

ALUMINUM BRACKETS



| Model | Part No. | A | B | C | H | T | R1 | ALLOY | Each |
|-------|----------|-------|-------|-------|-------|------|------|---------|------|
| B3772 | 05-01930 | .500 | .750 | .500 | .750 | .125 | --- | 6061-T6 | . |
| B3765 | 05-01928 | 1.000 | 1.000 | .875 | 1.250 | .125 | .500 | 6063-T5 | . |
| B3760 | 05-01926 | 1.000 | 1.750 | .625 | 1.250 | .125 | .500 | 6063-T5 | . |
| B3761 | 05-01927 | 1.000 | 1.750 | .906 | 1.250 | .125 | .750 | 6063-T5 | . |
| B3795 | --- | 1.000 | 2.250 | .670 | 1.250 | .125 | .500 | 6063-T5 | -- |
| B3766 | 05-01929 | 1.250 | 1.250 | 1.062 | 1.500 | .125 | .750 | 6063-T5 | . |
| B3796 | --- | 1.250 | 2.375 | .875 | 1.500 | .125 | .500 | 6063-T5 | -- |
| B3810 | 05-01931 | 1.500 | 1.000 | 1.500 | 2.000 | .250 | .500 | 6061-T6 | . |



STAINLESS STEEL BRACKETS

| Fits | Model No. | Part No. | Price |
|------------------|-----------|----------|-------|
| 1.000" Tub | B3740 | 05-01922 | . |
| 1.125" Tube | B3742 | 05-01923 | . |
| Fits 1.250" Tube | B3744 | 05-01924 | . |
| Fits 1.375" Tube | B3746 | 05-01925 | . |



PLASTIC ID TUBE CAPS

| Model | Part No. | Fits Tube Size | Maxair | Each |
|--------|----------|----------------|---------|------|
| TC4116 | 05-02093 | 1-1/2 x .083 | --- | . |
| TC4115 | 05-02092 | 1-1/2 x .049 | EC-6 | . |
| TC4100 | 05-02088 | 1-1/8 x .058 | EC-4 | . |
| TC4080 | 04-00158 | 3/4" universal | 14-209A | . |
| TC4095 | 05-02084 | 1 x .083 | EC-3 | . |
| TC4096 | 05-02085 | 1 x .058 | EC-1 | . |
| TC4098 | 05-02087 | 1 x .049 | EC-1 | . |
| TC4092 | 05-02083 | 7/8 x .049 | EC-78 | . |
| TC4090 | 05-02082 | 5/8 x .058 | --- | . |
| TC4097 | 05-02086 | 1 x .065 | EC-2 | . |
| TC4106 | 05-02089 | 1-5/8 x .049 | EC-7 | . |
| TC4110 | 05-02090 | 1-3/4 x .049 | EC-8 | . |
| TC4112 | 05-02091 | 2 x .049 | EC-10 | . |

CONTROL CABLE FAIRINGS

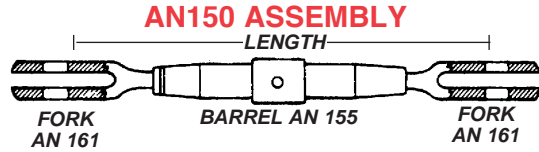
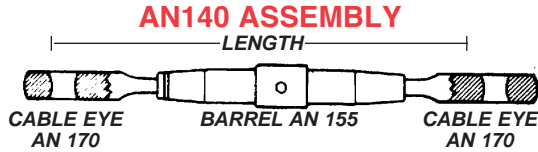
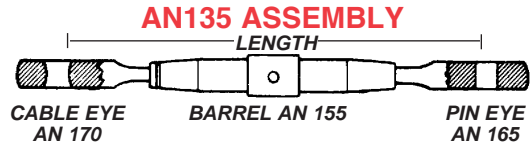
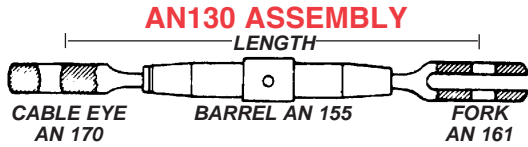
Injection molded ABS plastic fairings used to cover hole in airframe where control cables emerge such as the rudder cables at the rear of the fuselage. May be installed on any airframe surface but is most normally used on fabric covered aircraft where they are bonded on with fabric cement and covered with a fabric patch.
 P/N 05-05750 pair

AP

TURNBUCKLE COMPONENTS

TURNBUCKLES COMPLETE ASSEMBLIES

Complete turnbuckle assemblies consist of a brass barrel and two steel ends, one with right-hand thread and the other with left-hand thread. Order by proper AN number and add dash number and a letter to indicate length and strength required.



AN 146 Assembly consists of 1 - AN 155 barrel, 1-AN161 Fork and 1 MS21260 Turnbuckle End.

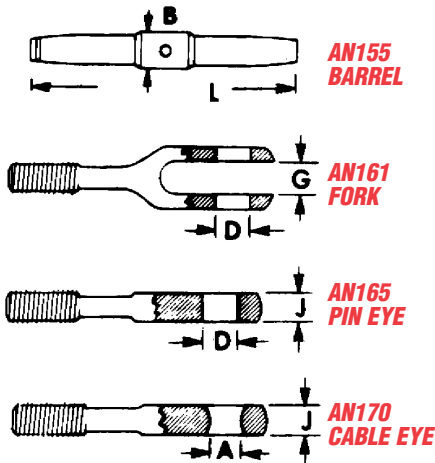
| Dash No. | LENGTH (inches)* | | | | Strength (pounds) | PRICE (complete assembly)** | | | |
|----------|------------------|---------|-------|---------|-------------------|-----------------------------|-------|-------|-------|
| | AN130 | AN135 | AN140 | AN150 | | AN130 | AN135 | AN140 | AN150 |
| -8S | 4-1/2 | 4-1/2 | 4-1/2 | 4-1/2 | 800 | | | | |
| -16S | 4-1/2 | 4-1/2 | 4-1/2 | 4-1/2 | 1600 | | | | |
| -16L | 8 | 8 | 8 | 8 | 1600 | | | | |
| -22S | 4-17/32 | 4-17/32 | 4-1/2 | 4-17/32 | 2200 | | | | |
| -22L | 8-1/32 | 8-1/32 | 8 | 8-1/32 | 2200 | | | | |
| -32S | 4-19/32 | 4-19/32 | 4-1/2 | 4-19/32 | 3200 | | | | |
| -32L | 8-7/64 | 8-7/64 | 8 | 8-7/64 | 3200 | | | | |
| -46S | 4-21/32 | 4-21/32 | 4-1/2 | 4-21/32 | 4600 | | | | |
| -46L | 8-5/32 | 8-5/32 | 8 | 8-5/32 | 4600 | | | | |
| -61L | 8-9/32 | 8-9/32 | 8 | 8-9/32 | 6100 | | | | |
| -80L | 8-5/16 | 8-5/16 | 8 | 8-5/16 | 8000 | --- | --- | --- | |

*Length measured with threads flush with ends of barrel.
**Less 10% for 6 or more assemblies, 15% for 12 or more assemblies. May be assorted.

AP

TURNBUCKLE PARTS DIMENSIONS

The "R" or "L" following the dash number designates "right" or "Left." The "S" or "L" (2nd letter following dash number) indicates "short" or "long." AN 161 Fork and AN 170 Cable Eye are available with either right or left-hand thread.



| Dash No. | Thread Size | AN 155 Barrel | | AN 161 Fork | | AN 165 Pin Eye | | AN170 Cable Eye | |
|----------|-------------|---------------|------|-------------|------|----------------|------|-----------------|------|
| | | "L" | "B" | "G" | "D" | "J" | "D" | "J" | "A" |
| -8S | 6-40 | 2-1/4 | .250 | .109 | .188 | .125 | .188 | .125 | .188 |
| -16S | 10-32 | 2-1/4 | .344 | .156 | .188 | .1625 | .188 | .188 | .219 |
| -16L | 10-32 | 4 | .344 | .156 | .188 | .1625 | .188 | .188 | .219 |
| -22S | 1/4-28 | --- | --- | .187 | .188 | .188 | .188 | .219 | .281 |
| -22L | 1/4-28 | --- | --- | .187 | .188 | .188 | .188 | .219 | .281 |
| -32S | 1/4-28 | 2-1/4 | .438 | .218 | .250 | .219 | .250 | .219 | .281 |
| -32L | 1/4-28 | 4 | .438 | .218 | .250 | .219 | .250 | .219 | .281 |
| -46S | 5/16-24 | 2-1/4 | .500 | .250 | .313 | .281 | .313 | .281 | .313 |
| -46L | 5/16-24 | 4 | .500 | .250 | .313 | .281 | .313 | .281 | .313 |
| -61L | 3/8-24 | --- | --- | .270 | .375 | .281 | .375 | .281 | .344 |
| -80L | 3/8-24 | 4 | .625 | .312 | .375 | .328 | .375 | .328 | .375 |

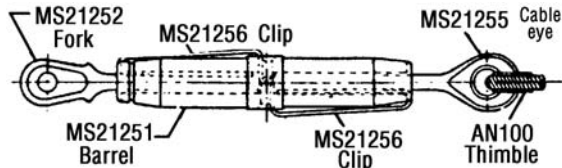
TURNBUCKLE PARTS PRICES

| AN155 Dash No. | Barrel Price Each | Dash No. | TURNBUCKLE ENDS Price Each | | |
|----------------|-------------------|----------|----------------------------|--------|--------|
| | | | AN 161 | AN 165 | AN 170 |
| -8S | | -8RS | | | |
| -8S | | -8LS | | | |
| -16S | | -16RS | | | |
| -16S | | -16LS | | | |
| -16L | | -16RL | | | |
| -16L | | 16LL | | | |
| | | -22RS | | | |
| | | -22LS | | | |
| | | -22RL | | | |
| | | -22LL | | | |

| AN155 Dash No. | Barrel Price Each | Dash No. | TURNBUCKLE ENDS Price Each | | |
|----------------|-------------------|----------|----------------------------|--------|--------|
| | | | AN 161 | AN 165 | AN 170 |
| -32S | | -32RS | | | |
| | | -32LS | | | |
| -32L | | -32RL | | | |
| | | -32LL | | | |
| -46S | | -46RS | | | |
| | | -46LS | | | |
| -46L | | -46RL | | | |
| | | -46LL | | | |
| -61L | Use -80L | -61RL | | | |
| 6.95 | | -61LL | | | |
| -80L | | -80RL | | | |
| | | -80LL | | | |

TURNBUCKLES – SAFETY WIRE

MS CLIP-LOCKING TURNBUCKLE ASSEMBLIES



Clip-Locking Turnbuckles utilize 2 locking clips instead of lock-wire for safety. The turnbuckle barrel and terminals are slotted lengthwise to accommodate the locking clips. After the proper cable tension is reached the barrel slots are aligned with the terminal slots and the clips are inserted. The curved ends of the locking clips expand and latch in the vertical slot in the center of the barrel. Build up MS turnbuckle assemblies, similar to the AN assemblies listed on the preceding page, by selecting a turnbuckle barrel, 2 end fittings and 2 clips from the components listed in the Table below. The price of the complete assembly is the sum of the prices shown for the components. Example: An MS turnbuckle assembly for 3/32" dia. cable, with fork end and pin eye consists of:

- 1 MS21251-B3S Barrel.....
- 1 MS21252-3LS Fork End.....
- 1 MS21254-3RS Pin Eye End.....
- 2 MS21256-1 Clips.....

Less 10% for 6 or more complete assemblies,
Less 15% for 12 or more complete assemblies.

| Turnbuckle Component | Part No. | Cable Dia. | Thread Size | Min. Breaking Strength(lbs) | Price Each |
|------------------------------------|--------------|-------------|-------------|-----------------------------|------------|
| Barrel (Supercedes AN155) | MS21251-B2S | 1/16" | 6-40 | 800 | . |
| | -B3S | 3/32" | 10-32 | 1600 | . |
| | -B5S | 1/8", 5/32" | 1/4-28 | 3200 | . |
| Fork End (Supercedes AN161) | MS21252-2RS | 1/16" | 6-40 | 800 | . |
| | -2LS | | | | . |
| | -3RS | 3/32" | 10-32 | 1600 | . |
| | -3LS | | | | . |
| | -5RS | 1/8", 5/32" | 1/4-28 | 3200 | . |
| Pin Eye End (Supercedes AN165) | MS21254-2RS | 1/16" | 6-40 | 800 | . |
| | -2LS | | | | . |
| | -3RS | 3/32" | 10-32 | 1600 | . |
| | -3LS | | | | . |
| Cable Eye (Supercedes AN170) | MS21255-2RS | 1/16" | 6-40 | 800 | . |
| | -2LS | | | | . |
| | -3RS | 3/32" | 10-32 | 1600 | . |
| | -3LS | | | | . |
| | -5RS | 1/8", 5/32" | 1/4-28 | 3200 | . |
| Cable Swage End (Supercedes AN669) | MS21260-S2RH | 1/16" | 6-40 | 480 | . |
| | -S2LH | | | | . |
| | -S3RH | 3/32" | 10-32 | 920 | . |
| | -S3LH | | | | . |
| | -S4RH | 1/8" | 1/4-28 | 2000 | . |
| | -S4LH | | | | . |
| Clip* | MS21256-1 | -- | -- | -- | . |



SAFETY WIRE

Available in Type 302/304 stainless steel (soft temper) per MS20995. Also, in soft annealed brass per specification QQ-W-321, Type A. Stainless steel safety wire furnished in convenient 1 lb. dispensing can (center core) or 25 Ft. coil.

Annealed brass safety wire is furnished in a convenient 1 lb. dispensing can.

| Wire Dia. In. | Wire Type | Part No. | Price Per lb. |
|---------------|-----------------|----------|---------------|
| .020 | Stainless Steel | 05-02684 | . |
| .032 | Stainless Steel | 05-02685 | . |
| .032 | Brass | 05-02686 | . |
| .041 | Stainless Steel | 05-02687 | . |
| .041 | Brass | 05-06600 | . |

Less 10% on orders for 6 or more spools, 20% on 10 spools.
May be assorted.

25 FT. COIL OF STAINLESS STEEL SAFETY WIRE:

- .032" Dia.P/N 01-15725
- .041" Dia.P/N 01-15825

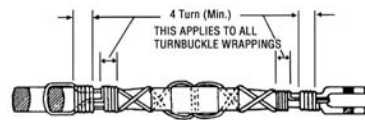
ADJUSTABLE CABLE CONNECTOR

The ACC provides a strong positive connection with tensioning and maximum liner travel in a confined cable installation. Accommodates 3 standard cable terminals, (SA-110 plain ball, MS20664C ball & single shank, and AN111 cable bushing) including combinations of cable-to-cable & cable-to-bracket. It is light & compact without compromising safety. It utilizes an original design of overlapping walls and ridges to enhance the strength of each working surface. The ACC is precisioned CNC machined 7075 anodized aluminum. Stainless Steel Allen screws work in tandem to provide cable tensioning. 2 stainless tube-nuts provide additional structural security and prevent loosening with interlocking threads. 2 stainless steel pins are locked in place between the adjustment screws and provide an anchor for cable bushings or customized brackets. If necessary, longer adjustment screws can be used to accommodate insufficient cable lengths.

| Avail. Sizes | Pin Dia. | Part No. | Price |
|---------------------|----------|----------|-------|
| ACC-3 – 1/6", 3/32" | .188 | 05-01341 | . |
| .032 | .188 | 05-01342 | . |
| .032 | 1/4" | 05-01343 | . |
| .041 | 5/16" | 05-01344 | . |

SAFETY METHODS FOR TURNBUCKLES

Safety all turnbuckles with .040 dia. annealed safety wire using either the double or single wrap as described and illustrated. Do not reuse safety wire. Adjust the turnbuckle to the correct cable tension so that no more than 3 threads are exposed on either side of the turnbuckle barrel. Do not lubricate turnbuckles.



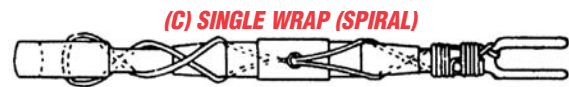
(A) DOUBLE WRAP (SPIRAL)

Of the methods using safety wire for safety turnbuckles, the method described here is preferred, although either of the other methods described are satisfactory. The method of double wrap safety is shown in figure (A). Use 2 separate lengths of the proper wire. Run one end of the wire through the hole in the barrel of the turnbuckle and bend the end of the wire towards opposite end of the turnbuckle. Then pass the second length of the wire into the hole in the barrel and bend the ends along the barrel on the opposite side first. Spiral the 2 wires in opposite directions around the barrel to cross each other twice between the center hole and the ends. Then pass the wires at the end of the turnbuckle in opposite directions through the holes in the turnbuckle eyes or between the jaws of the turnbuckle fork as applicable, laying one wire along the barrel and wrapping the other at least four times around shank of the turnbuckle and binding the laid wires in place before cutting the wrapped wire off. Wrap the remaining length of safety wire at least 4 turns around the shank and cut it off. Repeat the procedure at the opposite end of the turnbuckle.



(B) DOUBLE WRAP

Another satisfactory double wrap method is similar to Method A. except that the spiraling of the wires is omitted as shown in figure (B).



(C) SINGLE WRAP (SPIRAL)

The single wrap methods described and illustrated are acceptable but are not the equal of the double wrap methods.

Pass a single length of wire through the cable eye or fork at either end of the turnbuckle assembly. Spiral each of the wire ends in opposite directions around the first half of the turnbuckle so as to cross each other twice. Thread both wire ends through the hole in the middle of the barrel so that the third crossing of the wire ends is in the hole. Again, spiral the two wire ends in opposite directions around the remaining half of the turnbuckle, crossing them twice. Then, pass one wire end through the cable eye or fork in the manner described above, wrap both wire ends around the shank for at least four turns each, cutting off excess wire.



(D) SINGLE WRAP

Pass one length of wire through the center hole of the turnbuckle and bend the wire ends toward opposite ends of the turnbuckle. Then pass each wire end through cable eye or fork and wrap each wire end around the shank for at least four times, cutting off excess wire. After safety, no more than 3 threads of the turnbuckle terminal should be exposed.

AP

PULLEYS

PULLEYS



AN210A & AN210B (MS24566)

Anti-Friction Bearing Control Pulley with phenolic body and ball bearing with seal. The AN210A pulleys are dimensionally the same as the "B" pulleys but have metal-shielded bearings rather than removable composition-seal type bearings. The low allowable design load of the -3A and -3B pulleys is based on cable fatigue. AN210-1A, AN210-3A, AN210-1B and AN210-3B shall not be installed on frequently used aircraft controls to bend the cable more than 15° from a straight line.

MS20220 (AN220) Flight Control Pulley with phenolic body and ball bearing with seal. Also available with aluminum body (MS20220A). The low allowable load limit of the -1 pulley is based on cable fatigue. When used on frequently used aircraft controls the cable wrap angle should not be more than 15° from a straight line.

MS20219 (AN219) Aircraft Secondary Control Pulley with phenolic body and ball bearing with seal. MS20219A (AN219A) Pulley with anodized aluminum body and ball bearing with seal. The aluminum body is recommended for -1 and -3 pulleys. The -1 pulley shall not be installed in flight control systems.

Examples of Part No.: Phenolic Body - MS20219-1
Aluminum Body - MS20219A1

NAS383 Series Pulley with phenolic body and graphite impregnated bronze sleeve. This is a low cost pulley widely used in aircraft, winches, cranes and remote mechanical actuation devices.

A-223 and A-224 Pulleys with plain phenolic bore are used as guide and secondary control pulleys in production aircraft.

BB-128-1 and BB-120-1 Pulleys have high pressure phenolic bodies and ball bearings with Teflon seals. Used in Christavia and many other aircraft.

SPECIAL PULLEYS



1-1/2 Inch Pulley

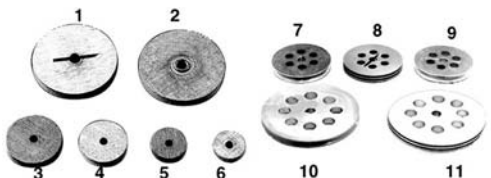
For smooth control operation. Manufactured for aircraft float rudder operation, the pulleys can be used in virtually any application. Solid UHMW plastic for use in tough, caustic environments. Bushing insert is stainless steel with minimum lubrication required. Used with 1/16" thru 1/8" - 7x7 or 7x19 control cable. Bushing is clamped in pulley bracket. Pulley rotates on bushing. Pulley: 1-1/2" dia. x .283" wide.

Bushing: 1/4" O.D. x 3/16" I.D. x .328" long. Weight: .26 oz. (including stainless bushing). P/N 05-29725 ea.

2 Inch Pulley

Larger cables, bigger job? Wherever you need a tough, durable pulley, look no further. Replace your old worn out, sticky pulleys with NAP UHMW plastic for smooth control operation. Used with 3/32" thru 3/16" - 7x7 or 7x19 control cable. Bushing insert is stainless steel with minimum lubrication required. Bushing is clamped in pulley bracket. Pulley rotates on bushing. Fits DeHavilland Beaver floats Pulley: 2" dia. x .470" wide. Bushing: 5/16" O.D. x 1/4" I.D. x .487" long. Weight: .58 oz. (including stainless bushing). P/N 05-29730 ea.

PIPER PULLEYS



| Fig. | Ref. # | Description | O.D. | I.D. | Part No. | Price |
|------|-----------|---|--------|-------|----------|-------|
| 1 | 41171-000 | Pulley, trimcrank with bushing (fiber) | 2 3/4" | 3/8" | 05-02636 | . |
| 1a | 40991-000 | Pulley (no slot) | 2 3/4" | 3/8" | 05-02637 | . |
| 2 | 41001-008 | Pulley w/ bearing (fiber)(41001-010) | 2 3/4" | 5/16" | 05-02638 | . |
| 3 | 80421-000 | Pulley (fiber) | 1 3/4" | 1/4" | 05-02639 | . |
| 4 | 481-609 | Pulley (fiber) | 1 1/2" | 1/4" | 05-02640 | . |
| 5 | 11200-000 | Pulley (fiber) | 1 1/8" | 1/4" | 05-02641 | . |
| 6 | 43001-000 | Pulley (fiber) | 1" | 1/4" | 05-02642 | . |
| 7 | 43061-000 | Pulley, Stabilizer screw (aluminum) | 2 3/4" | 3/8" | 05-02643 | . |
| 8 | 12983-000 | Pulley, double groove (aluminum) | 2 3/4" | 3/8" | 05-02644 | . |
| 9 | 10080-000 | Pulley, trimcrank (aluminum) | 2 3/4" | 3/8" | 05-02645 | . |
| 10 | 11008-000 | Pulley, adj. screw(alum.) single groove | 4" | 3/8" | 05-02646 | . |
| 11 | 12982-000 | Pulley, adj. screw (alum.) dbl. groove | 4" | 3/8" | 05-02647 | . |

AIRCRAFT PULLEY OIL

Save the labor of re-oiling the control system every year! Aircraft pulley oil prevents pulley drag and stickiness.

Pully Oil Pint..... P/N 05-04178.....

Pully Oil Kit - Includes: 1 Pint of Pully Oil, 1 Needle, 1 Each 4.5" Extension, and 1 Each 8" Extension
P/N 05-04179.....

Pully Oiler Kit - Includes: 1 Needle oiler with oil, 1 each 4.5" extension & 1 each 8" extension
P/N 05-04180.....



ALUMINUM PULLEYS

Dimensions of these aluminum pulleys are same as equivalent size of MS20219 and MS20220 Phenolic Pulleys in table.

| Part No | Price Each |
|-----------|------------|
| MS20219A1 | . |
| MS20219A3 | . |
| MS20220A1 | . |
| MS20220A2 | . |
| MS20220A3 | . |
| MS20220A4 | . |

PHENOLIC PULLEYS

| Part Number | Cable Size (In.) | OD | Groove Dia | Hub Dia. | Bore Dia. | Width | Load Limit (Lbs.) | Price Each |
|-------------|------------------|-------|------------|----------|-----------|-------|-------------------|------------|
| MS24566-1B | 1/16,5/64,3/32 | 1.250 | .972 | .625 | .1900 | .297 | 300 | . |
| MS24566-2B | 1/16,5/64,3/32 | 2.500 | 2.222 | .777 | .1900 | .297 | 500 | . |
| MS24566-3B | 1/8,5/32,3/16 | 2.000 | 1.510 | .901 | .2500 | .484 | 600 | . |
| MS24566-4B | 1/8,5/32,3/16 | 3.500 | 3.010 | .901 | .2500 | .484 | 1200 | . |
| MS20219-1 | 1/16,3/32 | 1.312 | 1.000 | .423 | .2500 | .438 | 480 | . |
| MS20219-2 | 1/16,3/32 | 1.750 | 1.438 | .423 | .2500 | .438 | 480 | . |
| MS20219-3 | 1/16,3/32 | 1.750 | 1.438 | .769 | .6250 | .438 | 480 | . |
| MS20219-4 | 1/16,3/32 | 2.625 | 2.312 | .423 | .2500 | .438 | 920 | . |
| MS20220-1 | 1/8,5/32,3/16 | 1.755 | 1.255 | .475 | .3125 | .625 | 500 | . |
| MS20220-2 | 1/8,5/32,3/16 | 3.005 | 2.505 | .475 | .3125 | .625 | 1680 | . |
| MS20220-3 | 1/8,5/32,3/16 | 4.255 | 3.755 | .475 | .3125 | .625 | 2500 | . |
| MS20220-4 | 1/8,5/32,3/16 | 5.505 | 5.005 | .475 | .3125 | .625 | 2500 | . |
| A-223 | 1/16,3/32,1/8 | 1.000 | .688 | --- | .2500 | .281 | --- | . |
| A-224 | 1/16,3/32,1/8 | 1.750 | 1.375 | --- | .2500 | .250 | --- | . |
| A-138 (NAS) | 1/16,3/32,1/8 | 1.250 | .875 | --- | .2500 | .265 | --- | . |
| A-123 (NAS) | 1/16,3/32 | 2.000 | 1.500 | --- | .2500 | .265 | --- | . |
| A-124 (NAS) | 1/16,3/32 | 2.500 | 2.000 | --- | .2500 | .265 | --- | . |
| A-130 (NAS) | 1/8,5/32 | 2.000 | 1.375 | --- | .3750 | .438 | --- | . |
| A-120 (NAS) | 5/32,3/16 | 3.000 | 2.375 | --- | .3750 | .438 | --- | . |
| 05-29710 | 3/16 | 2.500 | 1.875 | --- | .2500 | .440 | --- | . |
| 05-29720 | 3/16 | 3.000 | 2.375 | --- | .2500 | .440 | --- | . |

MCS378 SERIES PULLEYS FOR CESSNAS



Aircraft Spruce stocks all pulleys required for Cessna single engine aircraft. Our MCS378 series pulleys replace the AN, NAS and S378 series pulleys commonly used on the Cessna aircraft. Pulley kits are available that contain all of the pulleys and cotter pins required for one aircraft.

Approved Replacements for Cessna Pulleys - Cessna Model/Series
120,140,140A,150,A150,A-150,F150,FA150,FRA150,152,A152,F152,FA152,170,172,F172,FR172,172RG,FP172,P172,R172,175,177,177RG,F177RG,180,182,A182,F182,FR182,R182, TR182,T182,185,A185,188,A188, A 188,T188,205,206,P206,TU206,T206, TP206,U206,207,T207,208,210, P210, T210, T303, 310, T310, 320, 335, 336, 337, F337, P337, FP-337, T337, O-2, 340,401,402,404,411,414,421,425,441,500,501

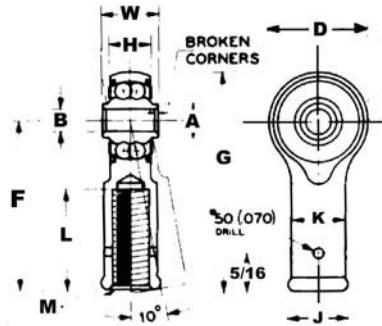
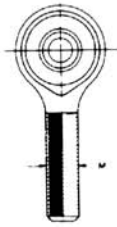
*Replaces the listed Cessna part numbers in the specific aircraft illustrated parts catalogs. Installer must verify applicability prior to installation.

| Model No.* | Replaces Cessna Part No.* | Part No. | Price |
|------------|--|----------|-------|
| MCS378-1 | S378-1 and S378-1L | 05-03422 | . |
| MCS378-2 | S378-2, A124, AN210-2B and NAS383-2 | 05-03423 | . |
| MCS378-3 | S378-3, S378-3L, A130, AN210-3B, BB-208 and NAS383-3 | 05-03424 | . |
| MCS378-4 | S378-4, A114, AN210-4B and NAS383-4 | 05-03425 | . |
| S378-5 | S378-5 | 05-03426 | . |

BEARINGS



AN 946 MS 21151
MALE THREADED SHANK



AN 951 MS 21153
FEMALE THREADED SHANK



AN948 HOLLOW SHANK
SOLID SHANK



MS21152
MS21150

| Bearing No. | MS Dash No. | Bore | D | W | H | A | F | G | L | J | K | M | | Balls | Lbs. Approx. | Weight Type Seal | Price Each | |
|-------------------------------|-------------|---------------|------------------|------------------|---|---|-----------------------------------|---------------------------------------|------------------------------------|-----------------------------|-----------------------------|----------|-------------|-------|--------------|------------------|------------|-----|
| | | Outside Diam. | Width Inner Ring | Width Outer Ring | Shoulder Diam. Inner Ring (Approx.) In. | Bore Center to end of Shank +.010 -.010 In. | Overall Dimension +.010 -.010 In. | Thread Length of Shank Hole Depth In. | Bead or Hex Diam. Across Flats In. | Shank Diam. +.010 -.010 In. | Thread Or Drill Size Inches | Size | Pitch Diam. | | | | | No. | Size |
| MALE THREAD MS 21151 | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | 10-32 | .1697 | 20 | 1/8" | .04 | Solid Seal | . |
| RE3ML3 | -1 | .1900 | .781 | .437 | .328 | .281 | 1.375 | 1.766 | .750 | | | LH | .1667 | | | | | |
| | | | | | | | | | | | | 10-32 | .1697 | | | | | |
| RE3MR3 | -2 | .1900 | .781 | .437 | .328 | .281 | 1.375 | 1.766 | .750 | | | RH | .1667 | 20 | 1/8" | .04 | Solid Seal | . |
| | | | | | | | | | | | | 3/8"-24 | .3479 | | | | | |
| RE3M6A | -3 | .1900 | .969 | .500 | .407 | .304 | 2.031 | 2.516 | 1.313 | | | RH | .3449 | 24 | 1/8" | .05 | Solid Seal | . |
| | | | | | | | | | | | | 3/8"-24 | .3479 | | | | | |
| RE3M6-2N | -4 | .1900 | .781 | .437 | .328 | .281 | 1.375 | 1.766 | .750 | | | LH | .3449 | 20 | 1/8" | .05 | Solid Seal | . |
| | | | | | | | | | | | | 3/8"-24 | .3479 | | | | | |
| REP4M6 | -8 | .2500 | .938 | .593 | .438 | .345 | 1.875 | 2.344 | 1.125 | | | RH | .3449 | 22 | 5/32" | .07 | Plyo-Seal | . |
| | | | | | | | | | | | | 3/8"-24 | .3479 | | | | | |
| REP4ML6 | -9 | .2500 | .938 | .593 | .438 | .345 | 1.875 | 2.344 | 1.125 | | | LH | .3449 | 22 | 5/32" | .07 | Plyo-Seal | . |
| REP5M6 | -10 | | | | | | | | | | | 3/8"-24 | .4050 | | | | | |
| RE5M10 | | | | | | | | | | | | 5/8"-18 | .5889 | | | | Solid Seal | . |
| FEMALE THREAD MS 21153 | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | 1/4"-28 | .2298 | | | | | |
| REP3N* | -1 | .1900 | .781 | .437 | .328 | .281 | 1.375 | 1.766 | .750 | .438 | .375 | RH | .2268 | 20 | 1/8" | .05 | Plyo-Seal | . |
| | | | | | | | | | | | | 5/16"-24 | .2884 | | | | | |
| REP3N2*** | -2 | .1900 | .781 | .437 | .328 | .281 | 1.375 | 1.766 | .750 | .438 | .438 | RH | .2854 | 20 | 1/8" | .06 | Plyo-Seal | . |
| RE3F4 | -3 | .1900 | .781 | .500 | .328 | .281 | 1.375 | 1.766 | .750 | .438 | .375 | RH | .2268 | 20 | 1/8" | .06 | Solid Seal | . |
| | | | | | | | | | | | | 5/16"-24 | .2884 | | | | | |
| REP4F5 | -6 | .2500 | .938 | .593 | .438 | .345 | 1.469 | 1.938 | .750 | .438 | .438 | RH | .2854 | 22 | 5/32" | .07 | Plyo-Seal | . |
| HOLLOW SHANK MS 21152 | | | | | | | | | | | | | | | | | | |
| REP3H5** | -1 | .1900 | .781 | .437 | .328 | .281 | 1.375 | 1.766 | .875 | | .435 | | .272 | 20 | 1/8" | .06 | Plyo-Seal | . |
| RE4H6 | | | | | | | | | | | | | | | | | Solid Seal | . |
| REP4H6 | -2 | .2500 | .938 | .593 | .438 | .345 | 1.875 | 2.344 | 1.219 | | .625 | | .386 | 22 | 5/32" | .12 | Plyo-Seal | . |
| REP4H8 | -3 | .2500 | .938 | .593 | .438 | .345 | 1.625 | 2.093 | .875 | | .625 | 33/64 | .515 | 22 | 5/32" | .08 | Plyo-Seal | --- |
| SOLID SHANK MS21150 | | | | | | | | | | | | | | | | | | |
| REP4S10 | -2 | .2500 | .938 | .593 | .438 | .345 | 1.875 | 2.344 | | | .625 | | SOLID | 22 | 5/32" | .16 | Plyo-Seal | . |

AP

*Dimensionally Same as Heim F34-14
 **Dimensionally Same as Heim F31-14
 ***Dimensionally Same as Heim F35-14

Bearings with the letter "P" in part number are new manufacture, with Plyoseals.
 Bearings without the letter "P" in part number are new surplus, with solid metal seals.

BEARINGS

KP SERIES—AN200 / MS27640



| FAFNER AND MS AFBMA Bearing No. | Bore 27640 | B | | D | | W | | H | | A | | E | | C | | Balls | | Pure Moment Rating | Moment Constant 1 Lbs. | Weight Pounds Inch (Approx.) | Price Each |
|---------------------------------|------------|--------------------------------|--|--|--|---|---|--------------------------------|-----|--------|------|-------|-----|---|--|-------|--|--------------------|------------------------|------------------------------|------------|
| | | Diameter +.0000 - .0005 Inches | Outside Inner Ring +.0000 - .0005 Inches | Width Outer Ring +.0000 - .0005 Inches | Width Inner Ring +.0000 - .0005 Inches | Shoulder Width Bore Ring (Approx.) Inches | Corner Chamfer x 45° Inner Ring O. D. +.015 - .000 Inches | Outer Ring +.015 - .000 Inches | No. | Size | Inch | | | | | | | | | | |
| KP3L* | -3A | .1900 | .6250 | .245 | .203 | .280 | .005 | .010 | 10 | 5/32" | 51.8 | 12.08 | .01 | | | | | | | | |
| KP3 | -3 | .1900 | .7774 | .297 | .270 | .331 | .005 | .022 | 12 | 5/32" | 93.7 | 10.13 | .03 | | | | | | | | |
| KP4 | -4 | .2500 | .9014 | .484 | .335 | .390 | .005 | .032 | 11 | 1/4" | 130 | 8.84 | .04 | | | | | | | | |
| KP5 | -5 | .3125 | 1.2500 | .558 | .375 | .469 | .015 | .032 | 9 | 5/16" | 335 | 6.77 | .09 | | | | | | | | |
| KP6 | -6 | .3750 | 1.4375 | .620 | .469 | .591 | .015 | .032 | 10 | 11/32" | 580 | 5.44 | .15 | | | | | | | | |
| KP8 | -8 | .5000 | 1.6875 | .620 | .500 | .768 | .015 | .044 | 10 | 11/32" | 1060 | 4.46 | .21 | | | | | | | | |

* Stainless steel shield (for "Ply-Seals" use KP3A which has same bore and O.D.)

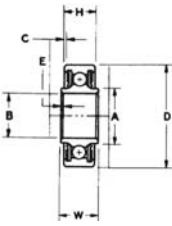
KP-A SERIES Equivalent Thrust Load = Thrust + .8 Radial Load + Moment Constant x Moment in Inch Lbs.

KP SERIES—AN201 / MS27641

AP

| FAFNER AND MS AFBMA Bearing No. | Bore 27641 | B | | D | | W | | H | | A | | E | | C | | Balls | | Maximum Static Non-Brinell Rating | | Pure Moment Rating Inch-Lbs. | Moment Constant 1 Inch | Weight Pounds (Approx.) | Price Each |
|---------------------------------|------------|--------------------------------|--|--|--|--|---|--------------------------------|-----|-------|-------------|-------------|------|-------|-----|-------|--|-----------------------------------|--|------------------------------|------------------------|-------------------------|------------|
| | | Diameter +.0000 - .0005 Inches | Outside Inner Ring +.0000 - .0005 Inches | Width Outer Ring +.0000 - .0005 Inches | Width Inner Ring +.0000 - .0005 Inches | Shoulder Diameter Bore Ring (Approx.) Inches | Corner Chamfer x 45° Inner Ring O. D. +.015 - .000 Inches | Outer Ring +.015 - .000 Inches | No. | Size | Radial Lbs. | Thrust Lbs. | | | | | | | | | | | |
| KP3A | 3 | .1900 | .6250 | .297 | .234 | .297 | .005 | .016 | 10 | 1/8" | 800 | 600 | 51.8 | 12.08 | .01 | | | | | | | | |
| KP4A | 4 | .2500 | .7500 | .281 | .219 | .380 | .005 | .016 | 12 | 1/8" | 1100 | 900 | 73.8 | 10.17 | .02 | | | | | | | | |
| KP5A | 5 | .3125 | .8125 | .297 | .234 | .415 | .015 | .016 | 14 | 1/8" | 1300 | 1000 | 100 | 8.76 | .02 | | | | | | | | |
| KP6A | 6 | .3750 | .8750 | .313 | .250 | .495 | .015 | .016 | 16 | 1/8" | 1400 | 1100 | 130 | 7.68 | .03 | | | | | | | | |
| KP8A | 8 | .5000 | 1.1250 | .375 | .313 | .616 | .015 | .016 | 16 | 5/32" | 2200 | 1700 | 250 | 6.14 | .05 | | | | | | | | |
| EW1/2 | NORMA | .5040 | .9690 | .250 | .250 | | | | | | | | | | | | | | | | | | ---- |

KP SERIES—AN200 / MS27645



| FAFNER AND MS AFBMA Bearing No. | Bore 27645 | B | | D | | W | | H | | A | | E | | C | | F | Balls | | Maximum Static Rating | | Weight Pounds (Approx.) | Price Each |
|---------------------------------|------------|--------------------------------|--|--|--|--|---|-----------------------------|-----------|-----|-------|-------------|-------------|-----|--|----|-------|-----|-----------------------|-----|-------------------------|------------|
| | | Diameter +.0000 - .0005 Inches | Outside Inner Ring +.0000 - .0005 Inches | Width Outer Ring +.0000 - .0005 Inches | Width Inner Ring +.0000 - .0005 Inches | Shoulder Width Bore Ring (Approx.) In. | Corner Chamfer x 45° Inner Ring O.D. +.015 - .000 In. | Outer Ring +.015 - .000 In. | (Approx.) | No. | Size | Radial Lbs. | Thrust Lbs. | | | | | | | | | |
| KSP3L | 3A | .1900 | .6250 | .245 | .203 | .257 | .005 | .016 | | | | | | | | 13 | 3/32" | 400 | 100 | .01 | | |
| KSP3 | 3 | .1900 | .7774 | .297 | .270 | .342 | .005 | .022 | .275 | 12 | 1/8" | 800 | 200 | .03 | | | | | | | | |
| KSP4 | 4 | .2500 | .9014 | .484 | .335 | .400 | .005 | .032 | .408 | 12 | 5/32" | 1100 | 300 | .04 | | | | | | | | |
| KSP5 | 5 | .3125 | 1.2500 | .558 | .375 | .562 | .015 | .032 | .408 | 13 | 3/16" | 1400 | 300 | .10 | | | | | | | | |
| *KS6A | 6A | .3750 | .8750 | .313 | .250 | .475 | .016 | .016 | .277 | 15 | 1/8" | 1000 | 200 | .03 | | | | | | | | |

KS SERIES SELF-ALIGNING

* NOTE: These bearings are self-aligning for 10° in either direction except for KS6A (not AN200) which is self-aligning for 8° in either direction.

DP SERIES—AN207 / MS27644



DP SERIES DOUBLE ROW, BALL

| FAFNER Bearing No. | MS 27644 | B | | D | | W | | H | | A | | E | | C | | Balls | | Maximum Static Non-Brinell | | Weight Pounds (Approx.) | Price Each |
|--------------------|----------|----------------------------|--------------------------------|--|--|--|--|--------------------------------------|-----|--------|-------------|-------------|-----|---|--|-------|--|----------------------------|--|-------------------------|------------|
| | | Bore +.0000 - .0005 Inches | Diameter +.0000 - .0005 Inches | Outside Inner Ring +.0000 - .0005 Inches | Width Outer Ring +.0000 - .0005 Inches | Shoulder Width Inner Ring (Approx.) Inches | Corner Chamfer x 45° Diameter Bore +.015 - .000 Inches | Inner Ring O. D. +.015 - .000 Inches | No. | Size | Radial Lbs. | Thrust Lbs. | | | | | | | | | |
| DPP3 | -3 | .1900 | .7774 | .495 | .473 | .302 | .005 | .02 | 20 | 5/32" | 2500 | 1700 | .04 | | | | | | | | |
| DPP4 | -4 | .2500 | .9014 | .620 | .491 | .410 | .005 | .032 | 22 | 5/32" | 3000 | 1800 | .06 | | | | | | | | |
| DPP5 | -5 | .3125 | 1.2500 | .745 | .687 | .469 | .015 | .032 | 20 | 1/4" | 6900 | 4200 | .17 | | | | | | | | |
| DP6 | -6 | .3750 | 1.4375 | .870 | .794 | .551 | .015 | .032 | 18 | 5/16" | 9700 | 5800 | .26 | | | | | | | | |
| DPP8 | -8 | .5000 | 1.6875 | .932 | .856 | .735 | .015 | .044 | 20 | 11/32" | 13000 | 7800 | .38 | | | | | | | | |

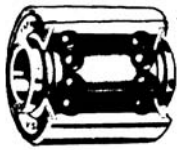
DSP SERIES—AN206 / MS27643



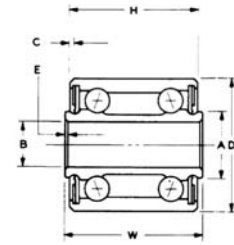
| FAFNER Bearing No. | MS 27643 | B | | D | | W | | H | | A | | E | | C | | Balls | | Maximum Static Non-Brinell | | Weight Pounds (Approx.) | Price Each |
|--------------------|----------|----------------------------|--------------------------------|--|--|--|---|-----------------------------------|-----|-------|-------------|-------------|-----|---|--|-------|--|----------------------------|--|-------------------------|------------|
| | | Bore +.0000 - .0005 Inches | Diameter +.0000 - .0005 Inches | Outside Inner Ring +.0000 - .0005 Inches | Width Outer Ring +.0000 - .0005 Inches | Shoulder Width Inner Ring (Approx.) Inches | Corner Chamfer x 45° Diameter Bore +.015 - .000 In. | Inner Ring O. D. +.015 - .000 In. | No. | Size | Radial Lbs. | Thrust Lbs. | | | | | | | | | |
| DSP3 | -3 | .1900 | .7774 | .500 | .392 | .304 | .005 | .022 | 24 | 1/8" | 1000 | 200 | .04 | | | | | | | | |
| DSP4 | -4 | .2500 | .9014 | .687 | .464 | .430 | .005 | .032 | 30 | 1/8" | 13000 | 300 | .06 | | | | | | | | |
| DSP5 | -5 | .3125 | 1.2500 | .812 | .656 | .515 | .015 | .032 | 28 | 3/16" | 2600 | 600 | .16 | | | | | | | | |
| DSP6 | -6 | .3750 | 1.4375 | .937 | .750 | .564 | .015 | .032 | 28 | 7/32" | 3600 | 800 | .24 | | | | | | | | |
| DSP8 | -8 | .5000 | 1.6875 | 1.000 | .812 | .775 | .015 | .044 | 30 | 1/4" | 5000 | 1000 | .36 | | | | | | | | |

BEARINGS REGREASERS – GREASE FITTINGS

DW SERIES (MS 27647)



- Extra Wide, Double Row, Ball
- Equipped with removable Plya-Seals



| FAFNER AND MS AFB MA Bearing No. | Bore 27647 | B | | D | | W | | H | | A | | E | | C | | Balls | | Pure Moment Rating Inch-Lbs. | Moment Constant 1 Inch | Weight Pounds (Approx.) | PRICE EACH |
|----------------------------------|------------|--------------------------------|--|--------------------------------------|---------------------------------|---|---|--------------------------------|-----|--------|------|------|------|---|--|-------|--|------------------------------|------------------------|-------------------------|------------|
| | | Diameter +.0000 - .0005 Inches | Outside Inner Ring +.0000 - .0005 Inches | Width Outer Ring +.000 - .005 Inches | Width Inner +.000 - .005 Inches | Shoulder Width Bore Ring (Approx.) Inches | Corner Chamfer x 45° Inner Ring +.015 - .000 Inches | Outer Ring +.015 - .000 Inches | No. | Size | | | | | | | | | | | |
| † DW4K2* | -4A | .2500 | .6250 | .562 | .500 | .344 | .016 | .016 | 16 | 3/32" | 121 | 3.49 | .025 | . | | | | | | | |
| DW4K* | -4 | .2500 | .7500 | .875 | .750 | .435 | .005 | .016 | 14 | 9/64" | 365 | 2.27 | .04 | . | | | | | | | |
| DW5 | -5 | .3125 | .8750 | .9375 | .8125 | .472 | .005 | .016 | 26 | 9/64" | 830 | 1.85 | .07 | . | | | | | | | |
| DW6 | -6 | .3750 | 1.0625 | 1.1875 | 1.0625 | .576 | .005 | .016 | 24 | 3/16" | 1830 | 1.38 | .12 | . | | | | | | | |
| DW8 | -8 | .5000 | 1.4375 | 1.5000 | 1.3750 | .715 | .005 | .032 | 22 | 17/64" | 4330 | 1.07 | .29 | . | | | | | | | |

EQUIVALENT THRUST LOAD = THRUST + .6 RADIAL LOAD + MOMENT CONSTANT x MOMENT IN INCH-LBS.

*Bearing stamped DW4K.

†Bearing stamped DW4K2.

These bearings are not to be used as track rollers, cam follower rolls and the like.

* RETAINER TYPE

AP

SINGLE ROW, BALL, DOUBLE SEATS



KP3AR11-2



K3L3



K3L2

| FAFNER AND AFBMA Bearing Number | B | | D | | W | | H | | A | | E | | C | | R | | Balls | | Maximum Safe Working Load Radial Lbs. | Weight Pounds (Approx) | Price Each |
|---------------------------------|----------------------------|--------------------------------------|--------------------------------------|--------------------------------------|---|--|-------------------------------|---------------------------------|-----|-------|-----|-----|-----|--|---|--|-------|--|---------------------------------------|------------------------|------------|
| | Bore +.0000 - .0005 Inches | Outside Diameter +.000 - .002 Inches | Width Inner Ring +.000 - .005 Inches | Width Outer Ring +.000 - .005 Inches | Shoulder Diameter Inner Ring (Approx.) Inches | Corner Chamfer x 45° Inner Ring Bore +.015 - .000 Inches | Corner Outer Ring O.D. Inches | Radius Outside Diameter Contour | No. | Size | | | | | | | | | | | |
| K3L3 | .1900 | .635 | .245 | .203 | .280 | .005 | .020 Rad. | .550 | 10 | 1/8" | 200 | .01 | . | | | | | | | | |
| K3LR48 | .1900 | .687 | .245 | .203 | .280 | .005 | .020 Rad. | .500 | 11 | 5/32" | 200 | .20 | --- | | | | | | | | |
| KP4R16 | .2500 | .901 | .484 | .335 | .390 | .005 | .005 x 45° | 1.000 | 11 | 5/32" | 400 | .04 | . | | | | | | | | |
| KP4R16-2 | .2500 | 1.000 | .390 | .335 | .390 | .005 | .015 x 45° | 1.000 | 11 | 5/32" | 500 | .06 | . | | | | | | | | |

The maximum safe working load is that radial load to obtain 100,000 feet peripheral travel life.

ACS BEARING REGREASERS



The ACS bearing regreasers restore bearings, rod ends and pulleys to "like-new" condition. O-ring in base of regreaser provides positive seal when bearing is secured by the threaded center post. Grease, entering under pressure at the grease fitting, is forced to flow through the bearing, flushing out the old grease and dirt, and recharging the bearing with fresh grease. Anodized aluminum construction. Available in five sizes.

| Bearing Regreaser Number | Part No. | Bearing Size | | Price Each |
|--------------------------|----------|--------------|-------|------------|
| | | O.D. | Bore | |
| 3 | 10650-3 | 3/4" | 3/16" | . |
| 4 | 10650-4 | 1" | 1/4" | . |
| 5 | 10650-5 | 1-1/4" | 5/16" | . |
| 6 | 10650-6 | 1-1/2" | 3/8" | . |
| 8 | 10650-8 | 1-1/2" | 1/2" | . |

Complete Set of Five - P/N 12-11500

GREASE FITTINGS

Surface Check fittings of the MS15000 series have spring-loaded ball check in the tip. Conform to MIL-F-3541.



MS15001-1

MS15001-4

MS15003-5

MS15003-6

| MS No. | Thread | Shank Length | Eff. Thread Length | Overall Length | Tip Angle | Price Each |
|------------|-----------|--------------|--------------------|----------------|-----------|------------|
| MS15001-1 | 1/4-28 | 3/16" | .109 | 1/2" | 0° | . |
| MS15001-4 | Taper | 3/16" | .109 | 1/2" | 90° | . |
| AS15002-1P | 1/4-28 | 1/8" | .075 | 17/32" | 0° | . |
| | Straight | | | | | |
| MS15003-5 | 1/8" Pipe | 9/32" | .188 | 31/32" | 65° | . |
| MS15003-6 | 1/8" Pipe | 9/32" | .188 | 15/16" | 90° | . |



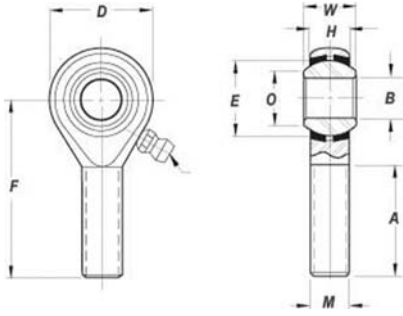
LUBRICAPS

These bright red Lubricaps are made of molded rubber and are used as grease fitting covers. The internal lip holds the cap in place and keeps out dirt, sand, and fluids. M-24529 (20% discount for 100/each)

P/N 04-01940

BEARINGS

HEIM ROD ENDS MALE THREADED M AND HM SERIES



Rod Ends male threaded (HM M Series)

- Outer Member: Aircraft Quality Carbon Steel, Magnetic particle inspected, with protective coating for corrosion resistance.
- Ball: 52100 Alloy Steel, heat treated, chrome plated.
- Inserts: Brass, 16 size has one piece carbon steel race.

Heim "M" and "MD" series bearings are now manufactured in magnafluxed version only. As old stock is depleted, magnafluxed equivalents will be furnished as substitutes at current (higher) prices unless otherwise requested on the order.

"L" in rod end number designates left hand thread. In this series, the "D" in rod end number (MD35 14) denotes drilled hole in the shank. Add suffix "G" to indicate lubricator is required. Example: HM-SG. Add suffix "FG" to indicate flush type lubricator is required. Example: M34-14FG. Lubricator (G) (FG) available with minimum qty. required. Please Call for Pricing.

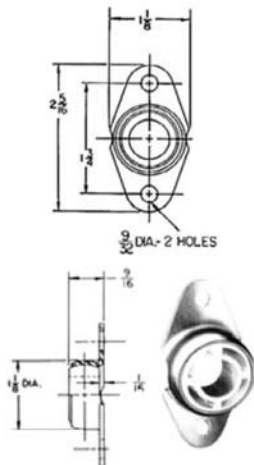
AP

| Rod End No. | Equiv. Spherco No. | DIMENSIONS | | | | | | | | | | | Max Static Radial Load in Pounds Approx. | Approx. Weight in Pounds | Price Each | | |
|-------------|--------------------|------------|------------|---------------|-----------------|------------|--------------------------|----------------|------------------|---|------------|-------|--|--------------------------|------------|-----|---|
| | | Bore | ball Width | Housing Width | Ball Flat Diam. | Head Diam. | Length to center of ball | Overall Length | Other Dimensions | | | | | | | | |
| | | B | W | H | O | D | F | G | A | N | Ball Diam. | M | | | | | |
| M34-14M | NONE | .1900 | .437 | .328 | .273 | .750 | 1.560 | 1.935 | 1.000 | | | 33/64 | 1/4"-28 | 1,695 | .05 | . | |
| MD35-14 | NONE | .1900 | .437 | .328 | .273 | .875 | 1.375 | 1.812 | .750 | | | 33/64 | 5/16"-24 | 2,184 | .07 | . | |
| MDL35-14 | | | | | | | | | | | | .113 | UNF | | | . | |
| MD36-14 | NONE | .1900 | .437 | .328 | .273 | .750 | 1.375 | 1.750 | .750 | | | 33/64 | 3/8"-24 | 2,848 | .07 | . | |
| MDL36-14 | | | | | | | | | | | | .113 | UNF | | | . | |
| MD36-16M | NONE | .1900 | .500 | .375 | .321 | .812 | 1.812 | 2.219 | 1.062 | | | #29 | 19/32 | 3/8"-24 | 2,769 | .08 | . |
| MDL36-16 | | | | | | | | | | | | .136 | UNF | | | --- | |
| M44-14 | NONE | .2500 | .437 | .304 | .354 | .812 | 1.562 | 1.968 | 1.000 | | | 9/16 | 1/4"-28 | 1,695 | .06 | . | |
| ML44-14 | | | | | | | | | | | | | UNF | | | --- | |
| MD46-15 | NONE | .2500 | .484 | .335 | .395 | .875 | 2.312 | 2.750 | 1.500 | | | #29 | 5/8 | 3/8"-24 | 3,151 | .10 | . |
| MDL46-16 | | | | | | | | | | | | .159 | UNF | | | . | |
| HM-2M | NONE | .1250 | .250 | .187 | .187 | .469 | .937 | 1.172 | .500 | | | 5/16 | 6-32 | 452 | .02 | . | |
| HML-2M | | | | | | | | | | | | | UNC | | | . | |
| HM-2AM | NONE | .1562 | .281 | .219 | .249 | .562 | 1.125 | 1.406 | .625 | | | 3/8 | 8-32 | 666 | .02 | --- | |
| HML-2AM | | | | | | | | | | | | | UNC | | | . | |
| HM-3M | TRE-3 | .1900 | .312 | .250 | .306 | .625 | 1.250 | 1.563 | .750 | | | 7/16 | 10-32 | 910 | .03 | . | |
| HML-3M | TREL-3 | | | | | | | | | | | | UNF | | | . | |
| HM-4M | TRE-4 | .2500 | .375 | .281 | .355 | .750 | 1.562 | 1.937 | 1.000 | | | 33/64 | 1/4"-28 | 1,695 | .05 | . | |
| HML-4M | TREL-4 | | | | | | | | | | | | UNF | | | . | |
| HM-5M | TRE-5 | .3125 | .437 | .344 | .447 | .875 | 1.875 | 2.312 | 1.250 | | | #33 | 5/8 | 5/16"-24 | 2,205 | .08 | . |
| HM-6M | TRE-6 | .3750 | .500 | .406 | .517 | 1.000 | 1.938 | 2.438 | 1.250 | | | #21 | 23/32 | 3/8"-24 | 3,172 | .11 | . |
| HML-6M | TREL-6 | | | | | | | | | | | .159 | UNF | | | . | |
| HM-7M | TRE-7 | .4375 | .562 | .437 | .586 | 1.125 | 2.125 | 2.688 | 1.375 | | | #21 | 13/16 | 7/16"-20 | 4,633 | .16 | . |
| HML-7M | TREL-7 | | | | | | | | | | | .159 | UNF | | | --- | |
| HM-8M | TRE-8 | .5000 | .625 | .500 | .698 | 1.312 | 2.438 | 3.094 | 1.500 | | | #3 | 15/16 | 1/2"-20 | 5,876 | .24 | . |
| HML-8M | TREL-8 | | | | | | | | | | | .213 | UNF | | | . | |

UNF= Universal Fine, UN=Universal Coarse

TRIANGLE MFG. BEARINGS

Manufactured by Triangle Mfg. Co., these bearings are spherical on the outside and are contained in a flanged, stamped metal cage, so they provide sliding, rotating, and pivoting motion. The bearings are available in nylon, bronze, or iron as shown in the table below. The FMN10 is used in the wing roots and on the torque tubes inside the fuselage of the Cozy Mark IV.



| PART NO. | I.D. | BEARING MATERIAL | PRICE EA. | PART NO. | I.D. | BEARING MATERIAL | PRICE EA. |
|----------|-------|------------------|-----------|----------|------|------------------|-----------|
| FMN4 | 1/4" | Nylon | . | FM1508P | 1/2" | Iron | . |
| FMN5 | 5/16" | Nylon | . | FM1408P | 1/2" | Bronze | . |
| FMN6 | 3/8" | Nylon | . | FMN10 | 5/8" | Nylon | . |
| FM1406P | 3/8" | Bronze | . | FM1510P | 5/8" | Iron | . |
| FMN7 | 7/16" | Nylon | . | 04-01658 | 5/8" | Bronze | . |
| FMN8 | 1/2" | Nylon | . | FMN12 | 3/4" | Nylon | . |
| | | | | FM1512P | 3/4" | Iron | . |

BEARINGS

ROD END MALE THREADED HMX EXTRA CAPACITY SERIES

SPECIFICATIONS:

Outer Member: SAE 4130 steel heat treated to 175,000 PSI Cadium Plated.

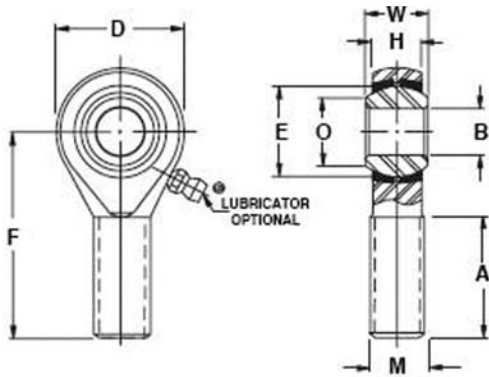
Ball: SAE 52100 Steel, Heat Treated, Chrome Plated.

Inserts: Aluminum Bronze

"L" in rod end number designates left hand thread.
Add letter 'M' to dash number for magnafluxed rod ends.
This series is equipped with lubricators as shown.
Add suffix "FG" to indicate flush type lubricator is required.

Example: HMX-4FG. Additional costs will apply.

Note: See Pg 150 for Aurora Equivalents to Heim HM & HF Series.



| Rod End Number | Equiv Spherco Number | DIMENSIONS | | | | | | | | | | | Maximum Static Load in Lbs. approx | | Approx. Weight in Lbs. | Price Ea. |
|----------------|----------------------|--------------------|------------------|------------------|----------------|------------------|------------------------|------------------|------------------|------------|-----------|----------|------------------------------------|-------|------------------------|-----------|
| | | Bore | Ball Width | Housing Width | Ball Flat Dia. | Head Dia. | Length to Cntr of Ball | Over-All Length | Other Dimensions | | | | | | | |
| | | B | W | H | O | D | F | G | A | N | | M | Radial | Axial | | |
| | | +0.0015 -0.0005 | +0.000 -0.005 | +0.005 -0.005 | | +0.010 -0.010 | +0.010 -0.010 | +0.010 -0.010 | Min. | Drill Dia. | Ball Dia. | Class 3A | | | | |
| HMX-4G | ARE 4-20 | .2500 | .375 | .281 | .355 | .750 | 1.560 | 1.937 | 1.000 | #33 | 33/64 | 5/16"-24 | 3,260 | 1,710 | .06 | . |
| HMXL-4G | AREL-20 | | | | | | | | | .113 | | UNF | | | | . |
| HMX-5G | ARE- 5-20 | .3125 | .437 | .344 | .447 | .875 | 1.375 | 2.312 | 1.250 | #21 | 5/8 | 3/8"-24 | 4,920 | 2,376 | .09 | . |
| | | | | | | | | | | | | UNF | | | | . |
| HMX-6G | ARE 6-20 | .3750 | .500 | .406 | .517 | 1.000 | 1.375 | 2.438 | 1.250 | #21 | 23/32 | 7/16"-20 | 7,240 | 2,946 | .13 | . |
| HMX-7G | ARE 7-20 | .4375 | .562 | .437 | .586 | 1.125 | 1.812 | 2.688 | 1.375 | #21 | 13/16 | 1/2"-20 | 7,620 | 3,367 | .18 | . |
| HMXL-7G | AREL 7-20 | | | | | | | | | .159 | | UNF | | | | . |
| HMX-8G | ARE 8-20 | .5000 | .625 | .500 | .698 | 1.312 | 1.562 | 3.094 | 1.500 | #3 | 15/16 | 5/8"-18 | 11,920 | 4,074 | .30 | . |
| HMXL-8G | AREL 8-20 | | | | | | | | | .213 | | UNF | | | | . |

AP

HME SERIES

SPECIFICATIONS:

Outer Member: Carbon steel-protective coated for corrosion resistance.

Ball: Carbon steel-heat treated, chrome plated.

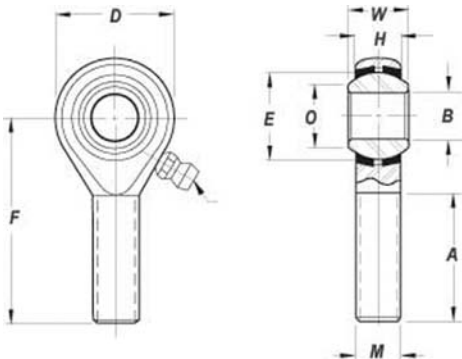
Inserts: Aluminum.

Liner: Self lubricating UNIFLON.

"L" in rod end number designates left hand thread.

"R" in part number indicates woven uniflon. Example: HMR-3.

*Uniflon® — The Heim Universal Corporation's trademark for teflon® lined rod ends and spherical bearings.



| Part No. | Thread Type | SEE DIAGRAM ABOVE | | | | | | | | | Price |
|----------|-------------|-------------------|------|------|-------|-------|-------|-------------|------|------|-------|
| | | B | W | H | D | F | A | Thread Size | E | O | |
| HME-3M | Right Hand | .1900 | .312 | .250 | .625 | 1.250 | .750 | .1900-32 | .437 | .306 | - |
| HMLE-3M | Left Hand | .1900 | .312 | .250 | .625 | 1.25 | .750 | .1900-32 | .437 | .306 | - |
| HME-4M | Right Hand | .2500 | .375 | .281 | .750 | 1.562 | 1.000 | .2500-28 | .515 | .353 | . |
| HMLE-4M | Left Hand | .2500 | .375 | .281 | .750 | 1.562 | 1.000 | .2500-28 | .515 | .353 | - |
| HME-5M | Right Hand | .3125 | .437 | .344 | .875 | 1.875 | 1.250 | .3125-24 | .625 | .447 | - |
| HMLE-5M | Left Hand | .3125 | .437 | .344 | .875 | 1.875 | 1.250 | .3125-24 | .625 | .447 | . |
| HME-6M | Right Hand | .3750 | .500 | .406 | 1.000 | 1.938 | 1.250 | .3750-24 | .718 | .516 | - |
| HMLE-6M | Left Hand | .3750 | .500 | .406 | 1.000 | 1.938 | 1.250 | .3750-24 | .718 | .516 | - |
| HME-7M | Right Hand | .4375 | .562 | .437 | 1.125 | 2.125 | 1.375 | .4375-20 | .812 | .586 | - |
| HMLE-7M | Left Hand | .4375 | .562 | .437 | 1.125 | 2.125 | 1.375 | .4375-20 | .812 | .586 | - |
| HME-8M | Right Hand | .5000 | .625 | .500 | 1.312 | 2.438 | 1.500 | .5000-20 | .937 | .698 | - |
| HMLE-8M | Left Hand | .5000 | .625 | .500 | 1.312 | 2.438 | 1.500 | .5000-20 | .937 | .698 | - |

BEARINGS

ROD ENDS FEMALE THREADED (F & HF SERIES)

SPECIFICATIONS:

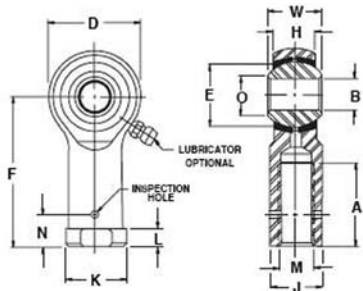
Outer Member: Aircraft Quality Steel, Cadmium Plated.

Ball: SAE 52100 Steel.

Inserts: Naval Bronze

"L" in rod end number designates left hand thread. Add suffix "G" to indicate lubricator is required. Example: F35-14G. Add suffix "FG" to indicate flush type lubricator is required. Example: HF-4FG. Add \$3.00 to price for lubricator (G) (FG).

Note: Standard Bearings Furnished Without Inspection Hole. If Hole Needed, Add "M" to P/N & At Higher Cost.



AP

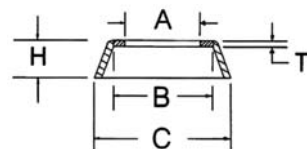
| PN | Bore | Ball Width | Housing Width | Head Dia. | Length to ctr. of ball | Thread Length | Thread Size | Ball Diameter | Ball Flat Diameter | Other Dimensions | | | Max Rad. Load | Wgt. | Price |
|----------|--------------------|------------------|------------------|------------------|------------------------|------------------|-------------|---------------|--------------------|------------------|------------------|------------------|---------------|------|-------|
| | B | W | H | D | F | A | M | E | O | K | N | L | | | |
| | +0.0015 -0.0005 | +0.000 -0.005 | +0.005 -0.005 | +0.010 -0.010 | +0.010 -0.010 | +0.062 -0.031 | UNF-3B | REF | REF | +0.010 -0.010 | +0.020 -0.020 | +0.010 -0.010 | | | |
| FL34-14M | .1900 | .437 | .328 | .750 | 1.375 | .750 | .2500-28 | .515 | .273 | .468 | .312 | .187 | 2850 | .06 | . |
| F347-14M | .1900 | .437 | .328 | .750 | 1.062 | .437 | .2500-28 | .515 | .273 | .375 | - | - | 2850 | .05 | . |
| F34-16M | .1900 | .500 | .375 | .812 | 1.375 | .750 | .2500-28 | .593 | .321 | .468 | .312 | .187 | 2750 | .08 | . |
| F35-14M | .1900 | .437 | .328 | .750 | 1.375 | .750 | .3125-24 | .515 | .0273 | .500 | .406 | .187 | 2850 | .07 | . |
| FL35-14M | .1900 | .437 | .328 | .750 | 1.375 | .750 | .3125-24 | .515 | .273 | .500 | .406 | .187 | 2850 | .07 | . |
| F44-14M | .2500 | .437 | .304 | .812 | 1.375 | .750 | .2500-28 | .562 | .354 | .468 | .312 | .187 | 2850 | .07 | . |
| FL44-14M | .2500 | .437 | .304 | .812 | 1.375 | .750 | .2500-28 | .562 | .354 | .468 | .312 | .187 | 2850 | .07 | . |
| F45-19M | .250 | .593 | .438 | .938 | 1.469 | .750 | .3125-24 | .687 | .347 | .500 | .406 | .187 | 3700 | .11 | . |
| HF-3M | .1900 | .312 | .250 | .625 | 1.062 | .562 | 1.900-32 | .437 | .306 | .406 | - | .187 | 1850 | .03 | . |
| HFL-3M | .1900 | .312 | .250 | .625 | 1.062 | .562 | 1.900-32 | .437 | .306 | .406 | - | .187 | 1850 | .03 | . |
| HF-4M | .2500 | .35 | .281 | .750 | 1.312 | .750 | .2500-28 | .515 | .353 | .468. | - | .187 | 2700 | .05 | . |
| HFL-4M | .2500 | .35 | .281 | .750 | 1.312 | .750 | .2500-28 | .515 | .353 | .468. | - | .187 | 2700 | .05 | . |
| HF-5M | .3125 | .437 | .344 | .875 | 1.375 | .750 | .3125-24 | .625 | .447 | .500 | - | .187 | 3350 | .08 | . |
| HFL-5M | .3125 | .437 | .344 | .875 | 1.375 | .750 | .3125-24 | .625 | .447 | .500 | - | .187 | 3350 | .08 | . |

*F34-14 Dimensionally the same as Fafnir REPB3N. **F35-14 Dimensionally the same as Fafnir REPB3N2

SEALS-IT ROD END SEALS

Protect the spherical bearing of rod ends. This patented design features a neoprene rubber seal bonded directly to an aircraft quality washer. The seal encapsulates the bearing and flexes accordingly with any change in angularity. This provides unprecedented protection from dirt and other types of contamination which may severely shorten the life of these important components.

The rubber is engineered for wide range of temperature variation and is impervious to gasoline, oils, and most other common fluids. The steel washer is plated for protection from corrosion.



| Size | A | B | C | H | T | Part No. | Price |
|------|------|------|-------|------|------|----------|-------|
| 3/16 | .200 | .326 | .442 | .096 | .020 | 05-01434 | --- |
| 1/4 | .257 | .375 | .565 | .125 | .025 | 05-2500 | . |
| 5/16 | .325 | .450 | .710 | .200 | .047 | 05-3125 | . |
| 3/8 | .386 | .525 | .775 | .220 | .047 | 05-3750 | . |
| 7/16 | .445 | .610 | .910 | .250 | .047 | 05-4375 | . |
| 1/2 | .515 | .710 | 1.125 | .250 | .047 | 05-5001 | . |
| 5/8 | .638 | .900 | 1.250 | .250 | .047 | 05-6250 | . |
| 3/4 | .763 | 1.00 | 1.375 | .375 | .047 | 05-7500 | . |

BEARINGS

UNIFLON LINED



HFE M SERIES

SPECIFICATIONS:

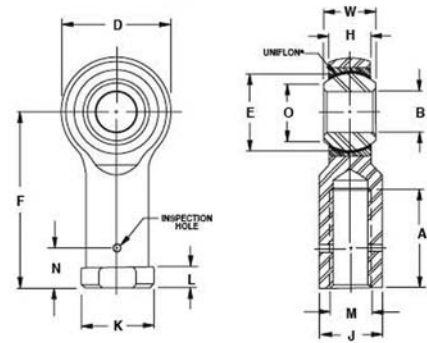
Outer Member: Carbon steel, magnetic particle inspected, with protective coating for corrosion resistance.

Ball: 52100 Alloy steel, heat treated, chrome plated.

Race: Aluminum.

Liner: Self lubricating UNIFLON.

The letter "L" indicates Left Hand thread.



| Rod End No. | Dimensions | | | | | | | | | | | | | | Max. Static Radial Load (lbs.) | Approx. Wt. (lbs.) | Price Each |
|-------------|------------------|------------------|------------------|----------------|------------------|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------|--------------|--------------------------------|--------------------|------------|
| | Bore | Ball Width | Housing Width | Ball Flat Dia. | Head Dia. | Length to ctr. of ball | Overall Length | Other Dimensions | | | | | | | | | |
| | B | W | H | O | D | F | G | A | K | J | N | L | M | | | | |
| | +0.015 -0.005 | +0.000 -0.005 | +0.005 -0.005 | | +0.010 -0.010 | +0.010 -0.010 | +0.010 -0.010 | Min | +0.010 -0.010 | +0.010 -0.010 | +0.005 -0.005 | +0.010 -0.010 | Ball Diam. | Class 3B | | | |
| HFE-3M | | | | | | | | | | | | | | 10-32 UNF | | | . |
| HFLE-3M | .1900 | .312 | .250 | .306 | .625 | 1.062 | 1.375 | .562 | .406 | .312 | .312 | .187 | .437 | | 865 | .03 | . |
| HFE-4M | | | | | | | | | | | | | | 1/4"-28 UNF | | | . |
| HFLE-4M | .2500 | .375 | .281 | .355 | .750 | 1.312 | 1.687 | .750 | .468 | .375 | .312 | .187 | .515 | | 1,550 | .05 | . |
| HFE-5M | | | | | | | | | | | | | | 5/16"-24 UNF | | | . |
| HFLE-5M | .3125 | .437 | .344 | .447 | .875 | 1.375 | 1.812 | .750 | .500 | .437 | .406 | .187 | .625 | | 2,080 | .08 | --- |
| HFE-6M | | | | | | | | | | | | | | 3/8"-24 UNF | | | . |
| HFLE-6M | .3750 | .500 | .406 | .517 | 1.000 | 1.625 | 2.125 | .937 | .687 | .562 | .469 | .250 | .718 | | 2,950 | .12 | . |
| HFE-7M | | | | | | | | | | | | | | 7/16"-20 UNF | | | --- |
| HFLE-7M | .4375 | .562 | .437 | .586 | 1.125 | 1.812 | 2.375 | 1.062 | .750 | .625 | .531 | .250 | .812 | | 3,160 | .17 | --- |
| HFE-8M | | | | | | | | | | | | | | 1/2"-20 UNF | | | . |
| HFLE-8M | .5000 | .625 | .500 | .698 | 1.312 | 2.125 | 2.781 | 1.187 | .875 | .750 | .594 | .250 | .937 | | 4,925 | .26 | --- |

AP

ROD ENDS FEMALE THREADED

HFX EXTRA CAPACITY SERIES

SPECIFICATIONS:

Outer Member: SAE 4130 steel heat treated to 175,000 PSI Cadmium Plated.

Ball: SAE 52100 Steel, Heat Treated, Chrome Plated.

Inserts: Aluminum Bronze.

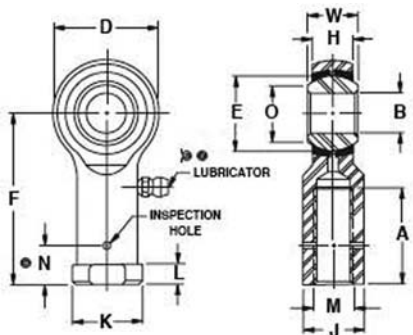
"L" in rod end number designates left hand thread.

All rod ends in this series are magnafluxed, and are stamped with the letter "M".

This series is equipped with lubricators as shown.

Add suffix "FG" to indicate flush type lubricator is required. Example: HFX-4FG.

Lubricator (G) (FG) available with minimum qty. required. Please Call for Pricing.



| Rod End No. | Dimensions | | | | | | | | | | | | | | Max. Static Radial Load (lbs.) | | Approx. Weight (Lbs.) | Price Each |
|-------------|--------------------|------------------|------------------|----------------|------------------|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------|----------|--------------------------------|--------|-----------------------|------------|
| | Bore | Ball Width | Housing Width | Ball Flat Dia. | Head Dia. | Length to ctr. of ball | Overall Length | Other Dimensions | | | | | | | | | | |
| | B | W | H | O | D | F | G | A | K | J | N | L | M | | | | | |
| | +0.0015 -0.0005 | +0.000 -0.005 | +0.005 -0.005 | | +0.010 -0.010 | +0.010 -0.010 | +0.010 -0.010 | Min | +0.010 -0.010 | +0.010 -0.010 | +0.005 -0.005 | +0.010 -0.010 | Ball Diam. | Class 3B | | | | |
| HFX-4G | .2500 | .375 | .281 | .355 | .750 | 1.312 | 1.687 | .750 | .468 | .375 | .312 | .187 | .515 | 1/4"-28 | 3,260 | 6,680 | .06 | . |
| HFX-5G | .3125 | .437 | .344 | .447 | .875 | 1.375 | 1.812 | .750 | .500 | .437 | .406 | .187 | .515 | 5/8 | 4,920 | 8,410 | .08 | . |
| HFXL-5G | | | | | | | | | | | | | | UNF | | | --- | |
| HFXL-6G | .3750 | .500 | .406 | .517 | 1.000 | 1.625 | 2.125 | .937 | .687 | .562 | .469 | .250 | .718 | 23/32 | 7,240 | 11,160 | .14 | --- |
| | | | | | | | | | | | | | | UNF | | | | |
| HFX-7G | .4375 | .562 | .437 | .586 | 1.125 | 1.812 | 2.375 | 1.062 | .750 | .625 | .531 | .250 | .812 | 13/16 | 7,620 | 13,660 | .18 | --- |
| HFXL-7G | | | | | | | | | | | | | | UNF | | | . | |
| HFX-8G | .5000 | .625 | .500 | .698 | 1.312 | 2.125 | 2.781 | 1.187 | .875 | .750 | .594 | .250 | .937 | 15/16 | 11,920 | 19,340 | .29 | . |
| HFXL-8G | | | | | | | | | | | | | | UNC | | | --- | |

BEARINGS

SPHERICAL BEARINGS SERIES LS, LSS, LHA



SPECIFICATIONS:

LS SERIES

Outer Member: Carbon Steel, with protective coating for corrosion resistance on all surfaces exposed after installation.

Ball: SAE 52100 Steel, Heat Treated.

Inserts: Brass.

LSS SERIES

Outer Member: 4130 or 4340 Alloy steel, heat treated, with protective coating for corrosion resistance on all surfaces exposed after installation.

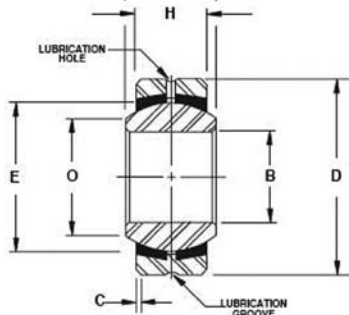
Ball: 52100 Alloy steel, heat treated, chrome plated.

Inserts: Copper alloy

LHA SERIES

Outer Member: 4130 or 4340 Alloy steel, heat treated, with protective coating for corrosion resistance on all surfaces exposed after installation.

Ball: 52100 Alloy steel, heat treated, chrome plated.



AP

| Spherical Bearing No. | Dimensions | | | | | | | Max Static Radial load In Pounds Approx. | Approx. Weight in Pounds | Price Each |
|-----------------------|-----------------------|-----------------------|---------------------|---------------------|---------------------|---------------|--------------------|--|--------------------------|------------|
| | Bore | Outside Diam. | Ball Width | Housing Width | Chamfer | Bsll Diameter | Ball Flat Diameter | | | |
| | B +.0000 -.0005 | D +.0000 -.0005 | W +.000 -.005 | H +.000 -.005 | C +.000 -.005 | E REF | O REF | | | |
| LS-3 | .1900 | .6250 | .281 | .187 | .016 | .406 | .293 | 2960 | .02 | . |
| LS-4 | .2500 | .7500 | .375 | .281 | .016 | .515 | .354 | 5245 | .04 | . |
| LS-5 | .3125 | .8750 | .437 | .313 | .016 | .625 | .447 | 6550 | .05 | . |
| LS-6 | .3750 | 1.0000 | .500 | .375 | .016 | .718 | .517 | 8605 | .08 | . |
| LS-8 | .5000 | 1.3125 | .687 | .531 | .044 | .937 | .637 | 15600 | .18 | . |
| | | | | | | | | | | |
| LSS-2 | .1650 | .4687 | .250 | .187 | .235 | .020 | 11/32 | 2,000 | .01 | --- |
| LSS-3 | .1900 | .5625 | .281 | .218 | .020 | .406 | .293 | 2750 | .02 | . |
| LSS-4 | .2500 | .6562 | .343 | .250 | .022 | .500 | .364 | 4200 | .02 | . |
| LSS-5 | .3125 | .7500 | .375 | .281 | .022 | .562 | .419 | 5800 | .03 | . |
| LSS-6 | .3750 | .8125 | .406 | .312 | .032 | .625 | .475 | 7150 | .04 | . |
| LSS-8 | .5000 | 1.000 | .500 | .390 | .032 | .781 | .600 | 11200 | .07 | . |
| | | | | | | | | | | |
| LHA-2 | .1650 | .4687 | .250 | .187 | .020 | .343 | .235 | 4400 | .01 | . |
| LHA-3 | .1900 | .5625 | .281 | .218 | .020 | .406 | .293 | 6480 | .02 | . |
| LHA-4 | .2500 | .6562 | .343 | .250 | .022 | .500 | .364 | 10000 | .02 | . |
| LHA-6 | .3750 | .8125 | .406 | .312 | .032 | .625 | .475 | 18750 | .04 | . |
| LHA-8 | .5000 | 1.000 | .500 | .390 | .600 | .032 | 25/32 | 26,900 | .07 | --- |

The allowable static axial loads are one-fourth of radial loads given above.

AURORA BEARINGS



AURORA BEARINGS

In 1971 Aurora Bearing Company entered the rod end and spherical bearing market and soon became a major force in the rod end industry. Over the years, Aurora Bearing has retained its original business philosophy of furnishing a quality product at competitive prices and with service much faster than the competition. Aurora offers a complete line of standard and spherical bearings. In addition, special bearings can be designed and manufactured on request. Listed below are many of the most popular Heim bearing part numbers and the equivalent Aurora Bearing part number. On many of these items, the Aurora bearing offers substantial savings and faster delivery time. Unlisted Aurora bearings, quantity discounts and complete Aurora Bearing Company brochure available on request.

SPECIFICATIONS:

- Body** - Low carbon steel, cadmium or zinc plated at manufacturer's option, dichromate treated.
No. 16 series standard body is 4130 steel, not heat treated.
- Race** - Low carbon steel, cadmium or zinc plated (manufacturer's option), chromate treated.
- Ball** - Allow steel, heat treated, hard chrome plated.

The above specifications apply to most but not all Aurora bearings.

Note: Bearings not furnished standard with grease fittings are available with grease fittings. Add suffix "Z" and \$2.10 to price.

Note: There is a \$25.00 certificate fee applied to any Aurora Bearing order under \$250.00.



AURORA EQUIVALENTS TO HEIM HM & HF SERIES

| MALE | | |
|------------|----------|------------|
| Aurora P/N | Heim P/N | Price Each |
| MM-2 | HM-2 | . |
| MB-2 | HML-2 | . |
| MM-3 | HM-3 | . |
| MB-3 | HML-3 | . |
| MM-4 | HM-4 | . |
| MB-4 | HML-4 | . |
| MM-5 | HM-5 | . |
| MB-5 | HML-5 | . |
| MM-6 | HM-6 | . |
| MB-6 | HML-6 | . |
| MM-7 | HM-7 | . |
| MB-7 | HML-7 | . |
| MM-8 | HM-8 | . |
| MB-8 | HML-8 | . |

| FEMALE | | |
|------------|----------|------------|
| Aurora P/N | Heim P/N | Price Each |
| MW-2 | HF-2 | . |
| MG-2 | HFL-2 | . |
| MW-3 | HF-3 | . |
| MG-3 | ---- | . |
| MW-4 | HF-4 | . |
| MG-4 | HFL-4 | . |
| MW-5 | HF-5 | . |
| MG-5 | HFL-5 | . |
| MW-6 | HF-6 | . |
| MG-6 | HFL-6 | . |
| MW-7 | HF-7 | . |
| MG-7 | HFL-7 | . |
| MW-8 | HF-8 | . |
| MG-8 | HFL-8 | . |

AP

AURORA EQUIVALENTS TO HEIM HMX & HFX SERIES

| MALE | | |
|------------|----------|------------|
| Aurora P/N | Heim P/N | Price Each |
| XAM-4Z | HMX-4G | . |
| XAB-4Z | HMXL-4G | . |
| XAM-5Z | HMX-5G | . |
| XAB-5Z | ---- | . |
| XAM-6Z | HMX-6G | . |
| XAB-6Z | HMXL-6G | . |
| XAM-7Z | HMX-7G | . |
| XAB-7Z | HMXL-7G | . |
| XAM-8Z | HMX-8G | . |
| XAB-8Z | HMXL-8G | . |

| FEMALE | | |
|------------|----------|------------|
| Aurora P/N | Heim P/N | Price Each |
| AW-4Z | HFX-4G | . |
| AG-4Z | HFXL-4G | . |
| AW-5Z | HFX-5G | . |
| AG-5Z | HFXL-5G | . |
| AW-6Z | ---- | . |
| AG-6Z | HFXL-6G | . |
| AW-7Z | HFX-7G | . |
| AG-7Z | HFXL-7G | . |
| AW-8Z | HFX-8G | . |
| AG-8Z | HFXL-8G | . |

AURORA EQUIVALENTS TO HEIM HMR & HFR SERIES

| MALE | | |
|------------|----------|------------|
| Aurora P/N | Heim P/N | Price Each |
| MM-3T | HMR-3 | . |
| MB-3T | HMRL-3 | . |
| MM-4T | HMR-4 | . |
| MB-4T | HMRL-4 | . |
| MM-5T | HMR-5 | . |
| MB-5T | HMRL-5 | . |
| MM-6T | HMR-6 | . |
| MB-6T | HMRL-6 | . |
| MM-7T | HMR-7 | . |
| MB-7T | HMRL-7 | . |
| MM-8T | HMR-8 | . |
| MB-8T | HMRL-8 | . |

| FEMALE | | |
|------------|----------|------------|
| Aurora P/N | Heim P/N | Price Each |
| MW-3T | HFR-3 | . |
| MG-3T | HFRL-3 | . |
| MW-4T | HFR-4 | . |
| MG-4T | HFRL-4 | . |
| MW-5T | HFR-5 | . |
| MW-6T | HFR-6 | . |
| MG-6T | HFRL-6 | . |
| MW-7T | HFR-7 | . |
| MG-7T | HFRL-7 | . |
| MW-8T | HFR-8 | . |
| MG-8T | HFRL-8 | . |

Refer to HEIM Bearing Chart On Previous Pages for Dimensions on Aurora Bearings.

AURORA BEARINGS

AURORA EQUIVALENTS TO HEIM M, ML, MD, F, & FL SERIES

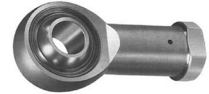


| MALE | | | FEMALE | | |
|------------|--------------|-----------|------------|--------------|-----------|
| Aurora P/N | Aurora Price | Heim P/N | Aurora P/N | Aurora Price | Heim P/N |
| GMM-3M-470 | . | M34-14M | GMW-3M-470 | . | F35-14M |
| GMB-3M-470 | . | ML34-14M | GMG-3M-470 | . | FL34-14M |
| GMM-3M-570 | . | MD35-14M | GMW-3M-471 | . | F347-14M |
| GMB-3M-570 | . | MDL35-14M | GMG-3M-471 | . | FL347-14M |
| GMM-3M-670 | . | MD36-14M | GMW-3M-480 | . | F35-14M |
| GMB-3M-670 | . | MDL36-14M | GMG-3M-480 | --- | FL35-14M |
| GMM-3M-680 | . | MD36-16M | GMW-4M-470 | . | F44-14M |
| GMB-3M-680 | . | MDL36-16M | GMG-4M-470 | --- | FL44-14M |
| GMM-4M-470 | . | M44-14M | GMW-4M-595 | . | F45-19M |
| GMB-4M-470 | . | ML44-14M | | | |
| GMM-4M-675 | . | MD46-15M | | | |
| GMM-4M-680 | . | MD46-16M | | | |
| GMB-4M-680 | . | MDL46-16M | | | |

AP



AURORA EQUIVALENTS TO HEIM HFE & HME SERIES



| MALE | | | FEMALE | | |
|------------|----------|--------------|------------|----------|--------------|
| Aurora P/N | Heim P/N | Aurora Price | Aurora P/N | Heim P/N | Aurora Price |
| MW-3TM-125 | HFE-3 | . | MM-3TM-125 | HME-3 | . |
| MG-3TM-125 | HELE-3 | . | MB-3TM-125 | HMLE-3 | . |
| MW-4TM-125 | HFE-4 | . | MM-4TM-125 | HME-4 | . |
| MG-4TM-125 | HFEL-4 | . | MB-4TM-125 | HMLE-4 | . |
| MW-5TM-125 | HFE-5 | . | MM-5TM-125 | HME-5 | . |
| MG-5TM-125 | HELE-5 | . | MB-5TM-125 | HMLE-5 | . |



AURORA EQUIVALENTS TO HEIM LS, LHA, & LSS SERIES



| LCOM Series Large Size Spherical Bearings | | | COM Series Spherical Bearings | | | COM-KH Series Spherical Bearings | | |
|---|----------|-------|-------------------------------|----------|-------|----------------------------------|----------|-------|
| Aurora P/N | Heim P/N | Price | Aurora P/N | Heim P/N | Price | Aurora P/N | Heim P/N | Price |
| LCOM-3 | LS-3 | . | COM-3 | LSS-3 | . | COM-3KH | LHA-3 | --- |
| LCOM-4 | LS-4 | . | COM-5 | LSS-5 | . | COM-4KH | LHA-4 | . |
| LCOM-5 | LS-5 | . | COM-6 | LSS-6 | . | COM-5KH | LHA-5 | . |
| LCOM-6 | LS-6 | . | COM-7 | LSS-7 | --- | COM-6KH | LHA-6 | . |
| LCOM-7 | LS-7 | . | COM-9 | LSS-9 | . | COM-7KH | LHA-7 | . |
| LCOM-8 | LS-8 | . | COM-14 | LSS-14 | . | COM-8KH | LHA-8 | . |
| | | | COM-16 | LSS-16 | . | COM-9KH | LHA-9 | . |
| | | | | | | COM-10KH | LHA-10 | . |
| | | | | | | COM-12KH | LHA-12 | . |
| | | | | | | COM-14KH | LHA-14 | . |
| | | | | | | COM-16KH | LHA-16 | . |



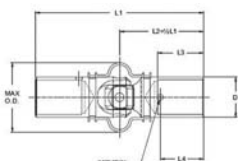
AURORA CM-S & CB-S MALE ROD ENDS WITH STUDS



| Rod End no. | | Dimension in inches | | | | | | | | | |
|-------------|-----------|---------------------|----------|--------|----------------|----------|----------|--------|---------------|-------------------|------------|
| Right Hand | Left Hand | H Ref. | A ± .015 | D Ref. | C +.062 -0.031 | L ± .015 | N ± .010 | M Ref. | Thread UNF-3A | a° Misalign Angle | Price Each |
| CM-3S* | CB-3S* | .234 | 1.250 | .625 | .750 | 1.000 | .500 | .437 | 10-32 | 50 | . |
| CM-4S* | CB-4S* | .250 | 1.562 | .750 | 1.000 | 1.031 | .562 | .500 | 1/4-28 | 50 | . |
| CM-5S* | CB-5S* | .312 | 1.875 | .875 | 1.250 | 1.219 | .687 | .593 | 5/16-24 | 50 | . |
| CM-6S | CB-6S | .359 | 1.938 | 1.000 | 1.250 | 1.562 | .906 | .812 | 3/8-24 | 50 | . |
| CM-7S | CB-7S | .406 | 2.125 | 1.125 | 1.375 | 1.750 | 1.062 | .937 | 7/16-20 | 50 | . |
| CM-8S | CB-8S | .453 | 2.438 | 1.312 | 1.500 | 2.000 | 1.125 | 1.000 | 1/2-20 | 50 | . |
| CM-10S | CB-10S | .484 | 2.625 | 1.500 | 1.625 | 2.500 | 1.500 | 1.375 | 5/8-18 | 50 | . |
| CM-12S | CB-12S | .593 | 2.875 | 1.750 | 1.750 | 3.000 | 1.812 | 1.625 | 3/4-16 | 50 | . |

* Grease fittings not available on these sizes. Units are supplied without grease fittings.

BEARINGS – UNIVERSAL JOINTS



MS20271 UNIVERSAL JOINTS

Built to conform with and exceed all requirements stipulated in Spec. MIL-J-6193A. High axial and torsional strengths, high strength-weight ratio, no replacement during anticipated service life of aircraft on most installations, permanent lubrication.

| Part No. | Nominal Size (In.) | Price Ea |
|-------------|--------------------|----------|
| MS20271-B6 | 3/8 | . |
| MS20271-B8 | 1/2 | . |
| MS20271-B10 | 5/8 | . |
| MS20271-B12 | 3/4 | . |
| MS20271-B14 | 7/8 | . |



| Dash # | +.000, -.002 (+.000, -.051) Outside Dia. | | +/- .015 (+/- .381) Overall Length | | +.031, -.000 (-.787, -.000) Bore Depth | | +.004, -.025 (+.102, -.025) Bore Dia. | | +/- .015 (+/- .381) Insp. Hole Loc. | | Max Dia. (+.102, -.025) Cover Dia. | | Weight Max | | Price |
|--------|--|-------|--|-------|--|-------|---|-------|---|-------|--|-------|---------------|------|-------|
| | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | lbs. | kg. | |
| B6 | .372 | 9.45 | 2.0 | 50.80 | .500 | 12.70 | .250 | 6.35 | .437 | 11.10 | .781 | 19.84 | .07 | .032 | . |
| B8 | .495 | 12.57 | 2.625 | 66.67 | .625 | 15.88 | .375 | 9.52 | .562 | 14.27 | 1.031 | 26.19 | .09 | .041 | . |
| B10 | .620 | 15.75 | 2.750 | 69.85 | .750 | 19.05 | .500 | 12.70 | .687 | 17.45 | 1.156 | 29.36 | .18 | .082 | . |
| B12 | .745 | 18.92 | 3.187 | 80.95 | .875 | 22.22 | .625 | 15.88 | .812 | 20.62 | 1.437 | 36.50 | .24 | .109 | . |
| B14 | .870 | 22.10 | 3.625 | 92.07 | 1.00 | 25.40 | .750 | 19.05 | .937 | 23.80 | 1.562 | 39.67 | .35 | .159 | . |

*Five hour test at 15° angle.

TORSIONAL OVERLOADS

AXIAL OVERLOADS



Temporary torsional overloads as great as 80% of rated ultimate have been handled by these universal joints without harmful binding.

Temporary axial overloads ranging up to 150% in excess of rated ultimate have been imposed without binding. These characteristics insure high safety factors under the most difficult operating conditions.



H-9426 BALL JOINT

* Hex: 1/2 Inch * Thread: 5/16-18 * Ball: 10 mm
P/N 06-00675.....

BALL JOINT ASSEMBLIES

COMMERCIAL

| Ball Joint Style | Female End | Male End | Part No. | Price |
|---|------------|----------|----------|-------|
| Is similar to AN276-6 but no longer tapered | 1/4-28 | 1/4-28 | 05-07300 | . |
| Commercial | 10-32 | 1/4-28 | 05-07400 | . |
| Commercial | 10-32 | 10-32 | 05-07500 | . |
| Commercial | 1/4-28 | 1/4-28 | 05-07600 | . |

GEARS, CHAINS, SPROCKETS AND BEARINGS



BOSTON GEAR PRODUCTS

STEEL SPROCKETS - These sprockets have many applications in a control system. Hub type.

| Sprocket Part No. | Chain No. | Size | Teeth | Price |
|-------------------|-----------|------|-------|-------|
| 05-03441 | 1/4" | 12 | | |
| 25B15 | 1/4" | 15 | | |
| 05-03442 | 1/4" | 20 | | |
| 35B14 | 3/8" | 14 | | |

ROLLER CHAIN - These chains fit above sprockets.

| | | |
|-------------------------------|-------------------|--|
| 1/4" Chain - 10 Ft. | P/N 05-29325 | |
| 3/8" Chain - 10 Ft. | P/N 05-29335 | |
| Extra Links - S25 | P/N 05-29300 | |
| Extra Links - S35 | P/N 05-29350 | |
| FB-35-1.....Flange Bearing | G-481-G Gear | |
| FB-35-2.....Flange Bearing | G-481Y-P Pinion | |
| FB-1012-4.....Flange Bearing | NF-14-6-8 Bearing | |
| FB-1013-8.....Flange Bearing | NF-16-8-9 Bearing | |
| FB-1620-10.....Flange Bearing | | |
| FB-46-2.....Flange Bearing | | |

BUSHINGS - As used on the Solitaire Sailplane.

| Bushing Part No. | Price |
|------------------|-------|
| FF520-10 | |
| FF620 | |

COMPLETE LINE OF BOSTON GEAR PRODUCTS AVAILABLE

BRONZE BUSHINGS SS-610-8



Cast Bronze bearings fit a wide range of applications.

Key Benefits:

High Strength, Excellent Machinability

P/N 04-01937.....



ASSORTED SPRINGS

| Spring | Part No. | Application | Spring Type | Length | Price Each |
|-----------------------|----------|-------------|-------------|---------|------------|
| Century Spring #186-C | 01-27200 | VariEze | Tension | 2" | . |
| Rudder Return Spring | 01-27300 | " | Tension | 4 1/2" | . |
| Landing Brake | 01-27600 | VE/Long-EZ | Tension | 10" | . |
| Tension Spring* | 01-37500 | " | Tension | 30" | . |
| Landing Brake | 01-27900 | Cozy | Tension | 12 1/2" | . |

SINTERED BRONZE OIL IMPREGNATED BEARINGS

PLAIN BEARINGS

| Part Number | Hole ID | Hole OD | Length | Price |
|-------------|---------|---------|--------|-------|
| 05-01977 | 3/16 | 5/16 | 3/4" | . |
| 05-01976 | 1/4 | 3/8 | 1" | . |
| 05-01974 | 1/2 | 3/4 | 3/4" | . |
| 05-01975 | 1/2 | 3/4 | 3/4" | . |
| 05-01979 | 9/16 | 3/4 | 1" | . |
| 05-01978 | 5/8 | 3/4 | 1" | . |
| 05-01891 | 3/4 | 7/8 | 1" | . |

FLANGE BEARINGS

| Part Number | Hole ID | Hole OD | Length | Flange OD | Flange Thickness | Price |
|-------------|---------|---------|--------|-----------|------------------|-------|
| 05-01949 | 1/4 | 3/8 | 1/4" | 15/32 | 1/16 | . |
| 05-01947 | 1/2 | 5/8 | 1/2" | 7/8 | 1/16 | . |
| 05-01946 | 1/2 | 5/8 | 1" | 7/8 | 1/16 | . |
| 05-01948 | 1/2 | 3/4 | 1" | 15/16 | 1/8 | . |
| 05-01951 | 5/8 | 3/4 | 1/2" | 1 | 3/32 | . |
| 04-01638 | 5/8 | 3/4 | 1" | 1 | 3/32 | . |
| 05-01950 | 3/4 | 7/8 | 3/4 | 1-1/8 | 1/8 | . |
| 05-01945 | 1 | 1-1/4 | 3/4 | 1-5/8 | 1/8 | . |



SINGLE-ROW TAPERED ROLLER BEARINGS

The most basic and widely used tapered bearing, the single-row type consists of the cone assembly and the cup. It is usually fitted as one of an opposing pair. During equipment assembly, single-row bearings can be set to the required clearance (endplay) or preload condition to optimize performance. Single-row tapered roller bearings have positive roller alignment that ensures true rolling motion and generates a "seating force" that pushes the roller against the cone large rib. This seating force prevents the rollers from skewing off apex, thereby keeping them positively aligned and located against the cone large rib.
P/N 05-29749.....

BELLCRANK BEARINGS



| Part No. | Bore | Flange Dia. | Race Width | Price Each |
|-------------------|-------|-------------|------------|------------|
| BC4W10* (AN218-4) | 1/4" | 1-5/8" | 5/8" | . |
| BC5W11 | 5/16" | 1-11/16" | 5/8" | . |

*Military P/N AN218P4 / MS20218-1

All bearings inspected per MIL-I45208A. 100% traceable. Currently installed on new and rebuilt certified aircraft. Prepacked with lubricant conforming to MIL-G-23827

AP

THROTTLES – CONTROLS

ACS CONTROLS

The ACS line of controls was manufactured by Aircraft Spruce and Specialty Company from 1980 to 1985. As of June, 1985 the controls have been manufactured by ACS Products Company in Lake Havasu City, Arizona. The manufacturing and inspection procedures have been approved by the FAA and original equipment manufacturers. The following engineering data will aid in properly identifying the control most suited to each individual requirement. Also shown are some available options for the controls such as plastic protective covering and steel sleeves for clamping the control to the aircraft structure.

The ACS A-790 vernier control and the A-800 friction lock control have been approved by the FAA for installation in the Cessna 150, 152, & 172 series aircraft.

ENGINEERING DATA

| Control Model No. | Control Type | Stroke at 0 Routing | Decrease in Stroke per 360° of Bend | Control Model No. | Control Type | Stroke at 0° Routing | Decrease fStroke per 360° of Bend |
|-------------------|------------------------|---------------------|-------------------------------------|-------------------|------------------------|----------------------|-----------------------------------|
| A-700 | Button Lock (Wire End) | 4.00** | 0.50" | A810 | Friction Lock (1/4-28) | 3.50" | 0.35" |
| A-730 | Glide Free (Wire End) | 4.00** | 0.50" | A920 | Push-Pull (10-32) | 3.37" | 0.35" |
| A-740 | Ratchet (Wire End) | 4.00** | 0.50" | A930 | Push-Pull (1/4-28) | 3.37" | 0.35" |
| A-750 | Vernier (10-32) | 3.37** | 0.35" | A970 | Vernier (1/4-28) | 3.50" | 0.35" |
| A-790 | Vernier (Wire End) | 4.00** | 0.35" | A1550 | Push-Pull (10-32) with | 3.37" | 0.35" |
| A-800 | Friction Lock (10-32) | 3.37** | 0.35" | | Bulkhead Fittings | | |

*Length of exposed wire. **Recommended minimum bending radius for all controls is 5" (never less than 3")

PLASTIC COVERING ON CONTROL CASING

All ACS controls can be supplied with a black Polyolefin (PO) protective cover. Price of the PO cover carries a base price of \$3.00 plus the length of control in ft. multiplied by 1.50 for lengths to 10 ft. For lengths over 10 ft., use \$3.00 base price plus \$1.90/ft. for PO cover plus a 425 set-up fee. Example: Cost of PO cover on 5 ft. control is \$3.00 plus 5 x 1.40 = \$10.00. Cost of PO cover on 15 ft. control is \$3.00 plus 15 x 1.90 = \$31.50.

STEEL SLEEVES ON CONTROL CASING

Cadmium plated 2" long steel sleeves can be added to the casing to provide clamping points for securing the control to the aircraft structure. Specify sleeve location (measurement taken from under the panel nut to mid-point of sleeve). Sleeves are normally swaged to the casing but will be left unswaged when specified. Add \$7.50 for installation of sleeves on A730 & A740 controls. **Price/Sleeve \$4.00**

THREADED STEEL SLEEVES ON CONTROL CASING

Threaded steel sleeves ("bulkhead" fittings) can be added to the casing to provide secure clamping of the control where it passes through a bulkhead. The cadmium plated sleeves are 2" long, with 1-1/2" length of 7/16-20 threads. Specify sleeve location (measurement taken from under the panel nut to mid-point of sleeve). Sleeves are normally swaged to the casing but will be left unswaged when specified. Add \$7.50 for installation of sleeves on A730 & A740 controls. **Price/Sleeve \$6.00**

HOW TO ORDER CONTROLS

STOCK CONTROLS - All stock controls are identified by a part number as shown in the descriptions of the controls. To order a stock control, specify control type, knob color, length to nearest 1/8" (measured as described in text), and any added features such as PO cover on flexible casing or steel sleeves centered at specified distances from panel nut (lengths of stock controls are in whole-foot increments and only lengths listed are stocked). Include 7-digit part number as shown in text.

SPECIAL-LENGTH CONTROLS - If you require a special-length control, specify control type, knob color, length to nearest 1/8" and any added features such as PO cover, etc. Special-length controls carry a set-up charge in addition to the cost of the control (calculated as described in the texts).

CUSTOM CONTROLS - If you do not find the type of control you require in this catalog, send a detailed sketch with dimensions, or the old control as a sample, to Aircraft Spruce & Specialty Co., 225 Airport Circle, Corona, CA 92880-2527 (1-800-824-1930). Custom controls are priced like similar stock controls but with a \$35 set-up and engineering charge added, plus costs for any special parts which must be fabricated for the control.

VERNIER CONTROLS

Vernier controls assure smooth operation - cannot creep. For coarse adjustment, depress center button and push or pull. For fine adjustment, turn knob. Smooth acting at all temperatures. Casing is made of tightly wound galvanized steel wire. Inner shaft is stainless steel cable (Models A-750 and A-970) or stainless steel wire (Model A-790). Low-friction operation is provided by an internal extruded Teflon liner. Controls have 1-1/4" dia. plastic knob with 3/4" dia. aluminum release button. A protective black PVC cover is available as an option on controls. Choice of knob color - black, red or blue (FAA Color Code: Black - Throttle, Red - Mixture, Blue - Prop), and knob design (see below).



Throttle Control
(Black) (FAA Color) Or White



Mixture Control
(Red)



Prop Control
(Blue)

The FAA has recently adopted a standard configuration for cockpit control knobs in production aircraft type-certificated after August 11, 1986. The red mixture knob is to have six raised ridges whereas the blue prop control is to have the opposite profile with six grooves. The black throttle control knob is to have a smooth profile. The different knob contours assure positive identification by touch.

Aircraft Spruce is proud to offer the ACS line of vernier controls with the new style FAA knobs at no extra charge. The throttles will be furnished with the smooth black knob, the mixture controls with the contoured red knob and the prop controls with the contoured blue knob. Look to Aircraft Spruce & Specialty Company for a complete selection of original installation or replacement controls at tremendous savings.

REPLACEMENT PARTS FOR ACS CONTROLS



ACS large Control Cable Grommet made of black synthetic rubber. P/N 05-02633.....

ACS Rubber Grommets N-549-A (Small) P/N 05-02634.....



ACS Large Black Knob A-663-A for the A-800 controls. 05-03416.....

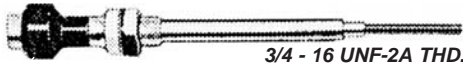


Replacement ball bearings for A790 Controls P/N 05-07700.....

Replacement ball bearings for A700/A-1840 Controls P/N 05-02618.....

NOTE: The Grommets (rubber boots) fit all ACS 10-32 threaded end controls, such as: A-750, A-800, A-770, A-1860, A-920, A-1550, A-1750, A-950, and A-1760.

THROTTLES – CONTROLS

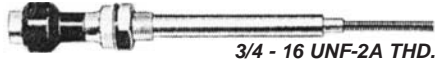


A-750 VERNIER CONTROL (10-32 THREADED END)

The A-750 vernier control has 10-32 threaded shaft for use with ball point or threaded terminal. Unique ball-socket construction permits the threaded end to swivel 8° in any direction. Casing has Teflon inner liner for low friction and heat resistance in high-temperature areas such as engine compartments. Features stainless steel end fittings, swivel, and end rod. Furnished with FAA-style knobs (Black, Red & Blue). Travel: 3-3/8". Wt. 1 lb. (4'). Stocked in the following lengths (measurement taken from under panel nut to end of threaded shaft with knob pushed in). Order by Part No.

| Knob Color | Length | | | | | |
|------------|----------|----------|----------|----------|----------|----------|
| | 3 Ft. | 4 Ft. | 5 Ft. | 6 Ft. | 7 Ft. | 8 Ft. |
| Black | 05-07736 | 05-07748 | 05-07760 | 05-07772 | 05-07784 | 05-07796 |
| Red | 05-07836 | 05-07848 | 05-07860 | 05-07872 | 05-07884 | 05-07896 |
| Blue | 05-07936 | 05-07948 | 05-07960 | 05-07972 | 05-07984 | 05-07996 |
| Price | | | | | | |

SPECIAL LENGTH CONTROLS - Use price of next longest control in chart (by foot) plus \$20.00 set-up charge for controls under 10 feet, \$40.00 for controls 10 feet and over. For controls longer than shown in chart, also add \$1.45 per foot for each foot over the longest length. Measure length from under panel nut to end of control with knob pushed in. Allow 2-3 weeks for special length controls.
Glasair Prop Control A-750 Blue 80" long.....P/N 05-07980



A-790 VERNIER CONTROL (SOLID-WIRE END)

The A-790 vernier control has a .078" dia. stainless steel wire core. Both the wire and Teflon lined flexible casing may be shortened as required. The Teflon liner provides low friction with heat resistance in high temperature areas such as engine compartments. Furnished with FAA-style knobs (Black, Red & Blue). Max. travel: 3-3/8". Stocked in the following lengths (measurement taken from under the panel nut to end of wire with knob pushed in). Order by Part Number.

| Knob Color | Length | | | | | |
|------------|----------|----------|----------|----------|----------|----------|
| | 3 Ft. | 4 Ft. | 5 Ft. | 6 Ft. | 7 Ft. | 8 Ft. |
| Black | 05-08036 | 05-08048 | 05-08060 | 05-08072 | 05-08084 | 05-08096 |
| Red | 05-08136 | 05-08148 | 05-08160 | 05-08172 | 05-08184 | 05-08196 |
| Blue | 05-08236 | 05-08248 | 05-08260 | 05-08272 | 05-08284 | 05-08296 |
| Price | | | | | | |

SPECIAL LENGTH CONTROLS - Use price of next longest control in chart (by foot) plus \$20.00 set-up charge for controls under 10 feet, \$40.00 for controls 10 feet and over. For controls longer than shown in chart, also add \$1.45 per foot for each foot over the longest length. Measure length from under panel nut to end of control with knob pushed in. Allow 2-3 weeks for special length controls.
 Replacement Ball Bearing for A-790 ControlsP/N 05-07700

AP

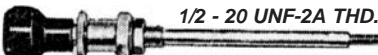


A-970 VERNIER CONTROL (1/4-28 THREADED END)

The A-970 vernier control is similar to the Model A-750 described above but with 1/4-28 threaded end (non-swiveling). Casing has Teflon inner liner for low friction and heat resistance in high-temperature areas such as engine compartments. Features stainless steel end fittings, swivel, and end rod. Furnished with FAA-style knobs (Black, Red & Blue). Travel: 3-3/8". Stocked in following lengths (measurement taken from under panel nut to end of threaded shaft with knob pushed in). Order by Part Number.

| Knob Color | Length | | | | | |
|------------|----------|----------|----------|----------|----------|----------|
| | 3 Ft. | 4 Ft. | 5 Ft. | 6 Ft. | 7 Ft. | 8 Ft. |
| Black | 05-08336 | 05-08348 | 05-08360 | 05-08372 | 05-08384 | 05-08396 |
| Red | 05-08436 | 05-08448 | 05-08460 | 05-08472 | 05-08484 | 05-08496 |
| Blue | 05-08536 | 05-08548 | 05-08560 | 05-08572 | 05-08584 | 05-08596 |
| Price | | | | | | |

SPECIAL LENGTH CONTROLS - Use price of next longest control in chart (by foot) plus \$20.00 set-up charge for controls under 10 feet, \$40.00 for controls 10 feet and over. For controls longer than shown in chart, also add \$1.45 per foot for each foot over the longest length. Measure length from under panel nut to end of control with knob pushed in. Allow 2-3 weeks for special length controls.



A-800 FRICTION LOCK CONTROL (10-32 THREADED END)

The A-800 friction lock control provides positive locking at any power setting by turning the chrome collet locking nut. Unique ball-socket construction permits 10-32 threaded end to swivel 8° in any direction. Casing has Teflon liner for low friction and heat resistance in high-temperature areas such as engine compartments. Travel: 3-3/8". The 1-1/4" dia. solid knob is available in black or blue (blue knob has smooth profile, not FAA style). Stocked in following lengths (measurement taken from under panel nut to end of threaded shaft with knob pushed in). Order by Part No.

| Knob Color | Length | | | | | |
|------------|----------|----------|----------|----------|----------|----------|
| | 3 Ft. | 4 Ft. | 5 Ft. | 6 Ft. | 7 Ft. | 8 Ft. |
| Black | 05-08636 | 05-08648 | 05-08660 | 05-08672 | 05-08684 | 05-08696 |
| Blue | 05-08836 | 05-08848 | 05-08860 | 05-08872 | 05-08884 | 05-08896 |
| Price | | | | | | |

SPECIAL LENGTH CONTROLS - Use price of next longest control in chart (by foot) plus \$20.00 set-up charge for controls under 10 feet, \$40.00 for controls 10 feet and over. For controls longer than shown in chart, also add \$1.45 per foot for each foot over the longest length. Measure length from under panel nut to end of control with knob pushed in. Allow 2-3 weeks for special length controls.

A-800 VANS CONTROL CABLE FOR RV AIRCRAFT

Specify knob color (black, blue, red), overall length of control (from under panel nut to end of control) and stroke (2-1/4", 2-1/2"). For controls over 72" long, add \$1.50 per foot. For custom stroke (2-3/8", 2-3/4", 3-1/2") add \$45 to cost of control.
 P/N 05-01436

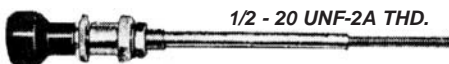


A-810 FRICTION LOCK CONTROL (1/4-28 THREADED END)

The A-810 friction lock control is similar to the A-800 control but with 1/4-28 threaded end (non-swiveling). With Teflon liner. Travel: 3-3/8". Knob styles and length measurement same as for A-800. Stocked in the following lengths. Order by Part Number.

| Knob Color | Length | | | | | |
|------------|----------|----------|----------|----------|----------|----------|
| | 3 Ft. | 4 Ft. | 5 Ft. | 6 Ft. | 7 Ft. | 8 Ft. |
| Black | 05-09236 | 05-09248 | 05-09260 | 05-09272 | 05-09284 | 05-09296 |
| Blue | 05-09336 | 05-09348 | 05-09360 | 05-09372 | 05-09384 | 05-09396 |
| Price | | | | | | |

SPECIAL LENGTH CONTROLS - Use price of next longest control in chart (by foot) plus \$20.00 set-up charge for controls under 10 feet, \$40.00 for controls 10 feet and over. For controls longer than shown in chart, also add \$1.45 per foot for each foot over the longest length. Measure length from under panel nut to end of control with knob pushed in. Allow 2-3 weeks for special length controls.



A-820 FRICTION LOCK CONTROL (SOLID-WIRE END)

The A820 friction lock control is similar to the A-800 control but with a solid wire end like the A-790 control above. With Teflon liner. Travel: 3-3/8". Knob styles and measurements same as for A-800.

| Knob Color | Length | | | | | |
|------------|----------|----------|----------|----------|----------|----------|
| | 3 Ft. | 4 Ft. | 5 Ft. | 6 Ft. | 7 Ft. | 8 Ft. |
| Black | 05-09436 | 05-09448 | 05-09460 | 05-09472 | 05-09484 | 05-09496 |
| Blue | 05-09536 | 05-09548 | 05-09560 | 05-09572 | 05-09584 | 05-09596 |
| Price | | | | | | |

SPECIAL LENGTH CONTROLS - Use price of next longest control in chart (by foot) plus \$20.00 set-up charge for controls under 10 feet, \$40.00 for controls 10 feet and over. For controls longer than shown in chart, also add \$1.45 per foot for each foot over the longest length. Measure length from under panel nut to end of control with knob pushed in. Allow 2-3 weeks for special length controls.

FAA APPROVED A-790 CONTROLS

The A-790-12 vernier mixture control. A790-12 is 53" long. Note: For Special Length Controls over 25 ft. Long, Add Extra \$15.00 to set-up fee.
 P/N A-790-12

THROTTLES – CONTROLS

A-700 BUTTON LOCK DASH CONTROL (7/16-20 UNF-2A THREADS / SOLID WIRE END)



Provides a 10-lb. locking force for light and medium service applications. Black or Red anodized aluminum knob with aluminum release button. Has .062" dia. stainless steel wire core in flexible metal casing. May be shortened as req. Max. travel 3-1/2". Order by Part No.

| Knob Color | Length | | | |
|------------|----------|----------|----------|----------|
| | 6 Ft. | 7 Ft. | 8 Ft. | 10 Ft. |
| Black | 05-13172 | 05-13184 | 05-13196 | 05-13120 |
| Red | 05-13272 | 05-13284 | 05-13296 | 05-13220 |
| Price | | | | |

Replacement Ball Bearing for A-700/A-1840 Controls
P/N 05-02618

A-770 BUTTON LOCK DASH CONTROL (10-32 THREADED END)



Same as A-700 control above except has 10-32 threaded end, with .078" dia. stainless steel inner cable and Teflon-lined flexible casing. Order by part number.

| Knob Color | Length | | | |
|------------|----------|----------|----------|----------|
| | 6 Ft. | 7 Ft. | 8 Ft. | 10 Ft. |
| Black | 05-16172 | 05-16184 | 05-16196 | 05-16120 |
| Red | 05-16272 | 05-16284 | 05-16296 | 05-16220 |
| Price | | | | |

A-780 BUTTON LOCK DASH CONTROL (1/4-28 THREADED END)



Same as A-700 control above except has 1/4-28 threaded end, with .078" dia. stainless steel inner cable and Teflon-lined flexible casing. Order by part number.

| Knob Color | Length | | | |
|------------|----------|----------|----------|----------|
| | 6 Ft. | 7 Ft. | 8 Ft. | 10 Ft. |
| Black | 05-16372 | 05-16384 | 05-16396 | 05-16320 |
| Red | 05-16472 | 05-16484 | 05-16496 | 05-16420 |
| Price | | | | |

A-1860 T-HANDLE BUTTON LOCK DASH CONTROL (10-32 THREADED END)



Same as A-770 control above except has black powder-coated aluminum T-handle with aluminum release button. Order by part number.

| Knob Color | Length | | | |
|------------|----------|----------|----------|----------|
| | 6 Ft. | 7 Ft. | 8 Ft. | 10 Ft. |
| Black | 05-16672 | 05-16684 | 05-16696 | 05-16620 |
| Price | | | | |

A-1840 T-HANDLE BUTTON LOCK DASH CONTROL (SOLID WIRE END)



Same as A-700 control above except has black powder-coated aluminum T-handle with aluminum release button. Order by part number.

| Knob Color | Length | | | |
|------------|----------|----------|----------|----------|
| | 6 Ft. | 7 Ft. | 8 Ft. | 10 Ft. |
| Black | 05-13572 | 05-13584 | 05-13596 | 05-13520 |
| Price | | | | |

EXTENSIONS FOR THREADED CONTROLS



Use these stainless steel extensions for moderate length adjustments to stock length controls. Stocked with 1 male & 1 female threaded end. The extensions provide the required increase in control length when threaded approximately half way onto the control. Furnished in 2", 3", 4", 5" and 6" lengths. All extensions have 10-32 threads. To order, add -2, -3, -4, or -5 to

Dash number for length. P/N 10376...../ea

A-1870 T-HANDLE BUTTON LOCK DASH CONTROL (1/4 - 28 THREADED END)



Same as A-780 control above except has black powder-coated aluminum T-handle with aluminum release button. Order by part number.

| Knob Color | Length | | | |
|------------|----------|----------|----------|----------|
| | 6 Ft. | 7 Ft. | 8 Ft. | 10 Ft. |
| Black | 05-16872 | 05-16884 | 05-16896 | 05-16820 |
| Price | | | | |

A-730 GLIDE FREE CONTROL (SOLID WIRE END)



Simple design for push-pull operation with low friction characteristics. Has .050" dia. stainless steel wire core in flexible metal casing with polyethylene liner. May be shortened as required. Max. travel 3-1/2". Available with black or red plastic knob. Order by Part No.

| Knob Color | Length | | | |
|------------|----------|----------|----------|----------|
| | 6 Ft. | 7 Ft. | 8 Ft. | 10 Ft. |
| Black | 05-13672 | 05-13684 | 05-13696 | 05-13620 |
| Red | 05-13772 | 05-13784 | 05-13796 | 05-13720 |
| Price | | | | |

A-1770 T-HANDLE GLIDE FREE CONTROL (SOLID WIRE END)



Same as A-730 above except with black powder coated aluminum T-handle. Order by part number.

| Knob Color | Length | | | |
|------------|----------|----------|----------|----------|
| | 6 Ft. | 7 Ft. | 8 Ft. | 10 Ft. |
| Black | 05-13872 | 05-13884 | 05-13896 | 05-13820 |
| Price | | | | |

A-740 RATCHET CONTROL (SOLID WIRE END)



Ratchet design provides detented positions under vibration conditions. Simple push-pull operation. Has .050" dia. stainless steel wire Core in flexible metal casing with polyethylene liner. May be shortened as required. Max. travel 3-1/2". Available with black or red plastic knob. Order by Part No.

| Knob Color | Length | | | |
|------------|----------|----------|----------|----------|
| | 6 Ft. | 7 Ft. | 8 Ft. | 10 Ft. |
| Black | 05-14072 | 05-14084 | 05-14096 | 05-14020 |
| Red | 05-14172 | 05-14184 | 05-14196 | 05-14120 |
| Price | | | | |

A-1780 T-HANDLE RATCHET CONTROL (SOLID WIRE END)



Same as A-740 above except with black powder coated aluminum T-handle. Order by part number.

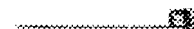
| Knob Color | Length | | | |
|------------|----------|----------|----------|----------|
| | 6 Ft. | 7 Ft. | 8 Ft. | 10 Ft. |
| Black | 05-14272 | 05-14284 | 05-14296 | 05-14220 |
| Price | | | | |

CONTROL END EXAMPLES

SOLID WIRE



SOLID WIRE SPEC END STYLE C



10-32 THREADED END



1/4"-28 THREADED END



THROTTLES – CONTROLS

A-920 PUSH-PULL CONTROL (10-32 THREADED END)



This control has 10-32 threaded ends with 8° swivel & 3-3/8" stroke. It has Teflon casing liner for use in high-temperature areas such as engine compartments, & .078" dia. stainless steel inner cable to minimize backlash. Stocked in the following lengths. Order by Part No.

| Control Length | Part No. | Price | Control Length | Part No. | Price |
|----------------|----------|-------|----------------|-----------|-------|
| 36" | 05-12736 | . | 96" | 05-12796 | . |
| 48" | 05-12748 | . | 108" | 05-127108 | . |
| 60" | 05-12760 | . | 120" | 05-127120 | . |
| 72" | 05-12772 | . | 132" | 05-127132 | . |
| 84" | 05-12784 | . | 144" | 05-127144 | . |

A-930 PUSH-PULL CONTROL (1/4-28 THREADED END)



This control has 1/4-28 threaded ends (nonswiveling) and 3-1/2" stroke. It has Teflon casing liner for use in high-temperature areas such as engine compartments, and .078" dia. stainless steel inner cable to minimize backlash. Stocked in the following lengths. Order by Part No.

| Control Length | Part No. | Price | Control Length | Part No. | Price |
|----------------|----------|-------|----------------|----------|-------|
| 36" | 05-30036 | . | 96" | 05-30096 | . |
| 48" | 05-30048 | . | 108" | 05-30108 | . |
| 60" | 05-30060 | . | 120" | 05-30120 | . |
| 72" | 05-30072 | . | 132" | 05-30132 | . |
| 84" | 05-30084 | . | 144" | 05-30144 | . |

SPECIAL LENGTH CONTROLS – Refer to chart for price of next longest control (by foot), and add a \$20.00 set-up charge for controls up to 10 feet, \$40.00 for controls over 10 feet. For lengths over 144" add \$1.45 for each extra foot or fraction of a foot. Allow 2 - 3 weeks.

A-1550 PUSH-PULL CONTROL (10-32 THREADED END)



This control has same design as A-920 control but with 7/16-20 threaded bulkhead fittings added at each end. Not stocked. Available at base price of \$31.25 + \$1.45 per ft. or fraction of a foot + \$20 set-up charge

A-1750 VERNIER CONTROL (10-32 THREADED END)



A-1750 Vernier Control: features - removable button and facenut and 2" of control panel threads for those difficult mounting applications. (10-32 threaded control rod like the A-750 control.)

| Knob Color | Length | | | | | |
|------------|----------|----------|----------|----------|----------|----------|
| | 3 Ft. | 4 Ft. | 5 Ft. | 6 Ft. | 7 Ft. | 8 Ft. |
| Black | 05-10236 | 05-10248 | 05-10260 | 05-10272 | 05-10284 | 05-10296 |
| Red | 05-10336 | 05-10348 | 05-10360 | 05-10372 | 05-10384 | 05-10396 |
| Blue | 05-10436 | 05-10448 | 05-10460 | 05-10472 | 05-10484 | 05-10496 |
| Price | . | . | . | . | . | . |

A-1970 VERNIER CONTROL (1/4-28 THREADED END)



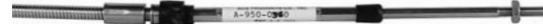
A-1970 Vernier Control same features as the A-1750 except it has the A-970 style (1/4 x 28 threaded rod)

| Knob Color | Length | | | | | |
|------------|----------|----------|----------|----------|----------|----------|
| | 3 Ft. | 4 Ft. | 5 Ft. | 6 Ft. | 7 Ft. | 8 Ft. |
| Black | 05-09636 | 05-09648 | 05-09660 | 05-09672 | 05-09684 | 05-09696 |
| Red | 05-09736 | 05-09748 | 05-09760 | 05-09772 | 05-09784 | 05-09796 |
| Blue | 05-09836 | 05-09848 | 05-09860 | 05-09872 | 05-09884 | 05-09896 |
| Price | . | . | . | . | . | . |

SPECIAL LENGTH CONTROLS – Use price of 10 ft. control plus \$1.45 per ft. or fraction of a foot, plus \$20.00 set-up charge for controls up to 10 feet, \$40.00 for controls over 10 feet. Allow 2 - 3 weeks.

CONTROLS WITH COILED WIRE END – Add \$7.50 to cost. To order, add "C" to part number. Controls with coiled end have only 3" stroke rather than 3-1/2" on standard end controls.

A-950 PUSH-PULL CONTROL (10-32 THREADS / SOLID WIRE END)



Same as A-920 control except one end is .078" dia. stainless steel wire. Special-length controls not required as the wire end can be cut off to desired length. Order by Part No.

| Control Length | Part No. | Price | Control Length | Part No. | Price |
|----------------|----------|-------|----------------|-----------|-------|
| 36" | 05-16936 | . | 96" | 05-16996 | . |
| 48" | 05-16948 | . | 108" | 05-169108 | . |
| 60" | 05-16960 | . | 120" | 05-169120 | . |
| 72" | 05-16972 | . | 132" | 05-169132 | . |
| 84" | 05-16984 | . | 144" | 05-169144 | . |

A-960 PUSH-PULL CONTROL (1/4-28 THREADS / SOLID WIRE END)



Same as A-930 control except one end is .078" dia. stainless steel wire. Special-length controls not required as the wire end can be cut off to desired length. Order by Part No.

| Control Length | Part No. | Price | Control Length | Part No. | Price |
|----------------|----------|-------|----------------|-----------|-------|
| 36" | 05-17036 | . | 96" | 05-17096 | . |
| 48" | 05-17048 | . | 108" | 05-170108 | . |
| 60" | 05-17060 | . | 120" | 05-170120 | . |
| 72" | 05-17072 | . | 132" | 05-170132 | . |
| 84" | 05-17084 | . | 144" | 05-170144 | . |

A1600 SERIES POSITIVE LOCK CONTROLS – SINGLE END



These positive-locking controls are available with white, black, or blue knob or T-handle style in black or aluminum. Complete part number with -W for white, -B for black knob, -BU for blue knob, -TB for t-handle black or -TA for T-handle aluminum. Special length controls are available at price for next longer control + \$1.45 per foot + \$20 set-up charge for controls up to 10 feet. \$40.00 for controls over 10 feet.

| Control | End | 6 Ft. | | 7 Ft. | | 8 Ft. | | 10 Ft. | |
|---------|-----------------|----------|-------|----------|-------|----------|-------|-----------|-------|
| | | Part No. | Price | Part No. | Price | Part No. | Price | Part No. | Price |
| A-1610 | .078 Wire | 05-17172 | . | 05-17184 | . | 05-17196 | . | 05-17120 | . |
| A-1620 | 10-32 Thread | 05-17272 | . | 05-17284 | . | 05-17296 | . | 05-172120 | . |
| A-1630 | 1-1/4-28 Thread | 05-17372 | . | 05-17384 | . | 05-17396 | . | 05-17320 | . |

POSITIVE LOCK CONTROLS – DUAL END



These positive-locking dual controls are available with white, black, or blue knob or T-handle style in black or aluminum. Complete part number with -W for white, -B for black knob, -BU for blue knob, -TB for t-handle black or -TA for T-handle aluminum. Special length controls are available for price of next longer control (for longest of the two cables) + \$1.45 per foot + \$20.00 set-up charge for controls up to 10 feet, \$40.00 for controls over 10 feet. Specify exact length of both cables when ordering.

| Control | End | 6 Ft. | | 7 Ft. | | 8 Ft. | | 10 Ft. | |
|---------|-----------------|----------|-------|----------|-------|----------|-------|----------|-------|
| | | Part No. | Price | Part No. | Price | Part No. | Price | Part No. | Price |
| A-1640 | .078 Wire | 05-17472 | . | 05-17484 | . | 05-17496 | . | 05-17420 | . |
| A-1650 | 10-32 Thread | 05-17572 | . | 05-17584 | . | 05-17596 | . | 05-17520 | . |
| A-1660 | 1-1/4-28 Thread | 05-17672 | . | 05-17684 | . | 05-17696 | . | 05-17620 | . |

A-1760 VERNIER CONTROL (10-32 THREADED END)



A-1760 Vernier Control like a A-750 control except it has a threaded bulkhead fitting in place of the grooved or notched fitting.

| Knob Color | Length | | | | | |
|------------|----------|----------|----------|----------|----------|----------|
| | 3 Ft. | 4 Ft. | 5 Ft. | 6 Ft. | 7 Ft. | 8 Ft. |
| Black | 05-09936 | 05-09948 | 05-09960 | 05-09972 | 05-09984 | 05-09996 |
| Red | 05-10036 | 05-10048 | 05-10060 | 05-10072 | 05-10084 | 05-10096 |
| Blue | 05-10136 | 05-10148 | 05-10160 | 05-10172 | 05-10184 | 05-10196 |
| Price | . | . | . | . | . | . |

A-1760 VANS RV CUSTOM CONTROL CABLE

Specify knob color (black, blue, red), overall length of control (from under panel nut to end of control) and stroke (2-1/4", 2-1/2"). For controls over 72" long, add \$1.50 per foot. For custom stroke (2-3/8", 2-3/4", 3-1/2") add \$45 to cost of control. P/N 05-01435

AP

THROTTLES – CONTROL ATTACHMENTS



FRICTION THROTTLE

Adjustable friction throttles with same construction as the ACS A-800 friction throttle but with a large (2" dia.) black solid plastic knob. Has 3/16" dia. 10-32 threaded end with 8° swivel. Stocked in the following lengths (measurement taken from under panel nut to end of threaded shaft with knob pushed in). Order by Part No.

| Length | Part No. | Price | Length | Part No. | Price |
|--------|----------|-------|--------|----------|-------|
| 3 Ft. | 05-13700 | . | 5 Ft. | 05-13900 | . |
| 4 Ft. | 05-13800 | . | 6 Ft. | 05-14000 | . |

SPECIAL LENGTH CONTROLS - Use price of next longest stock length above plus \$20 set-up charge. For lengths over 6 ft. also add \$1.45 per foot. Allow 2-3 weeks.

THROTTLE KNOB - Black solid plastic knob, 2" dia., with 1/4-28 internal threads. P/N05-29100

BUTTON TYPE DASH CONTROL



Button Type Dash Control designed for use with many control system applications. Easily installed. Operates smoothly. All adjustable parts are metal. 7/8" Dural button on 3/16" diameter shaft. Maximum travel is 2". Furnished in 5 ft. and 8 ft. length. May be shortened. Order Inserts separately.

5 Ft. Dash Control P/N 05-14200
8 Ft. Dash Control P/N 05-14300



INSERTS ONLY - Round pressure-sensitive labels, 3/4" dia. White lettering on black background. Order by part number. Basic P/N is 05-144-. Last two digits of P/N are as shown in above illustration.

Example: 05-14460 is "Starter" Ea

T-HANDLE DASH CONTROL

T-Handle dash control manufactured of duraluminum and brass. Locks positively, will not vibrate loose. One-fourth turn locks it in any position and will hold up to 200 lbs. Standard travel 2-1/2". T-handle is 1-3/4" wide. Can be mounted from front or rear of instrument panel. Complete with wire and casing which may be shortened.

SINGLE WIRE

5 Ft. Control..... P/N 05-15000
8 Ft. Control..... P/N 05-15100
12 Ft. Control..... P/N 05-15200

TWO WIRES - 8 Ft. Control..... P/N 05-15300

THROTTLE CONTROL

McFarlane Aviation offers FAA/PMA approved throttle, propeller, and mixture controls for most single engine Cessna and Piper aircraft. The "pilot friendly" knobs are all compression molded from reinforced phenolic resin. The phenolic knobs are hard and stable. Unlike the soft injection molded knobs, they resist scratching and the effects of sunlight and age. The McFarlane knobs meet the latest F.A.R. require ments for shape, and color. When ordering please provide: Make, Model, and Serial.

P/N 05-02486.....

EYEBALL FIREWALL ASSEMBLY

A swiveling firewall carry through assembly allows easy installation of cables with oblique entry/exit angles. Assembly includes the eyeball swivel, cable pass through, and line clasper. The Eyeball swivels up to 50 degrees and is clamped in place to complete installation. It comes in 0.125, 0.188, 0.218, and 0.260 inch sizes. The hole is easily enlarged for other sizes.

| Ball Matl. | Aluminum | | Steel | | Aluminum | |
|------------|----------|-------|----------|-------|----------|-------|
| | 0.08 lb. | | 0.07 lb. | | 0.10 lb. | |
| Model No. | SE961-B | | SE961-S | | TTP | |
| Hole Size | Part No. | Price | Part No. | Price | Part No. | Price |
| .125" | 05-03440 | . | 05-00764 | . | 05-00722 | . |
| .188" | 05-00957 | . | 05-00766 | . | 05-00723 | . |
| .218" | 05-01378 | . | 05-01381 | . | 05-01383 | . |
| .240" | 05-01379 | . | 05-01382 | . | 05-01384 | . |
| .250" | 05-00958 | . | 05-00767 | . | 05-00724 | . |
| .260" | 05-00959 | . | 05-00768 | . | 05-00726 | . |
| .375" | 05-01380 | . | ---- | ---- | ---- | ---- |

ROTAX DUAL CARBURETOR THROTTLE CONTROLS

Allows a neat, clean throttle installation without a clunky splitter box. Supersmooth friction lock, heavy duty 0.062 inch stainless steel inner wires.

| Description | Part No. | Price | Description | Part No. | Price |
|--------------|----------|-------|--------------|----------|-------|
| 4' Std Knob | 05-04385 | . | 6' Std Knob | 05-04386 | . |
| 6' Std Knob | 05-04387 | . | 4' Ball Knob | 05-04388 | . |
| 6' Ball Knob | 05-04389 | . | 8' Ball Knob | 05-04390 | . |

ATTACHING HARDWARE FOR CONTROLS



WIRE GRIP - Is a unique fitting which securely attaches to solid wire end push-pull cables. Uses a "pin vice" gripping action to attach a cable. The 5/8" long 10-32 threaded end will attach a clevis, ball joint, or other hardware for use with mixture controls, carb heat box, cabin air, or other applications, resulting in a clean, professional installation.

For .050 - .060 dia cables P/N 05-16000
For .078 dia cables P/N 05-16001

(Use P/N 05-16001 on A790 ACS controls)



AN486 TERMINALS - With 1/4-28 female threads. Fork hole dia. 3/16". AN486-3P has 17/64" fork opening. AN486-4P has 9/64" fork opening.

P/N AN486-3P.....
P/N AN486-4P.....



AN665-21R TERMINAL - Has 10-32 threads and 3/16" dia. fork hole. Furnished with clevis pin, cotter pin and locknut. P/N 05-02500.....



BOLT TYPE TERMINAL - Special 3/16" dia. bolt with drilled shank. With hex nuts and washers. Use instead of "bug" nut. P/N 05-16100

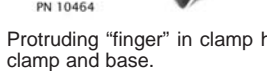


CONTROL HOUSING CLAMPS - AN742 plain loop type clamps to secure housing of throttles, dash controls, Bowden cable, etc. to airframe.

AN742-D3 for 3/16" O.D
AN742-D4 for 1/4" O.D

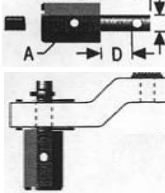


SLOTTED BRACKET CONTROL MOUNT - Notch of end fitting locks into slot of bracket to secure control. Steel Construction. P/N 10465



CLAMP STYLE CONTROL MOUNT - Protruding "finger" in clamp holds control in position. Two-piece steel clamp and base. P/N 10464.....

CABLE END "B" NUT



This universal NAP assembly will eliminate bent or smashed push-pull cable ends and get a strong hold at the same time. The cable end lays in a machined channel at the bottom of the screw hole. Tightening the compression screw snugs down on the cable end thus eliminating any potential crimping or smashing of the cable. Eliminates wear, possible cable breakage and enhances smooth push-pull operation. Complete with washers and cotter pin. All stainless steel, computer machined and easy to install.

| Part No. | A | B | C | D | Throttle, Wt., 26 oz..... P/N 05-16210...../ea. |
|----------|------|------|------|------|---|
| 05-16210 | .070 | .825 | 1.86 | .241 | Mixture, Wt., 29 oz P/N 05-16230...../ea. |
| 05-16230 | .086 | .825 | 2.49 | .255 | Cabin Heat, Wt., 26 oz... P/N 05-16240...../ea. |
| 05-16240 | .070 | .645 | 2.49 | .093 | Carb Heat..... P/N 05-16245...../ea. |
| 05-16245 | .070 | .645 | 1.86 | .093 | |

DISCOUNT: LESS 20% ON 25 OR MORE.

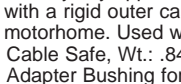
CABLE SAFE



A Safe "No-Slip-Grip" for your thru bulkhead cables. This unit prevents your throttle, mixture, choke or any push-pull cable from slipping at the firewall/ bulkhead location. Machined from lightweight aluminum, and final blue anodizing. Installation is simple with a drill and wrench. Once installed, the cable is threaded and the end nut is snugged down on the cable casing for positive encapsulation. Designed specifically for the aircraft industry, these fittings can be installed on virtually any application that requires a solid hold on any cable assembly with a rigid outer case. Thousands of applications: auto, boat, race car, motorhome. Used with 1/4" thru 7/32" diameter cable.

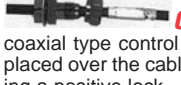
Cable Safe, Wt.: .84 oz..... P/N 05-16250/ea.
Adapter Bushing for 3/16" Cable Housings... P/N 05-16251/ea.

DISCOUNT: LESS 20% ON 25 OR MORE.

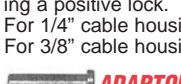


CABLE SAFE II - This Fitting is designed for use on coaxial type control cables. It has a two piece design to allow it to be placed over the cable inserted thru the firewall & tightened down, providing a positive lock.

For 1/4" cable housing P/N 05-16252/ea.
For 3/8" cable housings..... P/N 05-16253/ea.



ADAPTOR - For the cable safe to adapt down to 3/16" diameter cable housings. P/N 05-16251/ea.



ONE HOLE EYEBALL ASSEMBLY - Bulkhead carry through assembly with eyeball swivel, cable & line claspability. easy installation with one-hole installation. All aluminum construction.


.125 Dia.. 05-00722250 Dia. 05-00724
.188 Dia.. 05-00723260 Dia. 05-00726

THROTTLE QUADRANTS


THROTTLE QUADRANTS FOR RV'S

These quadrants are made from aircraft quality anodized aluminum for long life and corrosion resistance brass friction plates are adjustable to fit individual preferences. Black anodized top plates are machined and engraved on a CNC mill to exacting tolerances for an excellent finish. Side plates are laser cut insuring a perfect fit and feel. All hardware used meets AN standards. Note: All throttle quadrants require a AN665-21R clevis with an AN393-11 clevis pin.


The side mount style quadrants are intended for use in tandem airplanes such as the RV4, RV8, Sterdusters, Baby Great Lakes, One Design, Acro Sport & Sonerai. Center mount style is intended for use in side-by-side aircraft such as RV's, Sonex, Thorp T18 & Pulsars.




3 CONTROL LEVER
Side Mount Curved Top
Model: SMCT3L
Wt: 10 Oz.
7-3/4" H
x 4-3/4" W x 2" D
P/N 05-00698




2 CONTROL LEVER
Side Mount Flat Top
Model: CT82F
Wt: 8 Oz.
7-3/4" H x 4-3/4" W
x 1-1/2" D
P/N 05-00702




3 CONTROL LEVER
Center Mount
Curved Top
Model: CMCT3L
Wt: 12 Oz.
7-3/4" H x 7" W
x 2" D
P/N 05-00701




2 CONTROL LEVER
Center Mount
Curved Top Model:
CMCT2L
Wt: 10 Oz.
7-3/4" H x 7" W
x 2" D
P/N 05-00699



3 CONTROL LEVER
Side Mount Flat Top
Model: CT83F
Wt: 10 Oz.
7-3/4" H
x 4-3/4" W x 2" D
P/N 05-00703



2 CONTROL LEVER
Side Mount
Curved Top
Model: SMCT2L
Wt: 8 Oz.
7-3/4" H x 4-3/4" W
x 1-1/2" D
P/N 05-00697



RV8 REAR QUADRANT
A single lever rear quadrant with an engraved top plate and a short handle for better clearance. 8" x 5-1/4" x 2"
P/N 05-04531

ANDAIR THROTTLE QUADRANTS

The Andair Throttle Quadrant has primarily been designed for the RV range of aircraft. Over several years of flying the RV6, Andair has designed some unique features that give this quadrant it's great looks and a solid feel. The handle of the throttle lever is angled to give the best ergonomic position and grip for the right hand, which will fall naturally to take up this position. On top of the handle is the optional flap control switch. This is a key safety feature which allows the pilot to deploy the flaps without taking his or her hand off of the throttle. This give much greater control on approaches and go arounds. The flap control switch consists of two color coded push to make buttons, one for flaps down and one for flaps up. Each lever has a small ball race at the lower end and is guided by Teflon® pads at the top to give a feel that is both smooth and accurate. Along the base is a friction nut that can be used to lock all three levers, although this can be overridden with a gentle pressure. The mixture lever has a detent arrangement to positively hold it in the "cutoff" position.


| Model | Quadrant Includes | Part No. | Price |
|-------|---|----------|-------|
| TQX1 | Flap Switches, Propeller Lever, Mixture Lever | 05-04481 | .. |
| TQX2 | Propeller Lever, Mixture Lever | 05-04482 | .. |
| TQX3 | Flap Switches, Mixture Lever | 05-04483 | .. |
| TQX4 | Mixture Lever | 05-04484 | .. |
| TQX5 | Flap Switches | 05-04485 | .. |
| TQX6 | Quadrant Only | 05-04486 | .. |
| TQX7 | Flap Switches, Propeller Lever | 05-04487 | .. |
| TQX8 | Propeller Lever | 05-04488 | .. |

STARFLIGHT THROTTLE QUADRANT

This stylish, precision throttle quadrant was custom designed for Starflight's Lancair Legacy Cockpit though it can be easily incorporated in other aircraft. The throttle quadrant comes with four levers – throttle, propeller, mixture, and a fourth control for ram air, turbocharger, or parking brake. The throttle quadrant is easily reconfigured for 3, 2, or 1 lever for conventional or FA-DEC systems using appropriate sized spacers included. Top quality, all aluminum construction -- even the knobs are machined from aluminum and anodized for correct color. Requires at least 3.5" console width for installation.
P/N 05-04407


HOMEBUILDERS THROTTLE QUADRANTS

These quality quadrants have been in use in a wide variety of experimental and ultralight aircraft for over 25 years. Designed and manufactured to provide years of dependable, precise performance.




Model #1 – This external reversing hook-up quadrant can be used in tandem for dual control. Available with 1, 2, or 3 lever. Weight: 10 oz. Body size: 3.5" x 4".
Single lever quadrant..... P/N 05-15905
Two Lever Quadrant..... P/N 05-15910
Three Lever Quadrant..... P/N 05-15915

Add -F to P/N and \$10 to price for adjustable friction.




Model #2 – This internal non-reversing hook up quadrant is often used on RV-4 and similar homebuilt aircraft. Available in 1, 2, or 3 lever models. Weight: 12 oz. Body Size: 3.5" x 4".
Single lever Quadrant..... P/N 05-15920
Two Lever Quadrant..... P/N 05-15925
Three Lever Quadrant..... P/N 05-15930

Add -F to P/N and \$10 to price for adjustable friction.




Model #3 – This internal reversing hook up quadrant is ideal for a variety of different aircraft models. Available with 1, 2, or 3 lever. Weight: 10 oz. Body size: 3.5" x 4".
Single lever Quadrant..... P/N 05-15935
Two Lever Quadrant..... P/N 05-15940
Three Lever Quadrant..... P/N 05-15945


Add -F to P/N and \$10 to price for adjustable friction.



Model #4 – This popular quadrant was specifically designed for use on RV-3 and RV-4 aircraft and is also applicable to many other homebuilt aircraft. Furnished in two lever model only and furnished with adjustable friction. Weight: 12 oz. Body size: 3.5" x 4".
Two lever Quadrant..... P/N 05-15950



Model #5 – Panel mount quadrant can be an internal reversing or internal non-reversing. Available in S-series only. One, two or three levers. Friction or non-friction. Panel Mount Reversing listed below
Single lever Quadrant..... P/N 05-02436
Two Lever Quadrant..... P/N 05-02437
Three Lever Quadrant..... P/N 05-02438



Model #6 – Twin-engine model: Non-reversing internal or reversing internal unit with a four-arm configuration. L-series only. Friction or non-friction. Twin Engine Reversing Internal listed below.
Four lever Quadrant..... P/N 05-02364
Four lever Quadrant w/ Friction.. P/N 05-02365

T-BAR HANDLE FOR QUADRANTS

This handle is 3-1/2" long and 1-1/4" round and fits all of the Homebuilders Quadrants above. The arm slot is offset to one side. It is molded urethane and is very durable. Add -1 or -1F (as applicable) to the Part No. and \$25.00 to the price (example: 05-15925-1)

ACS THROTTLE QUADRANTS

Available in two lever designs. The 2-lever control has black plastic "Throttle" knob and red "Mixture" knob. The 3-lever control has blue "Prop" knob in addition to the throttle and mixture knobs. Built-in friction lock. Levers have 2-1/2" travel. Quadrants fit on left or right side of cockpit and can be used in tandem. Complete with aluminized Mylar knob inserts. Ends of throttle and prop levers have 3/16" dia. holes for attachment of push-pull controls with clevis terminals. End of mixture lever has .076" dia. hole to accept solid wire control such as Bowden cable.
Two-Lever Quadrant..... P/N 05-00960.....
Three-Lever Quadrant (pictured)..... P/N 05-00961.....

CENTER CONSOLE TURBINE 4 LEVER QUADRANT

Three main levers are chromed with anodized black "Throttle" knob, blue "Prop" knob and red "Fuel" knob. Also, equipped with red "Emergency FCU" override knob with "Safety pin". Throttle and Fuel levers are designed with Beta stop. These 2 levers pull out and down for fuel idle and fuel cut off. Both of these levers are designed with Beta adjustable CAM Follower bearing movements. Stroke for Throttle, Prop and Fuel is 3-3/8" with 10-32 Rod Ends, Stroke for Emergency FCU override is 2-5/8". All 4 Levers are set up for A-950 push – pull control with 10-32 threads. Throttle, Prop, and Fuel have front facing independent friction locking knobs. Not FAA Approved and for Experimental Use Only. P/N 05-03363.....

BOWDEN CABLE (SOLID WIRE ENDS)

Spiral-wound galvanized wire casing. Use for push-pull controls of any length. Inside cable dia. .078. Outside casing diameter 7/32".
P/N 05-15500...../ Ft.

BOWDEN CABLE CLAMP

Designed to provide a simple method of anchoring a typical wire wound cable. Used in anchor hole of 7/16" diameter.
For 3/16" Bowden Cable..... P/N 05-15705...../ea.
For 7/32" Bowden Cable..... P/N 05-03287...../ea.

AP

BEECHCRAFT ACCESSORIES – CONTROL WHEELS

BEECHCRAFT ACCESSORIES

Designed & built by real-world pilots, manufactured to the highest standards. These products are built for those incomparable Beechcraft. Years of experience and the highest quality materials and construction result in the best products available for Bonanzas & Barons. All have FAA STC/PMA as applicable.

BONANZA/BARON CONTROL YOKE LOCK



Protect your investment with this heat treated lock. It installs quickly and simply (no modification is needed) but cannot be removed without being unlocked. It is a permanent, direct replacement for the original equipment. Complete with the highest quality lock, instructions, and all hardware. P/N 05-00649

Optional clipboard for clearances or notes makes a stable flight center. Spring-loaded, it snaps out of the way in seconds.

Standard.....P/N 05-00650
Deluxe (with Quick Release).....P/N 05-01335

BEECH THROTTLE, MIXTURE, PROP KNOB SET



These high-strength knobs for Bonanzas are a big improvement over old, cracked original equipment and likely the best replacement knobs on the market. Bright color-coded space-age material will not crack or fade and will not get hot like aluminum knobs. P/N 05-00652

Push buttons only, with new screws P/N 05-00653

WINDOW VENT HINGE & LATCH KIT

For new windows only on Mooney, Piper, Socata, Commander.

P/N 05-01336

BEECH STORM WINDOW HINGE/LATCH KIT



Every Bonanza or Baron pilot will appreciate the quality workmanship in every one of these storm window hinge/latch kits. Professional construction means they work smoothly, and they fit standard factory window holes with no modifications.

Complete hinge/latch kit.....P/N 05-00654

Latch & Sticker only.....P/N 05-00655

Hinges Only.....P/N 05-00656

TRIKSLIDE DUAL THROTTLE MIXER



Trikslide is a dual throttle input-mixer/slider designed especially for trikes and ultralight aircraft. Trikslide eliminates the interaction between two throttle cables. It will mount on any round or square structural member and provides smooth slide action with a full 2" stroke. Features aluminum and delrin construction with universal mounting clamps and a universal control cable connector

which will fit all cable terminations. P/N 05-00782

HOMEBUILDERS CONTROL WHEELS



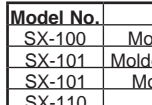
New lightweight, low cost wheel designed with the homebuilder in mind. Approximately same dimensions as above ACS control wheel but weighs only 15 oz. made of cast magnesium. Coated with light gray epoxy paint which can be used as finished or repainted if preferred. Drill blank mounting post as required. P/N 246-9

CONTROL YOKE UPGRADES



Now flaking & peeling finish on worn control yokes can be remedied cost effectively by these pilot-installable, semi-flexible, molded grips which are available with push-to-talk button built-into the top of the yoke (not the side). The Model SX-100 grips (pilot & copilot set) and optional, built-in, Model SX-101 plug-in push-to-talk button simply slip-over the thin, "ram's horn" control yokes of Cessna 150, 152, 172, 177, Grumman-American AA-1, AA-5 and early Mooney aircraft. Their thick, padded feel and built-in push-to-talk button add comfort, convenience & value to vintage airplanes. The top-mounted, low profile, miniature push-to-talk button supplied completely wired with plug, jack and coiled cord, is less likely to be pressed by accident, get in the way or slip out of position than bulky, side-strapped, units. Complete your updated yoke configuration with a pair of new model SX-110 center cushions, richly finished in black. Cushions fit neatly over centers of any control yokes.

STYLE SX-100



STYLE SX-101

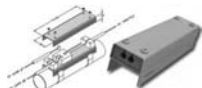
Model No. Description (set of 4) Part No. Price

| Model No. | Description (set of 4) | Part No. | Price |
|-----------|--|----------|-------|
| SX-100 | Molded Grips w/o built-in PTT switch | 05-16600 | . |
| SX-101 | Molded Grips w/1 built-in PTT switch(LH) | 05-16630 | . |
| SX-101 | Molded Grips w/2 PTT switch (L&R) | 05-16635 | . |
| SX-110 | Center Cushions (set of 2) | 05-16610 | . |

BEECHCRAFT MAIN GEAR BOLT



This is a replacement for discontinued Main Gear Bolt part number CA101-810089-1. The new part number is CA101-810089-1A. This part has been tested and is superior in tensile strength and fatigue and crack resistance. Eligible for Beechcraft 1900 series aircraft, this is a life limited part that meets all requirements for the full 5 year/10,000 cycle life. The part number and serial number are engraved on the bolt head. P/N 05-04163



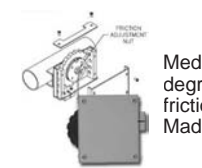
DUAL CARBURETOR SPLITTER

Splits a single throttle input into two outputs for dual carburetor installations. Clamp mounting. P/N 05-01823



DUAL CARBURETOR SPLITTER WITH OIL INJECTION

Splits a single throttle input into three outputs for dual carburetor installations with oil injection. Clamp mounting. P/N 05-01824



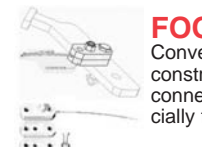
HAND THROTTLE

Medium torque rotation for single carburetors only. 270 degree rotation for fine throttle adjustment. Adjustable friction drag. Clamp mounting - no holes required. Made from weatherproof materials. P/N 05-01825



HAND THROTTLE

High torque, 2.5:1 internal gear reduction. For dual carburetors. 825 degree rotation for fine throttle adjustment. Adjustable friction drag. Clamp mounting - no holes required. Made from weatherproof materials. P/N 05-01826



FOOTPEDAL CABLE CONNECTOR

Convenient foot pedal throttle control. Aluminum/delrin construction with mounting hardware. Universal cable connector-fits all cable terminations. Designed especially for trikes and ultralight aircraft. P/N 05-01827



ACS CONTROL WHEEL A-1310

Designed to be more user friendly than standard control wheels. Mounting position can be raised or lowered one inch by rotating the mounting flange. All parts machined from 6061-T6 billet. The A-1310 Control has cavities for wiring, but does not come prewired or with a mic switch. They can be ordered with a hole drilled for the mic or can be drilled later. Wt: 26 oz. Mounting flange hole sizes: 3/4" or 7/8". Special smaller hole sizes: Add 10.00

3/4" Black Anodized.....P/N 05-02248
3/4" Bare Aluminum.....P/N 05-02279
7/8" Black Anodized.....P/N 05-02282
7/8" Bare Aluminum.....P/N 05-02284

BEECH BONANZA/BARON CONTROL WHEELS



These control wheels are identical in design to the new Beechcraft large ram's horn style wheels. They are powder coated with a highly durable material in the same color as current Raytheon control wheels. Peeling or yellowing that occurs on older Beech wheels has been eliminated by the powder coating process. This control wheel is a direct replacement for the Beech/Raytheon 60-524080-13, 14 (for F33A, F33C, V35B, A36, and B36TC) and , -17 (for F33A, F33C, A36, B36TC, and 58) control wheels. Can be installed on many other aircraft using FAA form 337 for field approval. FAA Form 8130-3. Hand crafted black leather wrapping is available for these control wheels. Each wheel is individually hand laced and custom fitted to the wheel. We can also hand wrap your existing Beech control wheel in leather. Send your control wheel to Aircraft Spruce in Corona, CA and allow 3 weeks for delivery. An installation kit is required for each control wheel, which includes two thumb plates, a blank face plate, and mounting hardware. A Davtron MB800 digital chronometer installed in the faceplate of the control wheel is also available.



The Basic Control Wheel (P/N 05-00545) now includes a white installation kit. If the black powder-coating option for this installation kit is desired it is an additional \$50.00

| Description | Part No. | Price |
|---|----------|-------|
| Basic Control Wheel & White Install Kit | 05-00545 | . |
| Leather wrapped control wheel install kit | 05-00548 | . |
| Chronometer with custom faceplate | 05-00549 | . |

AP

FUEL TANKS

FUEL WARNING SYSTEM



Float-action sensor in tank activates panel warning light when fuel supply is low. All-PBT unit, impervious to aviation fuel. Use AN 867-4 flange for mounting.

Sensor.....P/N 6905-400
Warning Light.....P/N 05-17660
Bulb(GE-330)P/N 11-04016

DISCOUNTS: 10% ON 6, 15% ON 12, 20% ON 50

INVERTED PICKUP TUBES



"Flop" tubes for inverted flight are made from Aeroquip 701-6 flexible hose. End fitting swaged onto hose has a 1/4" male

pipe thread attached to tank outlet. Available for any of the tanks listed, or others. Specify tank model and tube length. Minimum length available is 9"

9" P/N 05-20509 10".....P/N 05-20510
11" P/N 05-20511 12" P/N 05-20512
13" P/N 05-20513

Add \$1.80 to 13" price for each additional inch.

PICKUP TUBE ADAPTER

Specially machined AN912 fitting for connecting pickup tube to fuel tank.

For 12" tubes & longer.....P/N 10380.....

Specially machined AN912-12D for shorter than 12"

P/N 10380-1.....

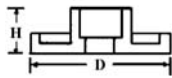
FLOP TUBE ADAPTER WITH SIDE OUTLET



This fitting eliminates the need to put an angle fitting on standard adapter. 1/4" female pipe thread on side and bottom & 1" male pipe or 3/4" male pipe on bottom. Use with AN867-6 or 8.

1" Male PipeP/N 05-20525
3/4" Male PipeP/N 05-20526

ALUMINUM WELDING FLANGES



| Part No. | Female Pipe Thread | Dia. "D" In | Height "H" In | Price Each |
|----------|--------------------|-------------|---------------|------------|
| AN867-1 | 1/8" | 1-1/2 | 7/16 | . |
| AN867-2 | 1/4" | 1-3/4 | 5/8 | . |
| AN867-3 | 3/8" | 1-7/8 | 5/8 | . |
| AN867-4 | 1/2" | 2 | 3/4 | . |
| AN867-6 | 3/4" | 2-1/4 | 13/16 | . |
| AN867-8 | 1" | 2-11/16" | 1" | . |

FINGER STRAINERS



Finger strainers are strainers for fuel tank outlets. Standard size features a brass fitting with 3/8" male pipe thread which fits AN867-3 welding flange, and 1/4" female pipe thread for valve or fuel line fitting. Screen is 16 mesh brass.

Large finger strainer has a 3/8"-NPT x 1/2"-M-NPT brass bushing with a T304 stainless steel screen.

Standard.... P/N 05-17700..... Large P/N 05-04445

RAVEN HEADER TANKS



Header tank used for any aerobatic aircraft such as Pitts Specials etc. Comes with mounts to attach to existing tank straps, clamps and weld-in fitting for main tank. 16" x 7" in diameter. Holds approximately 2-1/2 gallons. Weighs 3 lbs.

P/N 05-00913

RAVEN WING TANKS



Wing tank used to hold extra fuel or smoke oil in top wing of aerobatic biplanes.

S1-S Wing Tank.....P/N 05-00914
S1-C Wing Tank.....P/N 05-00915
Experimental S2, Eagle Wing Tank.....P/N 05-00916

FUEL TANK DRAIN FITTING



This specially designed fuel tank drain fitting minimizes drain flow vortexing that allows water and contaminants to remain in tank no matter how many times the drain cycle is repeated. Threads are 1/8" NPT - brass throughout P/N 05-28900

ULTRALIGHT FUEL TANKS



ULTRALIGHT 12-1A FUEL STRUT TANK

This consists of 1 strut tank, 1 pick-up cap and 1 filler cap. This tank can be mounted right on the strut and allow easy access for filling and to check levels. 4.5 Gallon, tank with cap and fillings

P/N 05-03065



ULTRALIGHT BVR 2-1K COMPLETE TANK KIT

2 tanks and hardware for Beaver RX550.

P/N 05-03066



ULTRALIGHT CHI 12-1K COMPLETE TANK KIT

2 tanks with hardware for chinook

P/N 05-03067

ALUMINUM FUEL TANKS



PITTS SPECIAL FUEL TANK

OPTIONAL TANK INSTALLATIONS

Sight Gauge (Fittings and Tubing) for Pitts or Skybolt Tanks - no installation charge.

P/N 05-29000

Flop Tube, Low Fuel Level Warning, Flush Filler Cap (specify type) - Add \$5.00 installation charge and cost of unit to price of tank.

ELECTRIC SENDER - Add \$15.00 installation charge and cost of unit to price of tank.

FUEL TANK HOLD DOWN STRAPS

Fabricated from .035 stainless steel. Straps are 1" wide x 36" long. For VariViggen Starduster & others. P/N 05-20400

ANTI-CHAFE CHANNEL FOR FUEL TANK STRAPS

Neoprene rubber extrusions to hold 1" wide metal fuel tank straps.

#9 Channel P/N 05-01800 Ft.

| Design | Capacity (Gallons) | Main Tank | | Tank for Inverted Flight | | Each Wing Tank | |
|-----------------|--------------------|-----------------------|----------|--------------------------|----------|----------------|----------|
| | | Part No. | Part No. | Part No. | Part No. | Part No. | Part No. |
| Acro-Sport II | 24 | | | | 05-18510 | | |
| Baby Greatlakes | 10 | | 05-03058 | | | | |
| Cougar | 23 | | 05-18600 | | | | |
| Cuby | 12.5 | | 05-18700 | | | | |
| FAA Bi-Plane | 16 | | 05-18800 | | | | |
| Fly Baby | 14 | | 05-18900 | | | | |
| Hatz Bi-Plane | 18 | | | | | | 05-19020 |
| Mustang I | 16 | | 05-19100 | | | | |
| Mustang II | 27 | | 05-19200 | | | | |
| Pitts Special | 19 | | | | 05-19310 | | |
| Pober Pixie | 12 | (Send Drwg. 05-19400) | | | | | 05-19420 |
| Skybolt | 29 | | | | 05-19510 | | 05-19520 |
| Smith Miniplane | 16 | | 05-19600 | | | | |
| Starduster I | 18 | | 05-19700 | | 05-19710 | | 05-19720 |
| Starduster II | 26 | | 05-19800 | | 05-19810 | | 05-19820 |
| Tailwind | | | 05-19950 | | | | |

SEE PRO-SEAL TANK SEALANT AND SLOSHING COMPONENTS IN COVERING SUPPLIES SECTION

CAUTION: Electric sender should not be installed in a tank with flop tube to prevent possible entanglement. Tank should be free of everything but flop tube. Use sight gauge with flop tube.

Prices are based on tanks manufactured to the original plans as issued by the designer. Minor modifications such as changes in tank fitting sizes or locations can be made at additional charge. Please submit all pertinent data with respect to desired changes at time of order.

ALLOW 2-3 WEEKS DELIVERY TIME ON ALL TANKS.

AP

CURTIS SUPERIOR VALVE COMPANY

CURTIS DRAIN VALVES

Curtis Superior Valve Co., Inc. Fuel and Oil Drain Valves have been the standard in the industry for over 60 years. Curtis valves are used in OEM applications and in the military aircraft. Most valves are made of high quality brass for resistance to corrosion and rusting, giving them long service life and extended seal life. Most Curtis Valves have a spiral to open and twist to lock for easy fuel sampling and oil draining.



*=TSO-C76, B= Brass, AA= Aluminum Alodine, A= Aluminum, BC= Brass/Cadmium Plated, SS= Stainless Steel

| Model Number | Thread Size | Installed Length | Material | Part No. | Price |
|-------------------------------|----------------|----------------------------|----------|----------|-------|
| CCA-1250 | 1/8" NPT | 1.358" | B | 05-04045 | . |
| CCA-1300 | 1/4" NPT | 1.690" | B | 05-04046 | . |
| CCA-1350 | 3/8" NPT | 1.920" | B | 05-04047 | . |
| CCA-1400 Valve* | 1/2" NPT | 1.685" | B | 05-03060 | . |
| CCA-1550 Valve* | 1/8" NPT | 1.052" | B | 05-01869 | . |
| CCA-1600 Valve* | 1/4" NPT | 1.340" | B | 05-01870 | . |
| CCA-1650 Valve* | 3/8" NPT | 1.510" | B | 05-01871 | . |
| CCA-1700 Valve* | 1/2" NPT | 1.685" | B | 05-01872 | . |
| CCA-3400 Valve* | 1/2" I.D. Hose | 1.337" | B | 05-01935 | . |
| CCA-3600 | 1/4" NPT | 1.690" | BC | 05-04048 | . |
| CCA-4300 Valve* | 7/16" 20 NF3 | .625" | BC | 05-03647 | . |
| CCA-4350 Valve* | 9/16" 18 UNF3 | .635" | BC | 05-03648 | . |
| CCA-4800 | 1/4" NPT | 1.690" | BC | 05-04049 | . |
| CCA-4850 Valve* | 1/8" NPT | 1.052" | BC | 05-00686 | . |
| CCA-4950 | 3/8" NPT | 1.920" | BC | 05-04050 | . |
| CCA-5400 Lock Wire Drilled* | 7/16" 20 NF3 | 1.205" | BC | 05-04056 | . |
| CCA-5800-1 Valve Non-Locking* | 7/16" 20 NF3 | .620" | BC | 05-03651 | . |
| CCA-5800-3 Valve Non-Locking* | 1/8" NPT | 1.205" | BC | 05-03694 | . |
| CCA-6000 | 9/16" 18 NF3 | 1.234" | BC | 05-04051 | . |
| CCA-7250 | 3/4" 16 NF3 | 1.483" | BC | 05-04052 | . |
| CCA-7450 Valve* | 1/8" NPT | 1.052" | BC | 05-03652 | . |
| CCA-7500-1 Flush Valve | 3/4" 16 NF3 | 1.437" | A | 05-03653 | . |
| CCA-31300 | 9/16" 18 NF3 | 1.234" | BC | 05-04053 | . |
| CCB-36100 | 3/4" 16 NF3 | 1.342" | AA | 05-04054 | . |
| CCA-36150 Valve* | 1/8" NPT | 1.054" | BC | 05-03654 | . |
| CCA-36400 | 6/16" 18 NF3 | 1.234" | BC | 05-04055 | . |
| CCA-39000 Valve* | 1/4" NPT | 1.340" | SS | 05-03655 | . |
| CCA-39500 Valve* | 9/16" 18 UNF3 | 1.084" | BC | 05-03693 | . |
| CCA-39550 Valve* | 5/8" 18 NF3 | 1.054" | B | 05-01873 | . |
| CCA-39560 Valve | 5/8" 18 NF3 | 2.000" | B | 05-03656 | . |
| CCB-4320 Flush Valve | 7/16" 20 NF3 | .835" | BC | 05-03657 | . |
| CCB-36450AF Flush Valve | 3/4" 16 NF3 | .755" | AA | 05-03658 | . |
| CCB-36700 Valve* | 1/8" NPT | 1.058" | BC | 05-03659 | . |
| CCB-36750 Valve* | 1/8" NPT | 1.058" | SS | 05-03660 | . |
| CCB-37000 Valve* | 1/2" NPT | 1.685" (Body) .875" (Stem) | B | 05-03061 | . |

AP

OIL DRAIN VALVE ASSEMBLIES



| Curtis Oil Drain Valves for Jabiru and Rotax | | | |
|---|--|----------|--------|
| Description | Application | Part No. | Prices |
| Curtis Oil Drain Valve - 1/2" - 20 Brass Lockwire Drilled Action-Spiral, Lock Open | Jabiru 2200, 3300 | 05-03698 | . |
| Curtis Oil Drain Valve - 12mm - 1.75mm Brass, Length 1.45" Lock Wire Drilled Action-Spiral, Lock Open | Rotax 912F2, 912F3, 912F4, 914F2, 914F3, 914F4 | 05-03697 | . |
| Curtis 90 Degree Adapter for Jabiru and Rotax | | | |
| Jabiru 90 Degree Adapter CCA-2480 | Jabiru 2200, 3300 | 08-06258 | . |
| Rotax 90 Degree Adapter Thread Size: 12mm-1.75mm, Internal/External Brass CCA-2470 | Rotax 912F2, 912F3, 912F4, 914F2, 914F3, 914F4 | 08-06257 | . |
| Oil Drain Valve Adapter Assembly | | | |
| Oil Drain Valve Adapter Assembly | Rotax | 05-03539 | . |
| Oil Drain Valve Adapter Assembly | Jabiru | 05-03540 | . |

CURTIS SUPERIOR REMOVAL TOOLS

Helps with the installation and removal of Curtis flush mounted valves without damage. Eliminates the problem of damage as well as valve torque.

| Name | Works with valve: | Part No. | Price |
|----------|--|----------|-------|
| CST-18 | CAA-1250, 1550, 4850, 7450, 9950, 36150, CCB-36750 | 12-02244 | . |
| CST-78 | CCA-1400, 1700, 39550, 39560, CCB-3700 | 12-02245 | . |
| CST-916 | CCA-1300, 1600, 3600, 4800, 4900, 5900, 39000 | 12-02246 | . |
| CST-1116 | CCA-1350, 1650, 2440, 2450, 2460, 4320, 4950, 5400, 5800-1 | 12-02090 | . |

QUICK DRAIN HOSES

A simple push and twist action locks the CCB-39600 Series Quick Drain Hose in place and opens the drain. Fuel / oil flows through 5' of high grade vinyl tubing preventing spillage.

| Quick Drain Hose | Connector Color | Used with Valves | Part No. | Price |
|------------------|-----------------|---|----------|-------|
| CCB- 39600-1 | Black | CCA-1400, CCA-1700, CCA-39550 | 05-00138 | . |
| CCB- 39600-2 | Blue | CCA-1350, CCA-1650, CCA-4950 | 05-00139 | . |
| CCB- 39600-3 | Yellow | CCA-1300, CCA-1600, CCA-3400, CCA-3600, CCA-4800, CCA-4900, CCA-39000 | 05-00141 | . |
| CCB- 39600-4 | Silver | CCA-4350, CCA-7250, CCA-36400, CCA-36650 | 05-00142 | . |
| CCB- 39600-5 | Brass | CCA-1250, CCA-1550, CCA-4300, CCA-4850, CCA-39550, CCB-36750 | 05-00143 | . |

OIL DRAIN & FUEL VALVE

The following models can be used as both oil and fuel drain valves.

| Model Number | Thread Size | Installed Length | Part No. | Price |
|------------------|-------------|----------------------------|----------|-------|
| CCA-1400 Valve* | 1/2" NPT | 1.685" | 05-03060 | . |
| CCA-39550 Valve* | 5/8" 18 NF3 | 1.054" | 05-01873 | . |
| CCA-39560 Valve | 5/8" 18 NF3 | 2.000" | 05-03656 | . |
| CCB-37000* | 1/2" NPT | 1.075" (Body) .875" (Stem) | 05-03061 | . |

CURTIS FUEL SAMPLER CUP

This fuel sampler cup is designed for use with many popular flush mounted valves used on many of today's production aircraft. Wide bowl allows fuel sampling without fuel dripping onto the hands. Equipped with a Stainless steel pin and crystal clear plastic material P/N 05-17300.....

CURTIS QUICK DRAIN SECURITY SYSTEM

These Curtis Superior Drain Valves are designed to accept a locking device that will prevent tampering and the theft of fuel. They are TSO-C76 approved. The quick drain security system is available in sets of 2, 4, or 6 quick drain valves, and each valve comes with a lock. Included in each set are two master keys and a fuel sampling cup. The dash number on the model numbers below indicates the number of valves and locks included.

| Part Number | Contains | Part No. | Price |
|-------------|-----------------------|----------|-------|
| CCA-39700-2 | 2 Tank Locking System | 05-01239 | . |
| CCA-39700-4 | 4 Tank Locking System | 05-01255 | . |
| CCA-39700-6 | 6 Tank Locking System | 05-01256 | . |

FUEL DRAIN VALVES

SAF-AIR DRAIN VALVES

SAF-AIR push type fuel drain valves are close tolerance valves of simple design. SAF-AIR valves are manufactured with an o-ring placed on the stem to seal against a flat seat on the body. This design eliminates an area where dirt can gather, thus putting an end to the main cause of fuel drain valve drip. FAA & PMA APPROVED. Models CAV-110 & CAV-110H-4 are popular choices to install on gascolators.



MODEL CAV-110 1/8" NPT - For Cessna 310 tip tanks; Mooney Mark 20 and 20A; all Ercoupe models; Bellanca, Taylorcraft model B; Stinson 108, 108-1, 108-2, 108-3; Voyager model 10 and 10A; Navion; Waco VK series and UPF; & Sea Bee. (See tag for more models.) Fits all standard gascolators.

MODEL CAV-160 1/4" NPT - For Piper models J-3, J-4, PA-11, -12, -14, -25, -16, -17, -18, -20, -22, -23, -15 and -28 Tri-Pacer; Apache; Champion; Aeronca; Cessna T-50 and earlier 120 and 140 models; and Beechcraft AT-11 and C-18S.

MODEL CAV-170 7/16-20 NF-3 - For all Cessna late 140A models, 150, 170, 170A, 170B, 172 and 175.

MODEL CAV-180 3/8-24 NF-3 - For Cessna 180, 182, 185, 190, 195, 205, 210, 310, 310A, 310B, 310C and 336.

CAV-100H-4, CAV-160H-4, CAV-170H-4, CAV-180H-4 - All 4 models come with 1/4" hose end.

| Part No. | Thread | Price | Part No. | Thread | Price |
|------------|----------|-------|------------|------------|-------|
| CAV-110 | 1/8" NPT | . | CAV-170 | 7/16-20 NF | . |
| CAV-110H4 | 1/8" NPT | . | CAV-170H-4 | 7/16-20 NF | . |
| CAV-160 | 1/4" NPT | . | CAV-180 | 3/8-24 NF | . |
| CAV-160H-4 | 1/4" NPT | . | CAV-180H-4 | 3/8-24 NF | . |

Replacement Seals

| Part No. | Description | Price Each |
|-------------|------------------|------------|
| MS29513-006 | Tip (all models) | . |
| MS29513-011 | Seat (CAV-180) | . |
| MS29513-012 | Seat (CAV-170) | . |

SAF-AIR SPECIALTY FUEL DRAIN VALVES



The F75 is used on wing tip tanks or any application where a 3/4"-16 flush mounted fuel drain valve is needed. This aluminum valve is simple and clean to operate, using any standard sampling tube. Just push up on the center of the valve to sample fuel. Our new design allows all the fuel to enter the tube without leakage. This valve is designed for use on Cessna 310 through 441 model airplanes. • The C500 is used on the bladder style wing tanks with a 1/2" diameter nozzle. • The P3750 has a 3/8" NPT thread and is designed for use on those applications. Both valves provide push-to-test or push-and twist features for locking the valve open. Material is 360 brass. • The SA5817-4C is used with a 3/4"-16 bulkhead fitting to mount the valve flush with the outside skin of the plane. A hose is attached to the valve with a 7/16"-20 fitting at the low point of the fuel system. Material is anodized aluminum. • The SA-60S valve is the same as the CAV-160 except it is constructed of 304 stainless steel. Valve can be used in highly corrosive applications such as salt water. • 4350-6L has a 7/16"-20 thread and a long stem that can be cut to length for your application. Material is anodized aluminum.

| Part No. | Thread | Price | Part No. | Thread | Price |
|----------|-----------|-------|-----------|----------|-------|
| C500 | 1/2" Tube | . | SA-60S | 1/4" NPT | . |
| P3750 | 3/8" NPT | . | 4350-6L | 1/2"-20 | . |
| F75 | 3/4-16 | . | SA5817-4C | 3/4"-16 | . |

F391 FLUSH DRAIN VALVE



Valve mounts in the sump, the same as original plug, with no projection. Can't be knocked off or opened by particles thrown from propellers. Opens only when operated with sampler cup, rod or wire. Clear cup permits inspection for water or contaminants. FAA approved.

| Part No. | Thread Size | Application | Price |
|----------|-------------|--|-------|
| F-391-14 | 1/4" NPT | Aeronca, Beech AT-11, D-18S, Piper PA-11, 12, 18, 20, 22, Apache, champion, Howard | . |
| F-391-18 | 1/8" NPT | Stinson, Waco VK, UPF, Seabee, Bellanca, T-Craft "B", Navion | . |
| F-391-32 | 3/8-24 | Cessna 180, 182, 195 | . |
| F-391-72 | 7/16-20 | Cessna 140, 150, 170, 172, 175 | . |
| F-391-82 | 1/2-20 | Cessna Cardinal, 210 | . |

Sampler Cup - Fits all F-391 Valves P/N 05-17300.....

SAF-AIR FLUSH-MOUNTED DRAIN VALVES



SAF-AIR designed its line of flush mounted fuel drain valves to be an exact replacement for the Auto Valve F391 line of flush fuel drain valves. Unlike the Auto Valve, SAF AIR valves can be rebuilt. These valves offer a dependable, low-cost solution when a flush mount is needed. FAA & TSO-C76 approved.

| P/N | Size | Equiv. | Price | P/N | Size | Equiv. | Price |
|------|---------|---------|-------|-------|---------|----------|-------|
| SA14 | 1/4 NPT | F391-14 | . | SA72 | 7/16-20 | F391-72 | . |
| SA18 | 1/8 NPT | F391-18 | . | SA82 | 1/2-20 | F391-82 | . |
| SA32 | 3/8-24 | F391-32 | . | SA187 | 1/8 NPT | F391-187 | . |
| | | | | SA53S | 7/16-20 | F391-53 | . |

LOCK OPEN SAF-AIR DRAIN VALVES

Similar to the drain valves above with including the capability of locking in the open position making pre-flight check for contamination and water in the fuel system very easy. Models 1250 & 1250H are popular choices to install on gascolators.

FAA & TSO-C76 APPROVED.



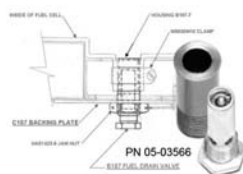
| Part No. | Size | Price Ea. | Part No. | Size | Price Ea. |
|----------|---------|-----------|----------|----------|-----------|
| 1250 | 1/8 NPT | . | 1250H | 1/8 NPT* | . |
| 2500 | 1/4 NPT | . | 2500H | 1/4 NPT* | . |
| 3750 | 3/8-24 | . | 3750H | 3/8-24* | . |
| 4375 | 7/16-20 | . | 4375H | 7/16-20* | . |

*These valves come with 1/4" hose adapter

FUEL DRAIN VALVE KITS FOR CESSNA, PIPER, AND BEECHCRAFT

These high quality fuel drain valve kits are FAA-PMA approved for a wide range of Cessna, Piper, and Beechcraft aircraft. These drain valves prevent drain nipple slippage, require no O-rings, feature corrosion free construction, and use the industry standard 1/8" pipe thread valve. **Features:** • The valve can be rebuilt • Fuel resistant o-ring - Fluorosilicone • Push to test against the wing surface **Specifications:** • Material: Valve 360 Brass, Housing Stainless • Finish: Cadmium Plate • Temperature: -100° to +350°F (-73° to +177°C) • O-Rings: M25988-005 • Pressure: 60 PSI max.

| Description | Part No. | Price |
|----------------|----------|-------|
| Kit for Cessna | 05-03566 | . |
| Kit Beech | 05-03567 | . |
| Kit Piper | 05-03568 | . |



GASCOLATORS – FUEL TESTERS



ACS GASCOLATOR

All-metal gascolator with S.S. screen, 1-7/8" dia. cadmium plated steel bowl w/quick drain. Top is CNC machined from 6061-T6 aluminum. Top casting has 1/4" pipe ports for 3/8" fuel line and one 1/8" pipe port for primer fitting. Wt: 8 oz. May be used with aviation and/or auto fuel. P/N 10580.....

Replacement Gaskets -

For auto fuel 3/32" thick x 2-1/8" O.D. 10536-1
P/N 06-00441

Replacement Screens -

120 Microns Stainless Steel..... P/N 10543-1

74 Microns Stainless Steel..... P/N 05-03436

ACS GASCOLATOR INSTALLATION BRACKET

Versatile bracket of .016 stainless steel accommodates gascolators with either metal or glass bowl. When mounted as illustrated, inlet and outlet connections are on sides. When bracket is inverted, one port of gascolator faces firewall for direct routing of fuel line through firewall. Fits gascolators sold after May 1, 1989..... P/N 10371.....



ACS HIGH PRESSURE GASCOLATOR

New ACS high pressure gascolator. Lighter weight and simpler design than the ACS "classic" gascolator. Bail-wire and attaching hardware have been eliminated. Threaded collar secures bowl to top. Tested to 50lbs. Bowl is cadmium plated and top and collar are anodized for corrosion protection. P/N 05-04248

FAA-APPROVED GASCOLATORS

CNC-machined out of 6061 aluminum for longer use. Anodized "O" ring seals for improved sealing capabilities, a bayonet tab locked bowl system. Direct replacement for factory parts. FAA-approved for many Piper, American Champion, Husky, Maule, Taylorcraft, Dynac and Cessna aircraft. Fits in existing Piper mounting brackets. Mounting brackets available for Cessna. Great for homebuilders also. All fittings and drain plugs are for display purposes only and are not included with Gascolator purchase. Aircraft Make and Model, Serial Number and N number required to make sure correct gascolator is ordered. Check the Aircraft Spruce website for aircraft cross-reference list or contact us for gascolator approved for your aircraft.



SA3-00



SA3-00B



SA3-10



SA3-10A

| Model | Size | Part No. | Price |
|----------------|-----------------------------|----------|-------|
| SA3-00 | 1/4 NPT - 3/8" Line - 3 oz. | 05-00840 | . |
| SA3-00B | 1/4 NPT - 3/8" Line - 3 oz. | 05-02674 | . |
| SA3-10 | 3/8 NPT - 1/2" Line - 4 oz. | 05-02675 | . |
| SA3-10A | 3/8 NPT - 1/2" Line - 4 oz. | 05-00894 | . |
| SA3-07 | SA3-00 Side Mt. Bracket | 05-01027 | . |
| SA3-11 | SA3-10 Side Mt. Bracket | 05-01028 | . |
| SA3-07/ SA3-06 | Cessna 120/140 Install Kit | 05-01029 | . |



USHER GASCOLATOR 4

Can be used on fuel injection systems up to 50 psi. Anodized inside and out to prevent corrosion. Has two 1/4" NPT ports for 3/8" fuel line, a 1/8" primer port, and a 1/8" NPT drain valve port. Mounting bracket not included. Now comes ready to mount to firewall.

GascolatorP/N 05-00632

Replacement Screen.....P/N 05-25972

FUEL FILTERS

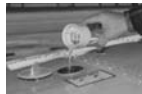
For homebuilts. Used on VariEze and various gyrocopters. Rated to 10 PSI. Not recommended for fuel injected systems.

| Description | Part No. | Price |
|-------------------------------|----------|-------|
| 1/4" Fuel Filter (Metal) | 05-33031 | . |
| 3/8" Fuel Filter (Plastic) | 05-33033 | . |
| 1/4" Fuel Filter (Plastic) | 05-33001 | . |
| 1/4" Fuel Filter (Glass #804) | 804 | . |
| 3/8" Fuel Filter (Glass #806) | 806 | . |

MICRON 10 FUEL FILTER

Length: 4.25" Filter medium: 1.375" dia. 304 pleated SST disk Dia: 2.0" Filter Efficiency: 10 Micron Flow rate: 15.3 gpm Oper. Press: 8,000 PSIG Weight: 5 oz. Drop in pressure: 1.0% Fitting Size: AN6. This filter is washable and reusable

P/N 05-01699.....



GATS JAR FUEL SAMPLER

The incredible GATS Jar allows a pilot to pour the fuel used in the preflight check back into the fuel tank without fear of water contamination. The jar uses a special separator screen that, when coated with avgas, forms a barrier to water and debris, yet allows passage of avgas. The GATS Jar also detects jet fuel in the event of inadvertent fueling of your aircraft with jet fuel. By using the GATS Jar, pilots can help protect the environment by pouring sample fuel back into the tank instead of on the ground.

12 oz..... P/N 05-21250

16 oz..... P/N 05-04237



SHORT FUEL TESTER

The unique snap-on probe fits all quick-drain valves, stores compactly, and reduces spillage, loss, and probe breakage. The 4" (10.16cm) transparent cylinder has the octane color-coding molded in the side for quick reference. Also includes a chrome-plated screwdriver blade with both a Phillips and a slotted head.

4"..... P/N 05-00448

6"..... P/N 05-03386



CURTIS FUEL SAMPLER CUP

This fuel sampler cup is designed for use with many popular fuel drain valves including the F391 drain valves used on many of today's production aircraft. Wide bowl allows fuel sampling without fuel dripping onto the hands.

P/N 05-17300

STOW-AWAY FUEL TESTER HOLDER #1 - This handy device is a fabricated metal holder designed especially to hold the Fuel Tester-Screwdriver above. It holds the tester in a spring loaded configuration and can be mounted on the firewall or in the cockpit, for easy access.

P/N 05-17210



ASA AIRCRAFT FUEL TESTING CUP

Protect yourself from fuel contamination by visually checking the fuel for water and debris. Clear cup with a reinforced steel pin that works with most aircraft. Measures 2-1/2" high x 1-3/4" diameter. Lifetime warranty. P/N 13-02353.....

JEPPESEN DELUXE AIRCRAFT FUEL CHECKER

This deluxe version of the popular screwdriver type fuel checker features some great improvements in the product. A removable bronze (3/32" brazing rod) replaces the flimsy plastic stick. Magnified viewing area allows close inspection of contaminants, and 100% of the sample can be seen. A removable splash guard prevents a fuel shower on the user, and the guard stows flat along side when not in use. This tester incorporates a stronger design to resist cracking and breakage.

P/N 05-17215.....



GASOHOL TESTER

This compact fuel tester / double tip screwdriver combo measures the presence and percentage of alcohol in gasoline, and tightens errant screws.

P/N 05-03439.....

ACS FREE FLOW ONE-WAY CHECK VALVE

Prevents return fuel flow during normal operation but provides by-pass fuel feed in an emergency if the fuel pump fails. Wt. 1 oz., 2-7/8" long. Use with tube fittings for 3/8" dia. fuel line. Anodized for corrosion resistance.

P/N 10630

FLOW EZY FUEL FILTER

The Flow Ezy fuel filter features very fine filtration and is approved for use with Ellison Carburetors. This filter has a 25 micron rating and with their strong machined aluminum housings have a pressure rating of 500 psi. Filter elements are of plated stainless steel wire cloth or cellulose (paper) with a perforated metal support tube inside. Factory model number 61L-03-25-F3. Recommended by Co-Z Development Corp. Dims: 1.25" dia. x 4.75" L Fitting size 3/8" NPT.

P/N 05-28905.....

Replacement Element P/N 8504-05.....



FUEL FILTER

In-line, high-capacity, translucent filter with screen. Has standard 1/4" barb inlet and outlet tubes.

P/N 05-01030



FUEL FILTER

In-tank type. Brass construction with fine-mesh screen. Has standard 1/4" barb inlet and outlet tubes.

P/N 05-01031.....

AP

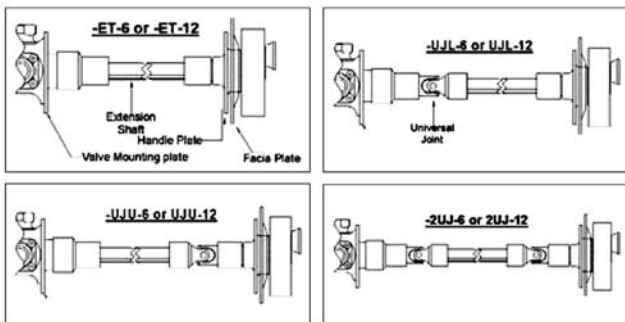
EXTENSION FUEL VALVES - GASCOLATORS

ANDAIR EXTENSION FUEL SELECTORS



For use with any Andair valve. The kit includes everything needed to operate the valve remotely by way of a specially extruded tube. There is no riveting involved, just cut the tube down to length and fit together. To maintain the firm detent at each tank selection, there is a detent cap on the top of the

valve. The special tube then fits into this. Then, so as to maintain the safety feature, where the valve cannot be inadvertently switched off, the button has been moved to the upper section. Like the standard valves, the button must be raised to switch the fuel of. The tube is available 6" or 12" long and 4 extension options are available. The extension must be ordered with the valve. (i.e. an extension cannot be retro fitted to a previously purchased valve).



| Option | Size (In.) | Price |
|--------|------------|--|
| ET | 6 | Call or Email for price and availability |
| 1JU | 6 | |
| 2JU | 6 | |

| Option | Size (In.) | Price |
|--------|------------|--|
| ET | 12 | Call or Email for price and availability |
| 1JU | 12 | |
| 2JU | 12 | |

E Valve Part No. **ET** 1JU **6** Length of extension tube: 6 = 6" long. **UJL** 2UJ **12** 12 = 12" long.

i.e. FS25f5-M or FD20-20-D2-6M

ET: with one universal joint on lower part of valve
UJL: with one universal joint on the upper section of the valve
UJU: with 2 universal joints.

Example:
 E-FS25f5-M-ET-6 = (6" long, 1/2" Left, Main, Right, Off, Straight Ext. Valve)
 E-FS20-20-D2-6M-2UJ-12 = (12" long, 3/8" duplex fuel selector extension with 2 UJs and 12" tube).

SPECIAL ENGRAVING - Andair can offer special engraving for all of the available valves. Please contact the Aircraft Spruce technical department for more information. Here are some examples:



GASCOLATOR MOUNTING BRACKET



from mild steel.

Mount your gascolator solidly on the firewall with this special bulkhead fitting. Simply drill a 5/8" hole through the firewall and a backing plate on the cabin side and rivet the 1-1/2" x 1/8" flange to the firewall. Connect the incoming fuel line to the AN6 male tube fitting on the cabin side. Screw the gascolator onto the 1/4" male pipe thrd. on the engine side. Machined P/N 05-00907

ANDAIR GASCOLATORS



05-29551

Andair make Gascolators for both 3/8" and 1/2" lines. Both types have a screw locking ring that prevents the bowl from coming off, and a facility for this to be wirelocked. The bowl is internally sealed with an Viton (R) O-ring. A PTFE coated 70 micron Stainless Steel mesh is used as the filter screen. The PTFE coating helps prevent water from passing, by maintaining it as a droplet formation. A large filter area is present and wide passages have been incorporated so that the pressure loss through the Gascolators is kept to an absolute minimum. There is an 1/8 NPT hole on the bottom of the bowl so it can be drained and

also one on the top of the body. This one can be used as a pressure tapping or a filtered supply to the primer pump. A selection of fittings can also be used with the GAS375 and the GAS500.

- GAS375M with -6 Male Fittings P/N 05-29551
- GAS375F w/ 1/4" NPT Female Fittings ... P/N 05-29552
- GAS375B w/ Banjo Fittings..... P/N 05-29553.....
- GAS500F - 3/8" NPT Female Fittings..... P/N 05-00129.....
- GAS500M -has -8 Male Flare Fittings P/N 05-00136.....
- Replacement o-ring for GAS375 P/N 05-00704.....
- Replacement o-ring for GAS500 P/N 05-00706.....
- Replacement screen for GAS375 P/N 05-00707.....
- Replacement screen for GAS500 P/N 05-00708.....
- Stainless Steel Drain Valve..... P/N 05-00709.....

ANDAIR CHECK VALVE



Built from aircraft grade Aluminum and anodized for corrosion protection this lightweight and compact unit is excellent. The check valve is ideal for tank vents and high pressure fuel pump bypass lines. Its extremely light weight internal shuttle operates with the slightest pressure yet the internal O-ring seals allow the unit to be used up to 50 PSI. Other qualities include break out pressure less than 1 PSI, great flow characteristics around shuttle, and bleed allows shuttle to weep off pressure in the event of a blocked line. Features AN-6 (3/8") fitting on bottom. Valve measures 5/16" dia. x 2.75" long.



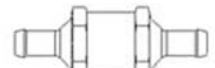
Male AN-4 fittings (7/16" thread) CK250 / CK250-B



1/4" hose fittings CK250-H / CK250-H-B



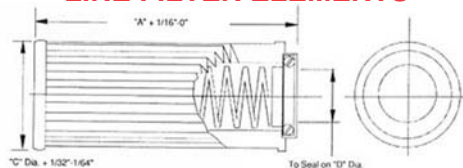
Male AN-6 fittings (9/16" thread) CK375 / CK375-B



3/8" hose fittings CK375-H / CK375-H-B

| Model No. | Bleed | End Fittings | Part No. | Price Ea. |
|-----------|-------|--------------|----------|-----------|
| CK250 | No | 7/16-20 | 05-00713 | . |
| CK250-B | Yes | 7/16-20 | 05-00714 | . |
| CK375 | No | 9/16-18 | 05-00716 | . |
| CK375-B | Yes | 9/16-18 | 05-29555 | . |
| CK250-H | No | 1/4" hose | 05-00717 | . |
| CK250-H-B | Yes | 1/4" hose | 05-00718 | . |
| CK375-H | No | 3/8" hose | 05-00719 | . |
| CK375-H-B | Yes | 3/8" hose | 05-00721 | . |

PUROLATOR AN6235 SERIES LINE FILTER ELEMENTS



- * MIL-F-5504 Qualified
- * Qualified for use in MS28720 and AN6234 filter assemblies.
- * Operating Temperatures: -65F TO + 275F
- * Element Collapse: 150PSID Minimum.
- * Filtration: 10 Micrometers.
- * Hydraulic O-ring.
- * Media: microleat(c) elements (resin impregnated cellulose)
- * Bubble Test 100%

| AN No. | A | C | D | Part No. | Price |
|-----------|---------------|---------------|-------------|----------|-------|
| AN6235-1A | 1.937"/1.875" | .859"/.813" | .375"/.373" | 08-07076 | . |
| AN6235-2A | 4.687"/4.625" | 1.156"/1.110" | .625"/.623" | 08-07103 | . |
| AN6235-3A | 3.500"/3.438" | 1.656"/1.610" | .875"/.872" | 08-07104 | . |

AP

FUEL VALVES - DUPLEX VALVES

ANDAIR POSITIVE STOP FUEL VALVES



Andair Ltd. of England produce these superb Safety Fuel Selectors. Precision built from aircraft grade materials, with PTFE seals packed against a highly polished ball giving a very smooth action. Designed by an RV builder the Andair valve features a positive stop for the off position. A spring loaded button on the lever must be raised before the lever can be moved to the off position. This eliminates the possibility of turning the fuel off in flight, which is an inherent risk with some other designs. The lever has internal stops and detents on the left and

right positions. The FS20 range has been designed for 3/8" fuel lines and the FS25 Range is for use with 1/2" lines. New to the range is the FS20-8 5-way selector valve.

FS20X1-F or FS25x1-F Model 1



FS20X2-F or FS25x2-F Model 2



FS20X3-F or FS25x3-F Model 3



FS20X4-F or FS25x4-F Model 4



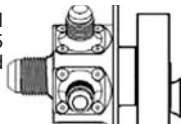
FS20X5-F or FS25x5-F Model 5



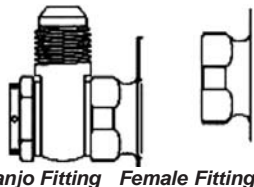
NEW 5-WAY VALVE FS20x8-F Model 8



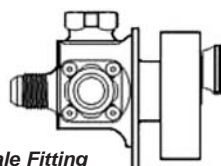
SIDE FITTINGS - The side fittings can either be -M (Male 9/16-18 for the 20 range or 3/4-16 for the 25 range) or -F (Female pipe 1/4 for the 20 range and 3/8 for the 25 range)



Side view, FS20x8-M



Banjo Fitting Female Fitting



Male Fitting

LOWER FITTINGS ON MODELS 3, 4, 5 & 8

The Andair Range of fuel selectors is now available with choice of lower fittings for models 3,4,5 and 8. This fitting can either be -M (Male 9/16-18 for the 20 range or 3/4-16 for the 25 range) or -F (Female pipe 1/4 for the 20 range and 3/8 for the 25 range) or a Banjo fitting. The banjo fitting has a 360° adjustable Male 9/16-18 end for the 20 range or 3/4-16 for the 25 range.

| Lower Fittings | Model | Side Fitting | Price Ea. | Lower Fittings | Model | Side Fitting | Price Ea. |
|----------------|------------|----------------|-----------|----------------|------------|----------------|-----------|
| -- | 1, 2 | | CALL | -- | 1, 2 | | CALL |
| Male or Female | 3, 4, 5, 8 | Male or Female | CALL | Male or Female | 3, 4, 5, 8 | Male or Female | CALL |
| Banjo | 3, 4, 5, 8 | Female | CALL | Banjo | 3, 4, 5, 8 | Female | CALL |

FS20-20-D2 DUPLEX VALVES



Used to switch the fuel in an application where there is a fuel injected engine that needs flow return. It allows you to pipe surplus fuel to the same tank from which it was drawn. This avoids the worry of overfilling the return tank or having an overly complicated fuel system. Engines that can benefit from this valve are Suburu, Continental, Rotax, and Diesel engines. The FS20-20-D2 has two 3/8" sections where as the new FD25-20-D2 has one 1/2" feed section and on 3/8" return section. The valves can be supplied with either male or female fittings.

FS25-20-D2 DUPLEX VALVES - New to the range is the FS25-20-D2 which has a 1/2" feed ports and 3/8" return ports, for use in larger injected engines.

| Model No. | Part No. | Description | Thread | Ports | Price |
|---------------|----------|------------------------|-----------------|--------|-------|
| FS20-20-D2-6M | 05-29560 | 3/8" Feed & Return | 1/4" Pipe | Female | . |
| FS20-20-D2-6F | 05-29561 | 3/8" Feed & Return | 9/16-18a | Male | . |
| FS20-25-D2-6F | 05-29562 | 1/2" Feed, 3/8" Return | 1/4, 3/8" pipe | Female | . |
| FS20-25-D2-6M | 05-29563 | 1/2" Feed, 3/8" Return | 9/16-18, 3/4-16 | Male | . |

FS22D2 DUPLEX VALVE



This new duplex valve from Andair has been designed for the use with low flow rate fuel and vapor return systems. An example being the Turbo charged Rotax 912S. Base on the popular FS20x2, the FS22 retains the key features of small size and light weight. The return line valve uses a new style PTFE disc, operated via the main ball valve allowing the return fuel to flow back to the tank from which it was drawn. The FS22 is available in two forms, the FS22-2PD with its 1/8" female pipe fittings pointing downward (see image) or the FS22-2PS (sideways pointing fittings). Both valves include all of the safety features that appear in the full range of Andair Fuel Selectors.

| Model No. | Part No. | Description | Thread | Ports | Price |
|---------------|----------|------------------------|----------------|--------|-------|
| FS22-D2-6F-PS | 05-29564 | 3/8" Feed, 1/8" Return | 1/4, 1/8" Pipe | Female | . |
| FS22-D2-6M-PS | 05-29566 | 3/8" Feed, 1/8" Return | 9/16-18 | Male | . |
| FS22-D2-6F-PD | 05-29567 | 3/8" Feed, 1/8" Return | 1/4, 1/8" Pipe | Female | . |
| FS22-D2-6M-PD | 05-29568 | 3/8" Feed, 1/8" Return | 9/16-18 | Male | . |

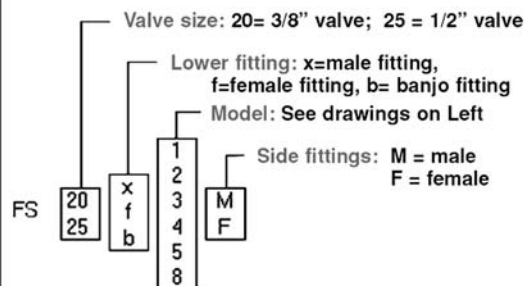
ANDAIR FUEL VALVES



The FS20x4 Fuel Selector is designed for high wing aircraft where it is possible to feed from both tanks simultaneously. Porting for the both position is done internally so there is no need to T the two tanks together. There is a 90 degree action between each tank selection, and the safety feature where the red button on the lever has to be raised to switch off the fuel. On the FS20x4 there are 3 ports. The lower port is the outlet to the engine and can be Male AN-6, Female 1/4NPT or a Banjo fitting which is a 360degree adjustable fitting with a male AN-6 end. Click here for more information on the fitting options. The inlet, side ports can be any of the 3/8" fittings that Andair supplies and are at the 9 O'clock and 12 O'clock positions when looking at the valve with the brass ball spindle pointing upwards (see image to left). At the 3 O'clock position there is a blanking plate that covers up a PTFE gland that opposes the forces of the other 2 PTFE glands. This cannot be removed. One of the great features of this unit is that when the selector is in the OFF position, there is no cross feed between each tank. So if you have your aeroplane parked on a slope, or if one tank is fuller than the other, no cross-feed will occur.

| | | |
|---------------------|--------------|--|
| FS20X4 Male | P/N 05-02635 | |
| FS20X2 Female | P/N 05-29505 | |
| FS20X1 Female | P/N 05-29506 | |
| FS20X3 Female | P/N 05-29507 | |
| FS20X5 Female | P/N 05-29509 | |
| FS20B4-M Banjo Male | P/N 05-01419 | |
| FS20F4 Female | P/N 05-01432 | |
| FS20X4 Male | P/N 05-02635 | |

PLEASE ORDER USING THE FOLLOWING PART NUMBERS:

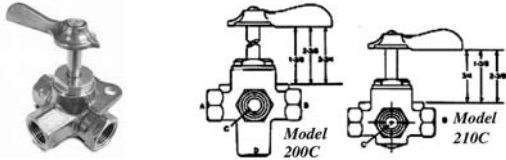


FS20 - 3/8"

FS25 - 1/2"

FUEL VALVES

HOMEBUILDERS SHUT-OFF VALVES



A full-flow plug valve with solid bottom and integral mounting bracket. Brass body and plug. Floating stem with O-ring prevents leakage. Packed with synthetic grease which resists gasoline and solvents. Indicating click on 3-port and 4-port valve (CN models) tells when handle is in full open or closed position. Tested to 30 PSI. Not FAA approved.

| Part No. | Model No. | Imperial Equiv. | Valve Type | Pipe Thread | Price |
|----------|-----------|-----------------|------------|---------------------------|-------|
| 05-02672 | 210-CL | 108HD-04 | 3-Port* | 1/4" Female x 1/4" Female | . |
| 05-01032 | 210-CN | 108HD-06 | 3-Port* | 3/8" Female x 3/8" Female | . |
| 05-01033 | 200-CL | 114-HD-04 | 4-Port** | 1/4" Female x 1/4" Female | . |
| 05-01034 | 200-CN | 114HD-06 | 4-Port** | 3/8" Female x 3/8" Female | . |

*For 2 tanks. Flow is from either side to branch.
 **For 3 tanks. Flow is from any side to bottom outlet.
 Note: Order valve with 1/4" pipe threads for 3/8" dia. fuel line. Order valve with 3/8" pipe threads for 1/2" dia. fuel line. These pipe thread sizes are the ones normally associated with the indicated tube sizes.

FUEL VALVE LEVER



This lever is a direct replacement for the lever that comes standard with the Home-built Shutoff Valve, part numbers 210-CN, 200-CL and 200 CN. It will also replace the lever that is shipped standard with nearly all of the Vans RV Series aircraft. The appearance is much nicer than the stock lever, it is red in color (the standard color relative to fuel) and needs no hardware other than what is sent with the valve. When mounted according to Van's plans the stock lever actually uses the handles as the pointer. P/N 05-03047

RV FUEL POSITION INDICATOR PLATE



This plate is designed to work with the Van's Series of Aircraft. The Vans kits do not provide the builder with a solution for determining what position the fuel selector is in, therefore leaving the builder to create his or her own solution for this situation. This plate used in combination with RV Fuel Lever clearly labels the valve as the fuel valve and gives the position of the valve. The aesthetics of the cockpit are improved and all labeling is chemically resistant. P/N 05-03661

MINIATURE FUEL VALVES



The lightest (4 oz.) smallest (1.5" long), easiest to operate ball type (not plug) on-off fuel valve available. Light operating force makes it ideal for remote operation. Not FAA approved. Forged brass with 1/4" or 3/8" female pipe ends.

- 1/4" valve P/N 05-23325
- 3/8" valve P/N 05-23330
- 1/2" valve P/N 05-01026

WEATHERHEAD FUEL SHUT-OFF VALVE



These 3-way Weatherhead valves, with 1/4" female pipe ports feature a Delrin-spool design for smooth operation. Handle mounted on 1-1/4" long shaft. Not FAA approved.
 Model No. 6749 3-Port Valve -
 Flow is from either side to middle port.
 P/N 6749
 Model No. 6747 4-Port Valve -
 Flow is from any horizontal port to bottom port.
 P/N 6747

ALLEN PREMIUM FUEL SHUT-OFF VALVES



These premium fuel valves are recommended by Rutan Aircraft as the best fuel valves they have seen. They are a direct, bolt-in replacement for Weatherhead and other fuel valves. They turn smoothly and freely with a very positive spring loaded ball detent system which lets you feel the left right and off positions. Manufactured of anodized aluminum. Handle is not furnished with valve. Available in 3 models. Model GS122 valve originally recommended for Long-EZ. Not FAA approved.

| | Model 6S122 P/N 05-29500 | Model 6S1000 P/N 05-29515 | Model 6S1001 P/N 05-29525 |
|---------------------|-----------------------------|------------------------------|------------------------------|
| Handle | No | No | No |
| Ports | 3 | 4 | 3 |
| Ports Configuration | 3 x 1/4-18 NPT | MS33649-06 | MS33649-06 |
| Handle Positions | 4 | 4 | 4 |
| Ports Open | | | |
| Position 1 | All Closed | 1 & 4 | C & A |
| Position 2 | A & C | 2 & 4 | C, A & B |
| Position 3 | All Closed | 3 & 4 | C & B |
| Position 4 | B & C | All Closed | All Closed |
| Price Each | | | |

SPRL FUEL VALVES



Hi-Tech Seals give easy operation and are suitable for all current fuels. The simplicity promises a long reliable life. The SPRL-V1 is a three/four way fuel selector offering left-off-right and both if required. There are 90° between selections and the absence of a lower fitting reduces the depth required. **FEATURES:** Ceramic disks have no soft moving/rubbing seals to wear out, unlike other valves but also give an 'indefinite' life with a very smooth light action. The lift and turn selector is instinctive, secure, and easier to use than the complex 'lift button' type. Locking detents avoid accidental movements. Fixings match most installations, and the internal ports prevent cross feeds, unless 'selected to 'Both'. Male AN fittings enable you to plumb straight into the aeroplane system. Alloy construction is anodized for protection; the Viton O ring seals are suitable for all current fuels. For experimental aircraft only. **FITTINGS:** AN6 or AN8 Male NPT 1/4" or 3/8" Female:

- SPRL 3 way valve P/N 05-04450
- SPRL 4 way valve P/N 05-04451

ACCESSORIES

- AN6 Male Fittings (pk of 3) P/N 05-04452
- AN8 Male Fittings (pk of 3) P/N 05-04453
- NPT 1/4" Female Fittings(pk of 3) P/N 05-04454
- NPT 3/8" Female Fittings (pk of 3) P/N 05-04455

HANDLE FOR ALLEN FUEL VALVES



This aluminum handle is specially machined to fit the Allen fuel valves above. P/N 05-01915

EXTENDED HANDLE SHAFT FOR ALLEN FUEL VALVES



This set of fittings are used to make an extended handle shaft for the Allen fuel valves. One of the fittings fits on and clamps to the valve and the other one fits in the handle. The fittings are then welded in a piece of 3/8" x .035 4130 tube. The handle extension can be made as long as desired. P/N 05-01916

J-3 FUEL VALVE



This J-3 fuel valve includes a steel handle for use with the original pushpull shut off control. This valve is a significant improvement over the original brass style fuel valve. The new valve has a stainless steel ball seated in an inert composite seat. This improved design eliminates the stiff operation and leaking around the shaft that the original design was prone to. PMA approved. P/N 05-00848

PERFORMANCE FABRICATION FUEL VALVE



This Fuel Valve product was developed for use in high and low pressure fuel systems. The Valve provides a simple plumbing solution in dual pump or multi-cell situations. It is also an excellent choice when used in a redundant pump and/or regulator applications. Although it greatly simplifies plumbing installation, it does not interfere with flow characteristics. It always allows for an open loop thereby eliminating any heat soak issues.
 Fuel Valve Size-6 P/N 05-02527
 Fuel Valve Size-8 P/N 05-02528

AP

FUEL SUPPLIES



GOATTHROAT FUEL TRANSFER PUMP

GoatThroat Pumps have been in the industrial market for 15 years. Recently introduced to aviators, these pumps deliver fuel efficiently and directly to the filler downspout with a finger controlled discharge nozzle. Made of chemical grade polypropylene, GoatThroat Pumps can pressurize any container in seconds. Internal pressure relief valve opens at 7 psi, but 2 psi is all you need to deliver fuel safely to your plane. A drip-proof faucet dispenses small amount or gives steady flow. Containers remain upright, so there is no extra handling and little chance for accidental spills. Includes the fitting for a 55 gal. drum. 5 gal. can fitting sold separately.
 Fuel Transfer Pump. P/N 05-02196
 Adapter for Blitz 5 gal. Can P/N 05-02197
 Adapter for Scepter 5 gal. Can P/N 05-03031

AP



FUEL FLOW VALVE

Designed for tank installation, with built-in filter. 90° rotation for ON-OFF. Has standard 1/4" barb outlet tube.

P/N 05-01040



FUEL FLOW VALVE

Designed for tank installation. Similar to above but without built-in filter. 90° rotation for ON-OFF. Has standard 1/4" barb outlet tube.

P/N 05-01041



FUEL FLOW VALVE

Twin-tank fuel selector valve. 3 positions: LEFT-OFF-RIGHT. LEFT and RIGHT positions are 90° either side of OFF. Panel mount.

P/N 05-01042



FUEL FLOW VALVE

Panel mounted fuel on-off.

P/N 05-01043



BANJO FITTING

This can be rotated through 360° then tightened and safety locked. Excellent for applications where space was limited. It can really be described as an adjustable 90° elbow fitting.

P/N 05-29565



FUEL FLOW ELBOW

Bushed 90° tank fitting with standard 1/4" barb outlet. Requires Rubber Bushing FTB01.

P/N 05-01045



QUICK-DISCONNECT FUEL LINE FITTINGS

Complete sets are furnished with both male and female units. Available in both panel mount (left) and in-line (center) styles, with or without internal automatic fuel shut-off. (1/4" tubing).

In-line with shut-off..... P/N 05-01035
 In-line without shut-off..... P/N 05-01036
 Panel mount with shut-off..... P/N 05-01037
 Panel mount without shut-off. P/N 05-01038



PRIMER BULB

Install between fuel tank and engine. A few squeezes prime your engine for easy starting.

Primer Bulb 1/4" Tube Fit - Sm. (5" x 1-1/4") P/N 05-01046
 Primer Bulb 1/4" Tube Fit - Lg. (7" x 2") P/N 05-03690



PRIMER KIT

Everything you need to add a plunger-type primer system to your aircraft. The kit includes the plunger, a reducer "T" fitting, 1/8" barb "T" fitting, and 10 feet of 1/8" pink urethane fuel line. P/N 05-01047



ACS PRIMER

Formerly manufactured by Gerdes Products, this primer has an anodized, all aluminum body and an engraved aluminum knob. The inlet and outlet ports are located on the back end of the pump and both are 1/8" pipe thread. Overall length is 4" and weight is 3.5 oz. New manufacture.

P/N 05-19920



ESSEX PRIMER

This primer, originally produced by Kohler, is positively leak-proof. Its exceptional priming ability has made it popular with manufacturers of general aviation aircraft. Has 1/8" internal pipe thread inlet and outlet ports. Overall length 3-7/8". Wt. 2.3 oz. New manufacture.

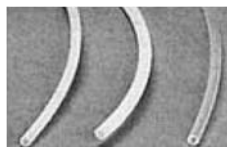
P/N 05-01048

ELECTRIC SOLENOID ENGINE PRIMER VALVE

These new electric solenoids are recommended by Co-Z Development Corp. as ideal electric engine primers for homebuilt aircraft. These normally closed 2-way valves are direct acting and have only two moving parts, a viton plunger and stainless steel spring. Can be installed in any position and are easy to inspect without removing from the line. Pipe size is 1/8" NPT. Orifice dia. 1/8". Wt. 5 oz. #1 port is out, #2 port is in. Will handle max. PSI of 60.

Mounting Bracket - A universal stainless steel mounting bracket for the 1/8" NPT valves may be ordered separately. The mounting bracket can be assembled to the valve body utilizing the body mounting holes

2V Solenoid VLV 20CC02PV4B2A P/N 05-04368
 24V Solenoid VLV 20CC02PV4B2B P/N 05-04369
 Solenoid Mounting Bracket 4K007 P/N 05-04370



FUEL LINE

Polyurethane tubing, translucent blue in color. 1/4" ID. A superior, premium grade of urethane, the optimum material for ultralight fuel line. (Min. order, 4 ft.)

P/N 05-01049 /ft.



PRIMER LINE

Polyurethane tubing, translucent pink in color. 1/8" ID. For primer systems.

P/N 05-01050 /ft.



PULSE LINE

Connects engine pulse outlet to fuel pump pulse inlet.

P/N 05-01063 /ft.



FUEL LINE SPLITTERS/JOINERS

Perfect for feeding from 2 tanks, or for feeding two carburetors from 1 tank. All have standard barbed ends. Made of Delrin.

"T" type, 1/4" P/N 05-01051
 "Y" type, 1/4" P/N 05-01052
 "T" type, 1/8" P/N 05-01053



RUBBER BUSHING

Required for installation of Fuel Flow Elbow described above.

P/N 05-01039

FUEL CAPS



FUEL SELECTOR PLATE FOR LATER CESSNA 170'S & 172'S

This fuel selector plate is billet machined and anodized, with the text engraved on the plate. It is an efficient one piece design which is easy to install and factory guaranteed. FAA/PMA approved.



- Cessna 172 - 37 Gals. P/N 05-00227
- Cessna 170 - 37 Gals. P/N 05-00899
- Cessna 172 - 36 Gals. P/N 05-00901
- Cessna 180 - 55 Gals. P/N 05-00902
- Cessna 180 - 60 Gals. P/N 05-00903
- Cessna 180 - 79 Gals. P/N 05-00904
- Cessna 172 - 84 Gals. P/N 05-00905
- Cessna 182 - 55 Gals. P/N 05-00906

DOW CORNING 3452 VALVE LUBRICANT

Excellent for lubricating valves and slow moving components exposed to harsh chemicals and solvents. resists deterioration by chlorides, solvents, acids and condensate. Dow 3452 is a white, fluorocarbon thickened, fluoro silicone fluid based grease with a temp. range of -20 to 450°F. z2 oz. tube. P/N 09-00333.....

FUEL-WATER SEPARATOR FUNNELS



Filters out solids down to .005 and provides detection of water in gasoline, diesel, kerosene, or 2 cycle gas/oil mixture. Water is easily detectable as it backs up in the funnel. You can combat these problems by refueling with a funnel fuel filter. This funnel is a heavy-duty fast-flow funnel that works with gasoline, diesel, kerosene, and mixed 2-cycle fuels. The F-15 has dual 74 micron Teflon® coated stainless steel fuel filters developed in conjunction with the Racor Division of the Parker Hannifin Corporation

Filtration Group. Capable of screening contaminants down to 74 microns or .0029". When properly used, this filter will virtually eliminate contaminated fuel going into your tanks. The downspout of the F-15 is the same size as 1" PVC pipe which can then be configured to reach any fuel tank regardless of position of the intake pipe. Has a pour spout on the top side of the funnel so you can easily pour the fuel and contamination captured in the sump into a separate container for easy disposal.

| Part No. | Height | Diameter | Flow Rate | Price |
|----------|--------|----------|-----------|-------|
| 05-00026 | 6.00" | 3.5" | 2.5 gpm | . |
| 05-01054 | 8.75" | 5.5" | 3.5 gpm | . |
| 05-01055 | 10.00" | 8.5" | 5.5 gpm | . |
| 05-01371 | 10.00" | 8.5" | 12-15 gpm | . |

MR. FUNNEL FUEL STABILIZER



This product can be used in gas, gasohol, gas/oil mixture, and oxygenated gas. The following is a list of benefits to using the Mr. Funnel Fuel Stabilizer: • Absorbs moisture • Scientific formula prevents fuel from deteriorating • Helps stabilize fuel systems for 1 year when added to fresh fuel • This product helps reduce gum and varnish. • Deposit in fuel systems including fuel injectors and carburetors • Helps clean carburetors and fuel injectors • Helps prevent carburetor and fuel line icing • Helps prevent copper corrosion in alloy carburetors P/N 05-03481

CLEAN FUNNEL™



Clean Funnel™ is the funnel that keeps itself clean. Replacing the caps on each end after each use prevents left over fluid from dripping out, and keeps your work area or baggage compartment clean. No need to wipe your funnel out with a rag before reusing. Clean Funnel™ is ideal for use with fuel or oil as well as windshield washer fluid, detergents, antifreeze, hydraulic fluid, and more. • **Model 112 (Turquoise)** has a 1 pint fluid capacity and a 12 inch vinyl tube attached to its spout, making it very handy to reach into small or tight spaces. • **Model 415 (Red)** has a 1-1/2 quart capacity, 17" long with a flexible spout, and spout I.D. is 9/16". • **Model 428 (Black)** has 1-1/2 quart and 13-1/4" long with a flexible spout and 1-1/8" O.D. spout.

- Model#112 - Turquoise..... P/N 12-00374
- Model# 415 - Red..... P/N 12-00375
- Model#428 - Black..... P/N 12-00376

AIRCRAFT FUEL CAP OPENER



Using screwdrivers, fingernail files, knife blades, etc. consistently damages fuel caps as well as adjacent painted wing surface during refueling operations. Here is a specially designed cap opener that essentially eliminates cap opening force while also eliminating cap and wing surface damage. Made from injection molded Dupont® Delrin plastic resin, it provides a sturdy yet low friction scratch proof tool. You can customize your cap opener with your (N) Number using standard permanent blue marker felt pen. P/N 05-01834.....

ACS TWIST-TO LOCK FLUSH FUEL CAP



The ACS Twist-To-Lock Flush Fuel Cap Assy is machined from 6061 aluminum billet. The cap is available in vented and non-vented configurations. The vented cap uses a one-way spring loaded ball valve which allows air to enter the tank but stops fuel from leaking out of the tank.

The sealing element for the cap is an easily replaceable viton "O" ring. The bottom of the cap is secured to the bottom of the ring by a safety chain to prevent loss of the cap during flight. The mounting ring may be welded, riveted, bolted or molded onto the tank.

- Complete Set (non-vented) P/N 10600
- Complete Set (vented)..... P/N 10610
- Replacement "O" Ring..... P/N 10609

ACS FLUSH FUEL CAPS



This latest modification of the ACS Flush Fuel Cap (unvented) utilizes a Viton O-Ring as the sealing element between the cap and mounting ring. The Viton O-Ring is compatible with aviation fuels and auto gas. The cap with Viton seal is interchangeable with the old-style cap with rubber gasket. Machined from solid aluminum. Ring may be welded, riveted, bolted or molded to the tank. The bottom of the cap is secured to the bottom of the ring by a safety chain to prevent loss of the cap in flight. Mounting ring flange is 1/8" thick. Ring opening is 2-5/8" dia. Overall dia. 4-3/8".

- Complete Set (New-Style Cap w/Mounting Ring) P/N 05-01390
- New Style Cap Only P/N 05-01391
- Replacement Viton O-Ring (for New-Style Cap Only) P/N 05-01392

PIPER PA23 FUEL CAP



Piper PA 23 fuel cap part number CA16097N is an improved version of part number CA16097. This new part uses an improved elastomer with superior fuel resistance. The fuel cap is eligible for PA23 aircraft. P/N 05-04161

FUEL CAP SEAL



Replacement fuel cap seal part number CA38241 has added eligibility for the Cessna Citation 525, 650, 680 and 750 aircraft. It is also approved for Beechcraft aircraft. This seal fits fuel caps with part number 9914106-13. Ideal and inexpensive! Don't pay \$750.00 for a fuel cap when you only need to replace the seal! P/N 05-04162

USHER FLUSH FUEL CAPS



The UD-3 flush fuel cap assembly is an unvented cap similar in design to the #5 style cap. The aluminum mounting ring has a 2" dia. opening and an overall dia. of 3-3/4". It may be riveted, bolted or molded to the tank. It is currently used on many popular homebuilts such as the RV's, Lancair, Velocity & White Lightning. Specify flat or contoured adapter.

- UD-3 with Flat Adapter..... P/N UD-3-F
- UD-3 with Contoured Adapter..... P/N UD-3-C
- Usher O-Ring 2-325 Large..... P/N 05-02146
- Usher O-Ring 2-012 Small..... P/N 05-02147

THERMOS STYLE PRESSURE FUEL CAPS



Pressure fuel caps are recommended for aerobatic installations. These caps are made with Buna-Nitrile gaskets for fuel resistance. These caps are non-vented for gravity fuel systems. It is highly recommended that a #40 (3/32") drill is used to drill a vent hole through the lower base plate and stud assembly using a drill press.

| Part No. | Diameter (I.D.) | Height | Price Each |
|----------|-----------------|---------|------------|
| 05-18399 | 1-3/4" | -- | . |
| 05-18400 | 2" | 1-3/16" | . |
| 05-18402 | 2-1/2" | 1-3/16" | . |

Aluminum weldable adapter neck for use with 2" cap illustrated.

- 3" Length..... P/N 10367-3
- 6" Length..... P/N 10367-6

GAS TANK CAP GASKETS

| Part No. | Description | Size | Price Ea. |
|----------|-------------|----------------------|-----------|
| 05-18500 | Piper | 3" OD, 2" ID | . |
| 05-18505 | Cessna | 2-1/4" OD, 1-3/8" ID | . |

FUEL CAP COVER



This lightweight, easy to install cover fits over and attaches to the existing cap. When installed, it creates a watertight seal around the filler port. Since the cover is to be installed at the same time as the pitot tube cover and the other factory safety devices, there is no need for expensive STC's or other approvals. The patented sealing and locking features have been in development for two years.

- Fuel Cap Cover Cessna P/N 05-03662
- Fuel Cap Cover Early Cessna P/N 05-03668
- Fuel Cap Cover for Piper..... P/N 05-03669



FUEL CAPS

AERO FUEL CAPS - ALUMINUM



These English fuel caps are used on most of the worlds 'super cars', bikes, and aeroplanes. They are beautifully made in forged and bright anodized aluminum. The high precision and easy to operate mechanism is very secure and non vented. They are designed to keep the fuel in and the water out. The lock is there to ensure that your tank is free from contaminants. Aero caps are used on Cirrus, Diamond, Cessna Corvallis, Lancair kits, Nemesis, Vans, Velocity and many more aircraft.



Cap assemblies come complete with cap, gasket, and flanges as ordered. Two keys come with the locking version. Fixing can be by rivet, bolt, weld or glass in as appropriate. These are flush caps of outstanding quality which are ideal for virtually any homebuilt aircraft. Order the attach ring separately as needed. The 300 Series is 3-3/4" OD opening 1-3/4", 6 hole 3" pcd. C37 fits 2" and 2.25" Hoses.

A512 & A508 CAPS - 3" entry/ 5.5" OD. Feature special surface seal to avoid water/ice ingress. For Avtur Jet and diesel fuels. Glass-in also avail.

| Description | P/N | Price ea. |
|--|----------|-----------|
| A36L Locking Cap Assy. 6-hole | 05-28651 | . |
| A36LFF Locking Cap Assy. Glass in | 05-28652 | . |
| A37L Locking Cap+ Hose Fitting 6 hole | 05-28653 | . |
| A37LFF Locking Cap Flush Glass in | 05-28654 | . |
| A36S Non-Locking Assy. 6-hole | 05-28656 | . |
| A36SFF Non-Locking Flush Glass in | 05-28658 | . |
| A37S Non-Locking+ Hose Fitting 6-hole | 05-28659 | . |
| A37SFF Non-Locking Flush Glass in + Hose Fitting | 05-28657 | . |
| R36 Attach Ring + Screws | 05-28661 | . |
| A512L 3" Cap. Locking - 12 hole | 05-00045 | . |
| A508L 3" Cap. Locking - 8 hole | 05-04538 | . |
| A512FF Locking (Glass-In) Cap | 05-02650 | . |

AP

LIGHTWEIGHT DOOR LOCK SETS



Match above fuel cap locks.

P/N 05-28664 ea.

NEWTON FUEL CAP KEYS



202 Newton fuel Cap Keys - Fits all Newton Fuel Caps with a 202 lock..... P/N 05-02345.....

604 Newton Fuel Cap Keys - Fits all Newton Fuel Caps with a 604 lock..... P/N 05-03437.....

605 -Newton Fuel Cap Keys - Fits all Newton Fuel Caps with a 605 lock P/N 05-04540.....

606 Newton Fuel Cap Keys - Fits all Newton Fuel Caps with a 606 lock. P/N 05-03388.....

607 Newton Fuel Cap Keys - Fits all Newton Fuel Caps with a 607 lock. P/N 05-03389.....

608 Newton Fuel Cap Keys - Fits all Newton Fuel Caps with a 608 lock. P/N 05-04541.....

609 Newton Fuel Cap Keys - Fits all Newton Fuel Caps with a 609 lock. P/N 05-04542.....

A300 AND A500 FUEL CAP OVERHAUL KITS



Full set of O rings Replacement clip and ss stiffnut. Aero 300 and Aero 500 sizes. Pair of replacement keys fits Aero 300 or Aero 500.



Newton A300 Fuel Cap O/H Kit P/N 05-02218.....

Newton A500 Fuel Cap O/H Kit P/N 05-02219.....

Newton Spiral Cap O-Ring Kit..... P/N 05-02611.....

Caps for Fuselage and Wing Tanks

For separate fuselage and wing tanks we offer a screw in flange to fit a 2.25" threaded bushing that can be welded or glassed into a tank. This gives a flush fitting outside the skin, avoiding doors and internal spillage. Ideal for all wooden airplanes (e.g. Falco). Good for smoke oil tanks.

| | | |
|--------------------------------|----------|---|
| A30S-G/S Non-Locking, Threaded | 05-28705 | . |
| A30L-G/S Locking, Threaded | 05-28700 | . |
| 2.25" Bushing, Weldable | 05-01056 | . |

AVMAT AVGAS FUEL MATS



These fuel mats are made for Aviation Laboratories from heavy duty durable synthetic rubber. They are nonstatic and fuel resistant. They are color coded for JET A (Black), and AVGAS (Blue). They are available with center holes or top offset holes. (24" X 16") Part Number: Avmat-Avgas1 (top hole) / Avmat-Avgas2 (center hole) / Avmat-Jet1 (top hole) / Avmat-Jet2 (center hole)

AVMAT-AVGAS1 (Top Hole) 13-03588.....

AVMAT-AVGAS2 (Center Hole)..... 13-03589.....

AVMAT-JET1 (Top Hole) 13-04925.....

AVMAT-JET2 (Center Hole)..... 13-04926.....

BAYONET FUEL CAPS AND FILLER NECKS



Locking bayonet type cap with gasket, fastens to filler neck with safety chain. Externally threaded to mate with tank flange. 1.5" dia. filler hole, 2.25" diameter at threaded base, 1-3/8" neck length. Complete with aluminum tank flange designed for welding to aluminum tanks. Inner surface threaded to receive filler neck. Not compatible with auto gas.

Complete Set with Unvented Cap..... P/N 05-17800.....

Complete Set with Vented Cap..... P/N 05-17900.....

Aluminum Tank Flange..... P/N 05-01056.....

Cap Only (unvented)..... P/N 05-01057.....

Cap Only (vented)..... P/N 05-01058.....

Gasket for above Caps..... P/N 05-01059.....

Filler Neck..... P/N 05-01060.....

RETROFIT FUEL CAPS

Tired of hard to open gas caps and caps which leak? These retrofit gas caps offer easy fingertip action and secure sealing.



GLASAIR FLUSH FITTING CAP replaces the rubber seal Glasair cap (2.5-entry and 2" hole). Lockable. Epoxy/Flox in place. Based on aero 300 series. P/N 05-01004.....

VANS RETROFIT SPRL CAP is a screw action SPRL cap fits existing flange and leaves full aperture opening. Non-locking. The seal relies on existing flange being free of dents and dings.

P/N 05-01005.....



VANS RETROFIT AERO 20L CAP - Flush fitting key action cap assembly fits inside existing Vans flange. Easy action and secure seal. P/N 05-01006.....



LIGHTWEIGHT SPRL FUEL CAPS



SPRL-S-GS



SPRL-S

This cap has secure sealing and easy fingertip operation. These caps are made from the highest quality modern engineering plastics with Viton 'o' ring seals (which can be easily replaced if you should ever need to do so.) The mounting ring is anodized aluminum with the flange recessed to give a perfect flush fit whether it is riveted under a metal skin, as in the RV series, or built into a composite structure. This cap is non vented and recommended to keep the fuel in, the water out and in the locking version, other unwanted items out of your tank. Size: 65 mm O.D.; Wt: 80 grams. SPRL caps are used on Europa, Compair, Glasair, lancair, Murphy, OMF, Rocket, velocity, Zenith and many more experimental aircraft.

Non-Locking cap W/ Flush Flange SPRL-S..... P/N 05-28662.....

Locking cap W/ Flush Flange SPRL-L..... P/N 05-28663.....

Cap with Threaded Flange SPRL-G/S..... P/N 05-28666.....

Locking cap with Threaded Flange..... P/N 05-28667.....

Backnut to secure threaded flanges to skin (for 2.25" hose) P/N 05-00042.....

SPrl Fuel Cap O-ring Kit..... P/N 05-02611.....

SHAW AERO FLUSH FUEL CAPS



The 3" #416-51AB flush fuel cap (unvented) and adapter assembly is used by many general aviation manufacturers. Conforms to MIL-C-7244B.

Stainless steel adapter ring is 5-1/2" O.D. with 3" dia. opening. Aluminum

cap is fastened to adapter ring with safety chain. The 2"

#428-1 assembly is similar to the 3" size but with a 2" dia. opening.

3" Unvented Cap & Flat Adapter Ass'y..... P/N 416-51AB.....

2" Unvented Cap Only..... P/N 428-2.....

O-Ring for 3" Cap..... P/N MS29513-338.....

FUEL TANK SEALANTS – FUEL ADDITIVES



PR-1005-L BUNA-N SLOSH COATING

PR-1005-L is an aircraft integral fuel tank slosh coating designed as a topcoat or barrier coating, cured to resist prolonged exposure to both jet fuel and aviation gas. It has a service temperature range from -100°F (-73°C) to 250°F (121°C), with intermittent excursions up to 275°F (135°C).

PR-1005-L is a one part, synthetic rubber solution. The uncured material is a thin syrup suitable for application by brush, fill-and-drain, dip, or spray. It cures at room temp. by the evaporation of solvent to form a smooth, tough, flexible transparent film having excellent adhesion to common aircraft substrates and polysulfide sealants. Test results are in accordance with MIL-S-4383 specification test methods. Color: Red; Dry time(77°F): 20 mins.; non-toxic. Pint..... P/N 09-00323
Quart..... P/N 09-00324



PRIST® HI-FLASH® HI-FLO™ ANTI-ICING FUEL ADDITIVE

Prist® Hi-Flash® Hi-Flo™ Anti-Icing Fuel Additive: The Original Just Got Better Prist® Hi-Flash® Hi-Flo™ aerosol cans are now available with a redesigned trigger dispensing system that makes them easier and safer to use. The safety trigger gives the user control of additive flow with instant on and off dispensing. Now the trigger dispensing system comes pre-mounted on the can which eliminates leaks at the valve connection. This means less waste, no drips and no spills.

Prist® anti-icing fuel additive comes in a wide range of packaging, making it easy to choose the amount of product and dispensing method for your application. The sizes include: 55-gallon drums, 5-gallon pails, 20-ounce and 8-ounce aerosol cans.

20 oz. can..... P/N 09-39555.....
Case (24 Cans)..... P/N 09-39554.....

PRIST® HI-FLASH® LO-FLO™ ANTI-ICING FUEL ADDITIVE - Hi-Flash Hi-Flo™ vs. Hi-Flash Lo-Flo™ What's the Difference?

The two products are identical in chemical formula. Hi-Flo additive simply means the can delivers the product at a rate compatible with a 40 to 55 gall per minute fuel nozzle rate. Lo-Flo additive can deliver the product at a rate which is typical of avgas, which is 15 to 20 gallons per minute. Lo-Flo is also used in helicopters, which typically have to be fueled slowly.

8 oz. can..... P/N 09-02048.....
Case (24 Cans)..... P/N 09-02048-1.....



ALCOR TCP CONCENTRATE ELIMINATE SPARK PLUG LEAD FOULING!

Since the introduction of 100LL as the main fuel for low-compression engines, Alcor has been a leader in providing pilots a fuel treatment that eliminates lead before it can cause fouling. A simple one-shot treatment with every fill-up prevents lead build-up on spark plugs and valves. Rely on the one-and only Alcor TCP Fuel Treatment for a cleaner and smoother-running engine! TCP dispenser sold separately. (PN 05-21500) Note: TCP is not to be carried aboard aircraft.

Quart.....P/N 05-21300..... Gallon ..P/N 05-21400.....

Accessories

Funnel Adapter - For use on the former plastic bottles
P/N 05-01832

Dispenser - Calibrated for proper dosage of the number of gallons treated for 100LL grade of avgas. (For use on the QT. and Gallon bottles)
P/N 05-21500.....



DECALIN RUNUP FUEL ADDITIVE

Decalin Fuel Additive in a 16 oz bottle, treats up to 320 gallons of fuel. • Scavenges Lead in aviation fuel after combustion to prevent lead oxide buildup on valves but still allows the lead to perform the anti-knock function prior to combustion.

• It is an excellent additive for auto conversions, where it reduces buildup on oxygen sensors and plugs. If you have to use 100LL, then this stuff is for you. • Prevents valve seat erosion from valve seat micro welding. It is equivalent to TCP. • Does not contain volatile solvents so it is safe to ship and safe in the cockpit. You can carry it with you for out-of-town airports. • Easy to use graduated measuring and dispensing reservoir built into the bottle. No messy syringes! • Tested and stable down to 0° F. Decalin is not approved for use in the engines of certified aircraft. **Note: There are no HAZMAT shipping charges on this product**

Decalin Runup Fuel Additive 16OZ..... P/N 05-01406.....
Decalin Runup Fuel Additive Quart..... P/N 05-03412.....

FUEL FRESH



Aircraft sit - Fuel Fresh prevents gasoline from going stale. This process called Autoxidation occurs when oxygen reacts with fuel, thereby forming gum and varnish. Auto gas is particularly susceptible, losing octane performance and flammability, resulting in greater possibility for detonation. Add Fuel Fresh and preserve fuel up to 24 months, maintain octane, prevent gum varnish, clean fuel system, and inhibit corrosion. Quick starts and clean burn are assured. Safe for 2 or 4 cycle engines. Handy measuring bottle. 32 fl.oz. Concentrate (Treats 96 Gal.)

P/N 09-38050



JEFFCO FUEL TANK SEALER

Jeffco 9700 is a 100% solids epoxy system which is the highest quality fuel and chemical resistant lining and coating material available. It contains no solvents and no corrosive or carcinogenic substances to assure low toxicity and ease of application.

Provides superior low temp. curing, impact and abrasion resistance, and cures in the presence of moisture or humidity. Brushes on easily.

Sold in 3 gallon kit containing 2 gallons of resin and 1 gallon of hardener. One 3 gallon kit can coat tanks of average size homebuilt. Used extensively on Lancairs and other homebuilts. Shelf life one year.

Note: Jeffco Fuel Sealer 9700 FCR (Part Number:09-42226) is made up of 2 parts. Part A and Part B. They both can be sold separately. Part A is Part number:01-01062 and Part B is part number: 01-01063.3 Gal Kit..... P/N 09-42226.....
9700A FCR - 5 Gal..... P/N 01-01062.....
9700B FCR - 5 Gal..... P/N 01-01063.....

PRO-SEAL TYPE TANK SEALANTS

Pro-Seal and similar products are two-part polysulfide integral fuel tank and fuselage sealants. They have exceptional strength and jet fuel resistance as well as excellent resistance to oils, solvents, all fuels, and weathering. We offer a Pro-Seal equivalent which is a B-2 type material and meets specification MIL-S-8802E, Type II, Class B-2. These kits are packaged in poly bags with nozzle, plunger and instructions.

Kit A (2-1/2 Oz.) cartridge

2oz. sealant..... P/N 09-38500.....

Kit B (6 Oz.) cartridge

3-1/2 oz. sealant..... P/N 09-38510.....

Discount Schedule: Less 10% on 12 kits, less 15% on 20 kits (may be assorted).

PRO-SEAL HAND-DISPENSING GUN



These hand-operated dispensing guns are ideal for applying Pro-Seal type sealants in small quantities normally used by the home builder. Available in two sizes for the two sizes of Pro-Seal offered above.

2-1/2 oz. Dispensing Gun..... P/N 09-38520..... **Jea.**
6 oz. Dispensing Gun..... P/N 09-38530..... **Jea.**

PRO-SEAL AIR-POWERED SEALANT GUN



These air-powered dispensing guns are recommended for applying Pro-Seal type sealants in larger quantities and where positive control of the material being dispensed is critical. The unit's rugged construction makes it ideal for in-plant production applications that may require full line air pressure. Features include twist lock instant loading, smooth dispensing, non-bleeder application control and positive application control. Lightweight.

2-1/2 Oz. Gun Kit (Gun & Cartridge)..... P/N 09-38540.....
6 Oz. Gun Kit (Gun & Cartridge)..... P/N 09-38550.....
2-1/2 Oz. Gun Only..... P/N 09-38542.....
6 Oz. Gun Only..... P/N 09-38552.....
2-1/2 Oz. Cartridge Only..... P/N 09-38544.....
6 Oz. Cartridge Only..... P/N 09-38555.....

PRO-SEAL FUEL TANK SEALANT P/S 890 CLASS B



A filleting compound for sealing integral fuel tanks and pressurized cabins. It was especially developed for use over a temperature range of -65°F to +275°F and provides outstanding resistance to aircraft fuels (aviation gasoline or jet fuel) and petroleum base lubricating oils. Cures at room temperature and without shrinkage to form a resilient sealant possessing excellent adhesion to aluminum, magnesium, titanium, steel and numerous other materials.

Pint.....P/N 09-38560.....
Quart.....P/N 09-38565.....

PROSEAL PR-1776M CLASS B LOW WEIGHT FUEL TANK SEALANT



PR-1776M Class B is a low density, high temperature aircraft integral fuel tank sealant. It has a service temperature range from -65°F (-54°C) to 250°F (121°C), with very limited excursions up to 360°F (182°C). This material is designed for fillet sealing of fuel tanks and other aircraft fuselage sealing applications. It offers as much as a twenty percent weight savings, per unit volume, over traditional sealants used for these purposes. The cured sealant maintains excellent elastomeric properties after prolonged exposure to aircraft fuels both jet fuel and aviation gas, and will resist limited contact to diphosphate ester based hydraulic fluids. PR-1776M Class B is a two-part, manganese dioxide cured Permapol® P-5 modified polysulfide. The uncured material is a low sag, thixotropic paste suitable for application by extrusion gun or spatula. It cures at room temperature to form a resilient sealant having excellent adhesion to common aircraft substrates. Shelf Life: 9 months..... P/N 09-02003.....

AP

CORROSION TREATMENT

ACF-50 ANTI-CORROSION COMPOUND



ACF-50 is a state-of-the-art compound for controlling corrosion on aircraft electrical and avionics systems and airframes. ACF-50 is designed for owners of strut equipped Piper aircraft to comply with new Piper bulletin 5280C requiring lift strut inspection. ACF-50 kills the corrosion process with just one application and will last for 24 months. Microswitches, cannon plugs, and relays will remain corrosion free. Plus, ACF-50 will easily free seized nuts, screws and bolts. ACF-50 is qualified under Mil-C-81309-E, and manufactured under ISO 9000 Certified Processes. Try ACF-50, you will be truly amazed at the results.

- 13 oz. Spray Can (HAZMAT) P/N 09-44350
- 32 oz. Bottle P/N 09-00364
- 4 Liter can P/N 09-44345
- 20 Liter Pail P/N 09-00437

CORROSION X



Corrosion X is an excellent penetrant, lubricant, and corrosion filter which conforms to Mil-C-81309E and is perfect for extended corrosion protection of airframes. It is also highly effective in protection of all components in the electrical / avionics systems. On existing corrosion, it penetrates oxidation, displaces electrolyte and stops electrolysis. On corrosion free surfaces provides an ultra-thin barrier to guard against moisture intrusion and corrosion attack. Treatment lasts 2 years or more, and Corrosion X is non-toxic. Corrosion X is a highly recommend treatment for extending the life of airframes.

- 16 oz. Aerosol P/N 09-42220
- 16 oz. Trigger spray (can be shipped anywhere non-hazardous, unrestricted) P/N 09-00296
- 1 gal./3.8 ltr. P/N 09-44225

CORROSION X PRESSURE SPRAYERS



These pressure sprayers are excellent for applying Corrosion X and require no special training to operate. compact, convenient and easy to use, these sprayers have no moving parts and operates at 80 PSI shop air. At such a low CFM even some inexpensive diaphragm compressors can deliver adequate power. Furnished with instructional video. Available in 3 sizes.

- 2.5 GALLON TOTE** - Required Air Pressure: 80 PSI @ 5 - 6 CFM Capacity: 2.5 gallons Weight: 22lbs Hose: 10' Color: Blue
Basic Unit Includes: 1" cricket wand, 3' x 1/4" 360° wand, 3' superflex wand P/N 09-00373
- Complete Unit Includes:** 1" cricket wand, 3' x 1/4" 360° wand, 3' superflex wand, 8' x 1/4" 360° wand, 6' x 3/16" 45° fan wand, 5" x 1/8" hook wand P/N 09-00374
- 5 GALLON HANDI-SPRAY™** - Required Air Pressure: 80 PSI @ 5 - 6 CFM Capacity: 5 gallons Weight: 28lbs Hose: 25' Color: Blue
Basic Unit Includes: 1" cricket wand, 3' x 1/4" 360° wand, 3' superflex wand P/N 09-00371
- Complete Unit Includes:** 1" cricket wand, 3' x 1/4" 360° wand, 3' superflex wand, 8' x 1/4" 360° wand, 6' x 3/16" 45° fan wand, 5" x 1/8" hook wand P/N 09-00372
- BELT PACK** - Required Air Pressure: 80 PSI @ 5 - 6 CFM Capacity: 1 quart Weight: 7lbs Hose: 3'
Basic Unit Includes: Pistol belt and holster, 1" cricket, 5" x 1/8" hook wand, 3' superflex P/N 09-00375
- Complete Unit Includes:** Pistol belt and holster, 1" cricket wand, 3' x 1/4" 360° wand, 3' superflex wand, 8' x 1/4" 360° wand, 6' x 3/16" 45° fan wand, 5" x 1/8" hook wand. P/N 09-00376

ELIMINATOR RUST REMOVAL TOOL



The Eliminator is a small brush which has a narrow tip composed of glass fibers, each smaller than a human hair. The glass fibers combine to produce concentrated scrubbing power of hundreds of pounds per square inch. In less than 1 minute, the Eliminator brush can clean out all surface rust, wax, and dirt so that touch up paint will bond. Comes with 2 extra glass fiber cartridges which are inside the handle. P/N 09-27230

- 2 Pack of Refills P/N 12-01630

GREASEXTRA



Has been used and widely recommended by a diverse range of tool and machinery users - from engineers to woodworkers: classic car restorers and yachtsmen, pilots and farmers. Suggested uses include lubrication and protection of machine tools, wheel bearings of boat trailers and launching trolleys, tailwheels of light aircraft, stern tube stuffing box lubrication, light steam plant lubrication and protection. Cycle and motorcycle greasing and protection of chrome plated surfaces during winter months. 8oz Plastic Jar P/N 09-02066

PLIOBOND



Pliobond is a viscous, quick-setting adhesive which is highly versatile. Bonds metal, wood, plastic, fabrics, ceramics, glass, vulcanized rubber, paper, leather and concrete. Thin with MEK.

- #PBC-20, 1/2pt BrushTop Can P/N 09-28000
- #PC-220, Pint P/N 09-28100
- #PC-320, Qt. P/N 09-28200

PAR-AL-KETONE



An excellent corrosion inhibitor for use on exterior surfaces of parts that are subject to exposure. Recommended for all control cables. Meets spec. MIL-C-52, Type 1. May be sprayed, dipped, wiped or brushed on. Thin with mineral spirits or use undiluted.

- Qt. P/N 09-26800
- Gal. P/N 09-26900

BOESHIELD™ T-9 CORROSION PROTECTANT



Developed this formula for long term protection of aircraft components. Penetrates to fasteners and fixtures, where it displaces moisture, and will even loosen rusted parts. Boeing recommends it for fuselage, wing, and tail structures, engines and cowlings, landing gear and gear wells, control linkages, and avionics. Dries to a clean waxy film. Lubricates and protects all metals for months. Safe on most paints, plastics & vinyls.

- 12 oz. Aerosol can P/N 09-01623
- 4 oz Drip Can P/N 09-00378
- 4 oz Spray Can P/N 09-00379
- Gallon Can P/N 09-01622

TUBE SEAL (LINE OIL)



Prevents rust and corrosion inside aircraft tubing structures. Tubeseal is a blend containing a very fine preservative oil (MIL-L-21260) which has a characteristic of climbing the tube wall and spreading over the entire surface to provide lasting protection. Penetrates and reveals very small pin holes in a weld and in time, due to exposure, congeal and seal the hole. 1 quart will treat 2 light aircraft fuselages. Complete instructions on label.

- Qt. P/N 03-14000
- Pt. P/N 03-14005

DOW CORNING DC-4 COMPOUND



A grease-like silicone material which provides a moisture proof seal for ignition and electrical systems. More water repellent than waxes. Effective from -70° to 400° F. A low-loss dielectric. Meets spec. MIL-I-8860.

- 5.3 Oz. Tube P/N 09-27700

ECK CORROSION COATING



ECK® is a coating used to prevent dissimilar metal corrosion of all metals including stainless steel, aluminum, copper, brass, cold rolled steel and black oxide. ECK® prevents corrosion by providing a barrier between dissimilar metals, sealing out moisture and absorbing energy created by a dissimilar metal reaction. Product can be applied by aerosol or liquid on an unpainted or painted surface. Once applied the coating does not need to be reapplied during routine maintenance. ECK® is dielectric and can be used on electrical connections. Size is 3.75 oz.

- P/N 09-02138

DOW 730 SOLVENT RESISTANT SEALANT



A one part RTV paste which cures at room temp. to a tough rubbery white solid. Used for bonding, sealing and caulking where resistance to fuels, oils and solvents is required. Excellent on fuel line pipe threads, repairing fuel lines and tanks, bonding components exposed to fuels, oils & solvents. temp. range -85° to 400°F. Stores refrigerated for years.

- 3 oz. tube P/N 09-00383

DOW SILASTIC RTV



General-purpose single-component silicone rubber. Adheres to metals, glass, paint, ceramics, most plastics, and wood. Cures to a firm silicone rubber in 24 hours at room temperature. Seals windshield glass, windows, repair worn rubber parts.

- #732 RTV (Clear), 4.7 Oz. Tube P/N 09-27800
- #732 RTV (White), 4.7 Oz. Tube P/N 09-27810
- #732 RTV (Black), 4.7 Oz. Tube P/N 09-27815
- #736 Red Silicone, 3 Oz. Tube P/N 09-27900

TOOLGUARD VCI



ToolGuard VCI provides non-contact protection for tools and parts in storage by virtue of the state of the art vapour phase technology. ToolGuard VCI is available in packs of 3. Each ToolGuard VCI provides up to 12 months protection in a volume of

up to 2 cubic feet. They are designed to protect tools and components in storage cases, toolboxes and tool chests. In large cabinets, distribute several ToolGuard VCI's throughout the cabinets. In traditional wooden toolmakers chests mechanics toolboxes with multiple draws, use one ToolGuard VCI per draw. Large items or components can be protected by placing inside a strong plastic bag into which a ToolGuard VCI has been placed. Until the lid is removed the shelf life of the ToolGuard VCI is infinite. P/N 09-02067

WHIRLWIND PROPELLERS — GOVERNORS



WHIRLWIND PROPS

Whirl Wind has made significant developments in the construction of the carbon composite propeller blades Insuring a strong, light and durable propeller system. The blade twist has been optimized for aerobatic performance, and the wide chord allows for more low-speed thrust and braking on those long down lines.



200C SERIES PROPELLERS

The 200C Series system consists of 2 carbon fiber blades with nickel leading edge erosion shields, aluminum hub and a composite spinner. This propeller is counter-weighted to prevent engine overspeed. This propeller can be flown in rain and off unapproved airstrips.

Performance & Quality. This 200C Series propeller has been designed to maximize the aerobatic performance of your airplane! The exceptional performance is derived from advanced engineering developments, including the use of our latest airfoils. The 200C Series is a two-blade hydraulic constant speed propeller system designed for aircraft using the Lycoming IO-360 engine (180 - 200 hp).

P/N 05-00568.....

400C SERIES PROPELLERS

The new 400C Series system consists of three carbon fiber blades with nickel leading edge erosion shields, aluminum hub and a composite spinner. This propeller is also counter-weighted to prevent engine overspeed. This propeller can be flown in rain and off of unapproved airstrips.

Experience the exceptional performance of the 400C Series propeller system. Like the 200C Series, performance is derived from advanced engineering developments, including the use of our latest airfoils. The 400C Series is a three-blade hydraulic constant speed propeller designed for aircraft using the Lycoming IO-540 engine (260 - 300 hp).

P/N 05-00569.....



SPECIFICATIONS

| | |
|--|-----------------------------------|
| Prop Model#: 7755/C214 | System Wt: 47 lbs (213 Kg) |
| Engine Type: Lyc. O-360, IO-360 | Function: Aerobatic |
| Engine HP: 180 - 200 hp | Control: Governor P-940 |
| Max RPM: 2700 RPM | Finish: Gray or White |
| # of Blades: 2 | Spinner: Composite 13",14" |
| Diameter: 77" | |

SPECIFICATIONS

| | |
|---------------------------------|--------------------------------|
| Prop Model#: 7855/C415 | System Wt: 65 lbs |
| Engine Type: Lyc. IO-540 | Function: Aerobatic |
| Engine HP: 260 - 300 hp | Control: Governor P-940 |
| Max RPM: 2700 RPM | Finish: Gray or White |
| # of Blades: 3 | Spinner: Composite 14" |
| Diameter: 78" | |

200C SERIES BENEFITS

- * Faster Acceleration
- * Better climb
- * More vertical performance
- * Faster top speed
- * More braking effect
- * Lower polar moment of inertia

400C SERIES BENEFITS

- * Faster Acceleration
- * Better climb
- * More vertical performance
- * Faster top speed
- * More braking effect
- * Lower polar moment of inertia

JIHOSTROJ HYDRAULIC GOVERNORS

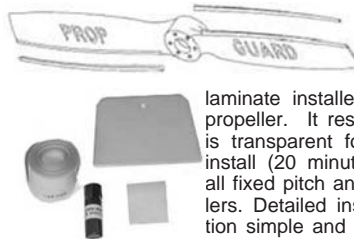
| Jihostroj Model | Engine Application | Part No. | Price |
|-----------------|--|----------|-------|
| P-910 | Rotax 912 & 914; Oil Pressure to increase pitch | 05-00571 | . |
| P-920 | Lycoming O-320, IO-360, IO-540 - Standard; Oil Pressure to increase pitch | 05-00572 | . |
| P-940 | Lycoming O-320, IO-360, IO-540 - Aerobatic; Oil Pressure to decrease pitch | 05-00573 | . |



PROP & SPINNER POLISHING KIT

This kit was developed specifically to maintain the propeller and spinner on prop & spinner in pristine condition. P/N 09-23525.....

PROP GUARD



Prop Guard can eliminate constant erosion process that a propeller is exposed to every flight. Prop Guard is a clear laminate installed on the leading edge of the propeller. It resists deterioration from the sun, is transparent for easy inspection, is easy to install (20 minutes), and is FAA approved for all fixed pitch and constant speed metal propellers. Detailed installation sheets make installation simple and effective. FAA Form 337 is not required for use on certificated aircraft. The kit

for two-bladed propellers contains 65 inches of material and the kit for three-bladed propellers contains 92 inches of material. Not for use on wood propellers.

- 2 Blade Fixed Pitch Kit..... P/N 05-05330
- 3 Blade Constant Pitch Kit..... P/N 05-05335



PROP PROTRACTOR

Perfect for precision setting of all ground-adjustable props, as well as precision alignment of control surfaces.

P/N 05-31970.....



THERM-X HOT PROP PROPELLER DE-ICING KIT

De-icing in under 90 seconds with the push of a button! No Fluids! No Mess! • Therm-X Hot Prop is a complete propeller deicing kit made up of Part 23 certified products (no more scrounging parts to build system) • Available for 2 blade and 3 blade props (currently Continental only, Lycoming to follow) 12V or 24V • 1 year Warranty • Installation documentation • Manufacturer provides support • Weight 4.9 lbs.

- 2 Blade P/N 05-03383
- 3 Blade P/N 05-03384

PROPELLERS

POWERFIN COMPOSITE PROPELLERS



Powerfin is the only composite propeller manufacturer in the U.S. to offer a true Clark-Y airfoil which optimizes surface airfoil for thrust. Powerfin also allows for infinite pitch range with any increment. The pitch alignment tool supplied with every Powerfin takes the guesswork out of pitching your prop. Simply set the stop screw, clamp the tool to the hub, and turn the blade to the stop. The process takes less than 10 minutes for a 3 bladed prop. Powerfin features include superior aerodynamics, noise reducing tips, superior composite construction,

very strong low profile hub, durable finish, 2 and 3 blade configurations, fits Rotax 75MM bolt pattern, adapters for every bolt pattern, 32" to 72" diameter, leading edge protection, speed set hub and a two year factory warranty against defects. Weight is 6.5 lbs. for 2 bladed Powerfin and 9.0 lbs. for 3 bladed Powerfin. Complete brochure available on request.

General use propeller although specifically designed to run **MODEL B** significantly smaller diameters than most other props. The B-Model runs very well on a 582/2.58 as a three blade 60" for example, and can out produce our competition even when running much smaller diameters. Maximum possible diameter with this model is 65".



Designed specifically for powered parachutes as a three blade 64" on a Rotax 582/2.58, this design works well on Rotax 447's through Rotax 618 as well as the Hirth engines that fall between 40 and 80 horsepower. This is the propeller being sold as standard equipment on 6 of the top 7 ppc's. Maximum possible diameter with this model is 69".



This is our smallest propeller - designed for **MODEL E** engines between 15 and 30 horsepower. These narrow blades allow for a maximum possible diameter of 53". Backpack ppc's are the target of this design although the blade has been proven very efficient on many older, fixed wing airplanes with diameter restrictions. This is the ONLY pitch adjustable prop available to backpack units.



This is our largest propeller - designed for larger two-stroke engines that use the higher gear reduction ratios and horsepower up to 115. This prop runs beautifully on a Rotax 503/3.47 as a three blade 66"-70". A two place Kolb can't squeeze any more efficiency out of a 503/3.47 than with our F-model 68" prop. This prop is also the finest prop available for the Rotax 912, 912S, and 914 engines. Maximum possible diameter with this model is 75".



To calculate the cost of a full propeller assembly, take the price for a single blade times the number of blades you need. Then add the cost of the hub you need.

For example: A three blade C-model propeller assembly will include three C-model blades (\$420) and a standard three blade Apex hub (\$195). The total is \$620. All hub assemblies* include mounting hardware, optional lock-nuts for Rotax engines, and a 1/4" dowel pin used for setting the pitch.

The cost of each type of blade is the same regardless of the diameter.

BLADES

| Blade Model | Single Blade Cost |
|-------------|-------------------|
| B-Model | |
| C-Model | |
| E-Model | |
| F-Model | |

*All propeller and hub assemblies include mounting hardware for the Rotax A, B, C, or E box or the Hirth gearbox.

HUB ASSEMBLIES*

| Hub Type | For Blade Models | Cost |
|----------------------------|------------------------|------|
| Special Two Blade Apex | E-Model Blades Only | |
| Special Three Blade Apex | E-Model Blades Only | |
| Standard Two Blade Apex | B, C, & F Model Blades | |
| Standard Three Blade Apex | B, C, & F Model Blades | |
| Standard Four Blade Apex | B, C, & F Model Blades | |
| Standard Five Blade Apex | B, C, & F Model Blades | |
| Rotax 912 Three Blade Apex | B, C, & F Model Blades | |
| Rotax 912 Four Blade Apex | B, C, & F Model Blades | |
| Rotax 912 Five Blade Apex | B, C, & F Model Blades | |

Shipping a two or three blade propeller assembly is \$20.00. These prices are for all U.S. customers excluding Alaska and Hawaii. Most international orders will ship U.P.S. International - Expedited Service. If you wish a quote on an international order, please supply an address with a postal code so we can quote shipping prices.



PROPS INC. PROPELLERS FOR HOMEBUILTS

Ground Adjustable Propellers by Props Inc. For those who have changes in mind or like the looks of a three blade prop. It has wood blades similar to the Homebuilt line, but with an aluminum hub. Key Benefits: Wide Adjustable Range • Replaceable Blades • Custom Designed

| Description | Diameters | Price |
|--------------------|----------------|-------|
| VW, Jabiru, Suburu | 46" - 58" dia. | |
| Three Blade | Up to 90" dia. | |
| Four Blade | Up to 90" dia. | |

Homebuilt Props by Props Inc. Homebuilt props come with urethane leading edge protection and fiberglassed wrapped tips. Key Benefits: Durable, yet can save tear down cost in the event of a ground strike. • Specifically designed for the use. • Can be modified for fine tuning.

| Description | Diameters | Price |
|--|----------------------------------|-------|
| VW, Jabiru, Suburu | 46" - 58" dia. | |
| Gyrocopter, Airboats Mac, VW, Suburu | 48" - 56" dia. | |
| C-90, O-200, O-235 O-320, O-290, O-360 | 58" - 60" dia. 60" - 72" dia. | |

Specify aircraft type, prop diameter, pitch, bolt pattern, pusher or tractor configuration, and mahogany or birch when ordering any homebuilt propeller. Allow 2-3 weeks for shipment of our custom propellers. Add \$30.00 for 3-blade and \$50.00 for 3 and 4 blade props-packing and shipping. Maple may be substituted for Birch according to availability.

ULTRALIGHT PROPELLERS BY PROPS INC.



These high quality ultralight propellers are available in both birch and mahogany. The birch props are as split-resistant as mahogany but mahogany props with glass coating are 1/3 lighter than the birch. Mahogany props come with a glass coating - it is optional on birch props. Add \$35.00 for leading edge protection on birch or mahogany props. Propeller reconditioning available on all ultralight props.

Specify prop dia., pitch, bolt pattern, aircraft and engine type, birch or mahogany, and pusher or tractor configuration.

Allow 2-3 weeks for delivery. Prop drilling included in price. Additional \$18.00 for packing and shipping.

| Diameter (Specify) | Pitch (Specify) | Price for Plain Prop |
|--------------------|-----------------|----------------------|
| 36 thru 40 | Any (to 36") | |
| 41 thru 48 | Any (to 46") | |
| 49 thru 54 | Any (to 46") | |
| 55 thru 60 | Any (to 46") | |
| 61 thru 66 | Any (to 46") | |
| 67 thru 72 | Any (to 46") | |

Request quotation on prop pitch over 46"

DYNAVIBE PROP BALANCER



DynaVibe is an economical, state-of-the-art dynamic propeller balancer designed specifically for the aircraft industry. DynaVibe displays the magnitude and phase of propeller vibration allowing precise weight adjustments for balanced and smooth engine operation. * Economical - including: • Dynamic Balancer • Accelerometer with 30 ft cable • Optical Pickup and Reflective Tape (Tach) • Carrying Case • No hidden costs or additional items to buy! * Accurate - Reports RPM, Vibration Magnitude * Results - Reduce vibration for a smoother flight, and decrease mechanical wear of engine and instruments

DynaVibe Aircraft Prop BalancerP/N 05-04532
DynaVibe Aircraft Prop Balancer with NISTP/N 05-04533
DynaVibe Rotocraft Prop BalancerP/N 05-04534
DynaVibe Rotocraft Prop Balancer with NIST.P/N 05-04535

BUZZ MASTER PROP BALANCER



This extremely simple and sensitive tool uses the plum-bob and bevel principle to balance props both vertically and horizontally. It can be carried in a small tool box for easy use in the field and balances props accurately for smooth operation. The precision machined hub works with any prop designed with standard 1" center hole. Illustrated instructions included. P/N 13-17400

PROPELLERS

PRINCE AIRCRAFT COMPANY P-TIP PROPS



WOOD P-TIP PROPELLER - Before the "Carbon Fiber P-TIP Propeller", this had been considered one of the most efficient and lowest noise propellers available; the only wood/carbon fiber anti-vortex droop tipped propeller in the world. This propeller is a wood, fixed pitch propeller that relies on the forward pull of the propeller to automatically provide pitch change proportional to the amount of force being applied to the propeller disk. When a propeller operates at a slower airspeed than its maximum capabilities, it has a proportional pull in relation to the velocity of forward motion, so at takeoff and climbing condition the propeller will have its largest forward pull. Due to the scimitar shape, the tip of the propeller cones forward, as the coning angle changes the propeller will lessen pitch that provides shorter takeoffs and higher rates of climb. As the propeller increases in forward speed the disk pressure is reduced, this forces the propeller to increase pitch and top speed. This change in pitch is approximately four inches from takeoff to cruise. The droop P-TIP is to control the air spillage over the propeller tip that delays the tip vortices which cause drag and turbulence within the propeller arc. A propeller, like a wing, works best when it has unturbulated air over the airfoil sections. The P-TIP delays the vortices, the propeller then has smooth air to provide best thrust and a pronounced reduction in propeller noise.

Additional benefit of the P-TIP design is the volume of air the propeller produces. When air flows through a standard tip propeller design, the airflow at the tip will flow over the propeller tip. As soon as it passes the tip it will tuck down behind the propeller blade giving a cone of air from the propeller smaller than the propeller diameter. For example, a 72" diameter propeller without a P-TIP will give a volume of air from the propeller of approximately 68" of diameter; a P-TIP propeller will provide 72" of air volume. This means that a 68" P-TIP will give the same volume of air as a standard tip 72" propeller. By reducing propeller diameter there is less frontal area or flat plate drag of the aircraft. Higher top speeds are the result without sacrificing takeoff or climb. Your benefit is a lightweight, pitch changing propeller that will give you the best of short takeoff, maximum cruise, and more flying enjoyment in a quieter cockpit.

COMPOSITE P-TIP PROPELLER - Composite P-Tip Props retain the same qualities of the wood P-TIP but are more efficient and durable. Prince uses the reliable time proven wood core of hard maple, then completely encloses the blades in multiple layers of high tensile strength composites. The hardwood core absorbs the dangerous harmonic vibrations and benefits your airframe by smoothing the engine power pulses, and the composite wrapping allows the airfoils sections to be thinner, reducing drag while increasing durability and locks each blade into operating at precise angles. The best working propeller is one that is rigid enough to allow all blades to move alike, thin at the cord section to eliminate as much drag as possible, and strong enough to satisfy the large amounts of stress required during flight. Urea Formaldehyde adhesive meets Military Specifications to insure reliable operation and trouble free flying for the life of the propeller. Propellers are finished in a metal prop gray color, this shade will match nearly every paint scheme, the Durability and Ultrahigh Gloss finish is a two-part Urethane, machine buffed to achieve a propeller that reflects the quality of manufacturing like no other propeller available.

Note: Request Prince Propeller order form at time of order we will fax or mail form to you to complete to insure correct propeller is furnished for you application.

APPLICATION CHART

| Aircraft | Engine | HP | Dia./Pitch | Hub Thickness | Price Schedule |
|------------------|-----------|-----|------------|---------------|----------------|
| Acro Sport | 0-320 | 150 | 71/48 | 3.7 | F |
| Avid Flyer | Rotax 503 | 52 | 68/34 | 2.1 | B |
| | Rotax 532 | 64 | 71/35 | 2.1 | B |
| Baby Great Lakes | C-80A | 80 | 66/48 | 3.25 | F |
| | 0-320 | 150 | 68/72 | 3.7 | F |
| Cozy | 0-320 | 160 | 68/74 | 3.7 | F |
| | 0-360 | 180 | 68/76 | 3.7 | F |
| | 1834VW | 60 | 52/45 | 2.75 | D |
| Dragonfly | 2100VW | 82 | 52/48 | 2.75 | D |
| | 0-320 | 150 | 68/72 | 3.7 | F |
| | 0-320 | 160 | 68/74 | 3.7 | F |
| Glasair | 0-360 | 180 | 68/76 | 3.7 | F |
| | 0-540 | 270 | 69/113 | 3.7 | F |
| | 0-320 | 150 | 64/62 | 3.7 | E |
| Glass Goose | 0-320 | 160 | 64/64 | 3.7 | E |
| | Rotax 503 | 46 | 68/30 | 2.1 | B |
| Kitfox | Rotax 912 | 80 | 68/47 | 2.25 | B |
| | 1835 VW | 55 | 52/48 | 2.75 | D |
| KR-2 | 2100 VW | 80 | 52/50 | 2.75 | D |
| | Subaru | 75 | 53/68 | 3.7 | D |
| Lancair | 0-200 | 100 | 58/68 | 3.7 | E |
| | 0-235 | 118 | 58/68 | 3.7 | E |
| | 0-290 | 140 | 60/72 | 3.7 | E |
| | 0-320 | 150 | 62/72 | 3.7 | E |
| | 0-320 | 160 | 62/74 | 3.7 | E |
| | 0-360 | 180 | 68/76 | 3.7 | F |

LOW HORSE POWER PROPS

(Ultralight Type) Composite Schedule
 P-Tip P-Tip
 A... Up to 54" \$8.00... \$12.20
 B... 55"-110" \$8.50... \$12.75
Call for Quote on all Prince Aircraft Propellers.

HIGH HORSEPOWER PROPS

Composite Schedule
 P-Tip P-Tip
 C... Up to 45"
 D..... 46"-55"
 E..... 56"-65"
 F..... 66"-110"

MCCAULEY MET-L-PROPS



Original equipment on most Cessna aircraft and popular with owners of many other designs. McCauley has earned an enviable reputation for producing high-performance propellers. Most popular numbers are available from local stock. The Met-L-Prop number designates the model, diameter and pitch. Example: CM7150 is a model CM propeller with a 71 inch diameter and 50 inch pitch. When ordering a new prop which requires a doveled spacer, both spacer and bolt kit are included. Spacers and bolt kits may also be ordered separately. When ordering, specify whether engine has a tapered or flanged crankshaft. Tapered crankshaft requires Kit No.B-4622-6. Flanged crankshaft requires Kit No.B-4622-9. Elliptical tip models 1A90/CF and square tip models 1B90/CM having the same diameter and pitch are directly interchangeable except for CF7538 on Cessna 150G, H, J and K model seaplanes.

| Aircraft Model | Engine | Standrd Prop | Cruise Prop | Climb Prop | Our Price** |
|-----------------|--------------------|--------------|-------------|------------|-------------|
| Beech A23-24 | Lyc.10-360-A2B,A2D | BFA7762+ | | | |
| Bellanca 7ECA | Cont. 0-200A | ACM6948+ | | | |
| Bellanca 7ECA | Lyc. 0-235-C2C | CLM7246+ | CLM7250 | | |
| Bellanca 7GCA | Lyc. 0-320-A2B | GM7452 | GM7455 | GM7450 | |
| Cessna 120,140 | Cont. C-85 | CM7148 | CM7150 | CM7146 | |
| Cessna 120,140 | Cont. C-90 | CM7152 | CM7154 | | |
| Cessna 150A-F | Cont. 0-200A | MCM6950 | | | |
| Cessna 150G-K | Cont. 0-200A | DCM6948 | DCM6950 | | |
| Cessna 150L | Cont. 0-200A | OCM6948+ | | | |
| Cessna 170A,B | Cont. C-145 | MDM7655 | MDM 7656 | MDM7653 | |
| Cessna 172 | Cont. 0-300A,B | MDM 7653 | MDM7655 | MDM7652 | |
| Cessna 172A-H | Cont. 0-300C,D | EM 7653 | EM7655 | EM7652 | |
| Cessna 172L,K,I | Lyc. 0-320E2D | DTM7553+ | | | |
| Cessna 175 | Cont. G0-300A,C | MFC8467 | | | |
| Cessna 175A,B | Cont. G0-300C,D | MFC8467 | | | |
| Cessna 177 | Lyc. 0-320-E2D | TM7653+ | | | |
| Cessna 177A | Lyc. 0-360-A2F | EFA7656+ | | | |
| Great Lakes | Lyc. 0-320-E2A | EGM 7654 | | | |
| Luscombe 8A | Cont. A-75 | CM7447 | CM7449 | | |
| Piper J3 Cub | Cont. C-85 | CM7144 | CM7146 | | |
| Piper PA-18,18A | Lyc. 0-290-D2 | GM8241 | | | |
| Piper PA-32 | Lyc.0-540-F4B5 | PFA8266+ | | | |

Applications and Prices for some Popular McCauley Props. All Models Available. Prices are the same for all props with the same letter prefix.

MCCAULEY DE-ICE BRUSH CLUSTERS



These McCauley De-Ice Brush Clusters from Rapco are FAA-PMA approved and are applicable to any aircraft using the McCauley style brush blocks. Two clusters per block are required. Brush clusters with dash numbers require one of each dash number per block.

| Rapco Part No. | Block No. | Installation | Part No. | Price |
|----------------|-----------|---|----------|-------|
| RAB40012 | C40010 | Cessna: T182 TR182 340A 402C 404 414A 421C 425 | 05-01326 | . |
| RAB40189 | C40179 | Cessna: T182 TR182 340A 401AB 402C 404 414A 421C 425 | 05-01327 | . |
| RAB40046 | C40055 | Cessna: U206G TU206G 210N P210N T210N 210R T210R 310P T310P 310Q T310Q 310R T310R 441 | 05-01328 | . |
| RAB40193 | C40187 | Cessna: U206G TU206G 210N T210N 210R P210N T210R T303 441 | 05-01329 | . |
| RAB40256-1 | C40257 | Raytheon: F33A V35B A36 B36TC 58 58A 58P 58PA 58TC 58TCA B200 B200C B200CT B200T | 05-01330 | . |
| RAB40256-2 | C40257 | Raytheon: F33A V35B A36 B36TC 58 58A 58P 58PA 58TC 58TCA B200 B200C B200CT B200T | 05-01331 | . |
| RAB40371-1 | C40363 | Raytheon: B200 B200C B200CT A200CT | 05-01332 | . |
| RAB40371-2 | C40363 | Raytheon: B200 B200C B200CT A200CT | 05-01333 | . |
| RAB40332 | C40331 | Fairchild: SA227-AT SA227-AC SA227-BC SA227-CC SA227-DC | 05-01334 | . |

PRINCE AIRCRAFT PROPELLER

ORDERING INFORMATION

HOW TO DETERMINE COST

- Select style and price, P-TIP or Composite P-TIP propeller.
- Multiply propeller diameter times price per inch, e.g.: High Horsepower 68" dia. P-TIP propeller, 68 x 13.51 = \$918.68, Composite P-TIP 68 x 18.48 = \$1256.64
- Add Leading Edge Protectors, if required.

MULTI-BLADE PROPS

Three-Blade..... 2 Blade rate x 3 Four-Blade..... 2 Blade rate x 4

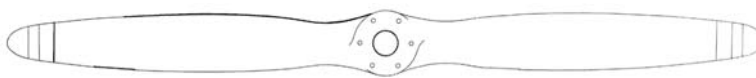
LEADING EDGE PROTECTOR

Up to 48" diameter \$61.00 49" - 110"

AP

SENSENICH PROPELLERS

SENSENICH METAL PROPS



Most popular models of Sensenich metal propellers are available in local stock for immediate shipment. Installation bolt kit is furnished with each propeller. Attaching kit for flange shaft will be packed for all Continental installations unless taper shaft installation is specified. Propellers may be shipped via UPS. Partial List - Request Prices on Unlisted Models. Approximate Shipping Weight 40 Lbs. F.O.B. Corona, CA.

| Aircraft Model* | Engine | Standard Prop | Climb Prop | Cruise Prop | Our Price |
|---|-----------------------|-------------------|--------------|--------------|-----------|
| Aeronca 11AC | Cont. A-65 | 74CK-0-46 | | | |
| Beech Model 23 | Lyc. O-320 (160 hp) | 74DM6-0-60 | 74DM6-0-56 | | |
| Bellanca 7EC, 7FC, 7JC | Cont. C-90 | 76AK-2-46 | 76AK-2-44 | 76AK-2-48 | |
| Cessna 120, 140 | Cont. C-85 | 76AK-2-44 | 76AK-2-42 | | |
| Cessna 150 thru 150K | Cont. O-200 | 69CK-0-52 | | | |
| Cessna 152 | Lyc. O-235 (110 hp) | 72CKS6-0-56 | 72CKS6-0-54 | | |
| Cessna 172 thru 172C | Cont. O-300C, D | 74DC-0-56 | | | |
| Cessna 170 | Lyc. O-360 (180hp) | 76EM8S5-0-56 | 76EM8S5-0-54 | 76EM8S5-0-60 | |
| Cessna 172 Avcon Conv. | Lyc. O-360 (180hp) | 76EM8S5-0-56 | | | |
| Cessna 172, 172A | Lyc. O-360 (180hp) | 76EM8 series | | | |
| Cessna 177 | Lyc. O-360 (180hp) | 76EM8 series | | | |
| Piper J3C65, L4, Cub | Cont. A-65 | 74CK-0-46 | 74CK-0-44 | | |
| Piper PA-11, Cub, J4A | Cont. A-65 | 74CK-0-46 | 74CK-0-44 | | |
| Piper PA-11, PA-18, Cub | Cont. C-90 | 76AK-2-42 | | 76AK-2-46 | |
| Piper PA-18 Super Cub | Lyc. O-235-C1 | 76AM6-2-44 | | | |
| Piper PA-18 Super Cub | Lyc. O-320 (150 hp) | 74DM6-0-56 | 74DM6-0-54 | 74DM6-0-58 | |
| Piper PA-20 Pacer | Lyc. O-235-C1 | 76AM6-2-50 | 76AM6-2-48 | 76AM6-2-52 | |
| Piper PA-22-108 Colt | Lyc. O-235-C1B | 76AM6-2-48 | | 76AM6-2-50 | |
| Piper PA-20, PA-22 | Lyc. O-290-D (125 hp) | 74DM6-0-56 | 74DM6-0-54 | | |
| Piper PA-22 | Lyc. O-320 (150 hp) | 74DM6-0-60 | 74DM6-0-58 | | |
| Piper PA-28-140 Cherokee | Lyc. O-320 (150 hp) | 74DM6-0-60 | 74DM6-0-58 | | |
| Piper PA-38 Tomahawk | Lyc. O-235 (112 hp) | 72CK-0-56 | | | |
| Piper PA-28 140, 4 Cherokee | Lyc. O-320 (150hp) | 74DM6-0-58 | 74DM6-0-56 | | |
| Piper PA-28 150 Cherokee B | Lyc. O-320 (150hp) | 74DM6-0-58 | 74DM6-0-56 | | |
| Piper PA-28 151 Warrior | Lyc. O-320 (150hp) | 74DM6-0-58 | | | |
| Piper PA-28 151 Warrior/160 | Lyc. O-320 (160hp) | 74DM6-0-60 | | | |
| Piper PA-28 160 Cherokee B | Lyc. O-320 (160hp) | 74DM6-0-60 | | | |
| Piper PA-28 180 Archer | Lyc. O-320 (180hp) | 76EM8S5-0-60 | | | |
| Piper PA-28 180 Cherokee C | Lyc. O-320 (180hp) | 76EM8S5-0-60 | | | |
| Piper 181 Archer II ('78) | Lyc. O-320 (180hp) | 76EM8S5-0-62 | | | |
| Pitts Special S1S and S2 | Lyc. 10-360 | 76EM8-0-56 to -61 | | | |
| Taylorcraft BC65, BCD12D | Cont. A-65 | 74CK-0-48 | 74CK-0-46 | | |
| Taylorcraft BC12D85, 485, 19 | Cont. C-85 | 74CK-2-46 | 74CK-2-44 | | |
| Stoddard Hamilton Glasair IITD, FT, RG | Lyc O-320/160hp | | | | |
| Stoddard Hamilton Glasair IITD, FT, RG | Lyc O-320/160hp | | | | |
| Stoddard Hamilton Glasair IIITD, FT, RG | Lyc O-320/160hp | | | | |
| Tri-R (KIS)/116 | Lyc O-235-L2C | | | | |
| Van's RV-3/150, RV-4/150 | Lyc O-320/150hp | | | | |
| Van's RV-3/160, RV-4/160 | Lyc O-320/160hp | | | | |
| Van's RV-6/RV-6A150 | Lyc O-320/150hp | | | | |
| Van's RV-6/RV-6A160 | Lyc O-320/160hp | | | | |
| Zenith CH-2000/116 | Lyc O-235 (116hp) | 72CK-0-46 | | 72CK-0-48 | |
| Zenith CH-2000A/150 | Lyc. O-320 (150hp) | 74DM6S5-0-58 | | | |

*All models listed are land planes.

SENSENICH FLIGHT PERFORMANCE ALUMINUM PROPS FOR VANS AIRCRAFT

For the Lycoming O-235 (125 HP): 72 CK Series Propeller.....72 CK Series Propeller..... P/N 05-01468.....
 For the Lycoming O-320 (150 or 160 HP): 70 CM Series Propeller.....70 CM Series Propeller..... P/N 05-01469.....
 For the Lycoming O-360 (180 HP): 72 FM Series Propeller72 FM Series Propeller P/N 05-01470.....

Both Systems Include:

- High Performance Fixed-Pitch Aluminum Propeller
- Aluminum Propeller Extension Included
- 2 yr or 200hr warranty (whichever comes first)
- Personalized service
- Attaching Hardware Included
- A full 2" dia. reduction allowed for repairs
- Propeller system that can be serviced anywhere.

Specify aircraft model, engine, & pitch (standard, climb, or cruise) when ordering. Also available for Murphy Rebel, Elite, Glasair, Thorp T-18, Tri-R, Midget Mustang, & many other homebuilts.

SENSENICH ALUMINUM PROP BOLT KITS

These propeller bolt kits for Sensenich aluminum propellers include the bolts and washers for propeller attachment.

| Propeller Application | Bolt Kit Part No. | Price | Propeller Application | Bolt Kit Part No. | Price |
|-----------------------|-------------------|-------|-----------------------|-------------------|-------|
| 69CK | AN6H-37AS | . | 76AK | AN6H-32AS | . |
| 72CK | AN6H-37AS | . | 76AM6 | AN6H-33AS | . |
| 74CK | AN6H-32AS | . | 76EM8 | AN8H-46AS | . |

PROPELLER BUSHINGS



SENSENICH A-437 For installations with Continental taper shaft. 5/8" O.D. x 3/8" I.D. x 1/2" Long.

Set of 6 P/N 05-01127.....

MCCAULEY A-1170 5/8" O.D. x 3/8" I.D. x 11/16" Long.

Set of 6 P/N 05-01128.....

SENSENICH PROPELLER FOR CESSNA 172'S

This propeller is STC's for Cessna 172's I thru P using Lycoming O-320 series engines. It is available in pitches of 56 to 60 and no spinner change is required. Features a full 2 inch diameter reduction. Model 74DM7S14-0-56-60 (Specify pitch).....

PROPELLERS

SENENICH WOOD PROPS



Original equipment on Piper, Aeronca, Taylorcraft, Cessna, Ercoupe, Fairchild, and others. Metal tipping and high lacquer finish. Bolts and mounting plates not included. 18 lbs. each. FAA approved for certificated aircraft. Also excellent for experimental aircraft. Aircraft Spruce is an authorized Sensenich factory distributor. *Props w/asterisk are most commonly used props & are normally in stock for immediate shipment.

STANDARD PROP

| Aircraft Models | Engine | Std. Prop | Part No. | Price | Climb Prop | Part No. | Price |
|------------------------------|----------------|-----------|-------------|-------|------------|----------|-------|
| Aeronca 7AC, 11AC, 11ACS | Cont. A65 | W72CK-42 | 05-W72CK-42 | . | W72CK-40 | 05-00583 | . |
| Cessna 120, 140 | Cont. C85 | W74FK-45 | 05-01808 | . | W74FK-44 | 05-01809 | . |
| Commonwealth 185 | Cont. C85 | W74FK-44 | 05-01809 | . | | | |
| Luscombe 8A | Cont. A65/C65 | W76CK-42 | 05-01810 | . | W76CK-40 | 05-01821 | . |
| Piper J-3, J-4A, PA-11, A-17 | Cont. A65/C65 | W72CK-42 | 05-W72CK-42 | . | W72CK-40 | 05-00583 | . |
| Piper J-3 (Duster) | Cont. A75 | W70DK-40 | 05-01811 | . | | | |
| Piper J-4E | Cont. A75 | W70DK-42 | 05-01812 | . | | | |
| Piper J-4F, PA-15 | Lyc. O-145B | W70LY-36 | 05-01813 | . | | | |
| PA-14, PA16, PA-18, PA-20 | Lyc. O-235C1 | W74FM-49 | 05-01814 | . | W74FM-47 | 05-01819 | . |
| PA-20, PA-22 125,135 | Lyc. O-290D/D2 | W74FM-54 | 05-01815 | . | | | |
| PA-18, PA18A | Lyc. O-290D/D2 | W74FM-49 | 05-01814 | . | W74FM-47 | 05-01819 | . |
| T-Craft BC65, BC1265 | Cont. A65 | W72CK-42* | 05-W72CK-42 | . | | | |
| L2, D65, DC065 | | | | | | | |
| T-craft BC12D | Cont. A65 | W72CK-42 | 05-W72CK-42 | . | W72CK-40 | 05-00583 | . |
| BC12D1 | | | | | | | |
| Stinson 10, HW75 | Cont. A70 | W70DK-40 | 05-01811 | . | | | |

AP

AIRBOAT AND LOW HORSEPOWER PROPELLERS



We carry the complete Arrowprop Propeller Co. line of props used on airboats, ice sleds, hovercraft, bowfishing, air drives, and wind machines. These props are for use with engines such as Briggs & Stratton, Rotax, Cuyuna, Tecumseh, Hirth, Yamaha, Kawasaki, Onan, wisconsin, Kohler, Honda, and others.

The props are available in diameters from 26" to 48" and with 2, 3, 4, 5, 6, or 8 blades. All propellers have a 1-3/4" prop hub except for 48" prop which have 2" hubs. **CALL WITH YOUR REQUIREMENTS AND REQUEST QUOTATION.**

TENNESSEE PROPELLERS



Each Tennessee propeller is solidly built by skilled craftsmen from the finest selection of hardwoods. The laminated propeller is carefully assembled, carved, balanced and finished. Standard Rotax hub bolt pattern (others available on request). When ordering, please tell us: 1. Engine type and displacement 2. Left hand or right hand drive 3. Pusher or tractor configuration 4. Gear or belt drive, and reduction ratio 5. Prop diameter and pitch Direction of prop rotation is determined by viewing rotation of prop from behind the aircraft. Left hand rotation is counter-clockwise, right hand rotation is clockwise. **If you're not sure about prop size, give us a call.**

| Description | Part No. | Price | Description | Part No. | Price |
|-------------------|----------|-------|-------------------|----------|-------|
| 36" Prop 1.5" Hub | TP36 | . | 36" Prop 2" Hub | TP362 | . |
| 42" Prop 1.5" Hub | TP42 | . | 42" Prop 1.5" Hub | TP42 | . |
| 44" Prop 1.5" Hub | TP44 | . | 44" Prop 2" Hub | TP442 | . |
| 48" Prop 1.5" Hub | TP48 | . | 48" Prop 2" Hub | TP482 | . |
| 50" Prop 1.5" Hub | TP50 | . | 50" Prop 2" Hub | TP502 | . |
| 52" Prop 1.5" Hub | TP52 | . | 52" Prop 2" Hub | TP522 | . |
| 54" Prop 1.5" Hub | TP54 | . | 54" Prop 2" Hub | TP542 | . |
| 58" Prop 1.5" Hub | TP58 | . | 60" Prop 1.5" Hub | TP60 | . |
| 60" Prop 2" Hub | TP602 | . | 64" Prop 2" Hub | TP642 | . |
| 66" Prop 2" Hub | TP662 | . | 68" Prop 2" Hub | TP682 | . |
| 70" Prop 2" Hub | TP702 | . | 74" Prop 2" Hub | TP742 | . |

ARROWPROP ULTRALIGHT PROPELLERS



| Propeller | Hub Thickness | | | |
|-----------|---------------|----------|----------|----------|
| Diameter | 1-5/8" | 1-3/4" | 2" | 2-1/4" |
| Stock No. | 05-313-- | 05-314-- | 05-315-- | 05-316-- |
| 30" | . | --- | --- | --- |
| 36" | . | --- | --- | --- |
| 38" | . | --- | --- | --- |
| 40" | . | --- | --- | --- |
| 44" | . | --- | --- | --- |
| 46" | . | . | . | --- |
| 48" | . | . | . | --- |
| 50" | . | . | . | . |
| 52" | . | . | . | . |
| 54" | . | . | . | . |
| 56" | . | . | . | . |
| 58" | . | . | . | . |
| 60" | . | . | . | . |
| 62" | --- | . | . | . |
| 64" | --- | . | . | . |

Order by P/N. Use basic P/N at top of column, and complete P/N with prop diameter.

When ordering please give the following:

- Specify clockwise or counter-clockwise rotation
- Specify pusher or tractor type.
- Give center hole size.
- Give bolt circle diameter
- Give number of bolt holes and sizes.
- Specify Aircraft model or prop pitch. For Vinyl Leading Edge Add Additional. For Polyester Leading Edge Add Additional.

PROPELLERS

WARP DRIVE ADVANCED COMPOSITE PROPELLERS



Warp Drive's Advanced Composite Carbon Fiber propeller has a structural strength near that of metal propellers. Because of the stiffness achieved by using carbon fibers, the prop will do very little coning (bending forward) under power. Proper fiber placement allows the prop to flex torsionally for maximum cruise efficiency. The strongly fixed position of the blades along with optimum torsional performance translates into more thrust than conventional propellers.

The interior structure of this new propeller is all carbon fiber - no fiberglass, no foam, no filler - an all carbon fiber matrix combined with top quality hybrid epoxies. Carbon fiber is one of the strongest building materials available. When properly engineered, carbon fiber can achieve the strength and stiffness of a metal part, as demonstrated by its wide range of industrial and aerospace uses.

The interior structure of this new propeller is all carbon fiber - no fiberglass, no foam, no filler - an all carbon fiber matrix combined with top quality hybrid epoxies. Carbon fiber is one of the strongest building materials available. When properly engineered, carbon fiber can achieve the strength and stiffness of a metal part, as demonstrated by its wide range of industrial and aerospace uses.

WARP DRIVE PROPELLER BLADE TYPES

All propellers and blade types are available with **Stainless Steel Leading Edge protection as an option at additional cost.**

- STANDARD ADVANCED COMPOSITE CARBON FIBER BLADES**
The Standard Carbon Fiber Blades can be used on Rotax, Arrow, VW and similar engines.
- HIGH HORSE POWER ADVANCED COMPOSITE CARBON FIBER BLADES**
The Carbon Fiber HP Blade will be required for use on Lycoming, Continental and some auto conversion engines.

WARP DRIVE HUBS

Warp Drive offers two types of hubs of our propellers. First is our Standard Hub. This is an assembly of anodized aluminum plates and composite clamping blocks. It accommodates standard and custom hub bolt patterns of up to 3 1/8".

The second type of hub is the HP Hub. This hub consists of two halves machined from solid aluminum. It is the same weight as the standard hub assembly and can accommodate Rotax, Arrow, VW, SAE I Continental, SAE II Lycoming and custom bolt patterns.

STANDARD CARBON FIBER PROPELLER

- 2-Blade Std Carbon Fiber Propeller..... 05-31920.....
- 3-Blade Std Carbon Fiber Propeller..... 05-31925.....
- 4-Blade Std Carbon Fiber Propeller..... 05-31930.....
- Replacement Std Carbon Fiber Blade..... 05-31935.....

WITH HP HUB

- 05-31940.....
- 05-31945.....

HIGH HORSE POWER CARBON FIBER PROP WITH HP HUB

- 2-Blade Carbon Fiber H/P w/HP Hub..... 05-31950.....
- 3-Blade Carbon Fiber HP w/HP Hub..... 05-31955.....
- Replacement Carbon Fiber HP..... 05-31960.....
- Mounting Hardware (Rotax)..... 05-31965.....
- Protractor..... 05-31970.....
- Non-Standard Hub Pattern..... 05-31975.....
- Spinner (Rotax Pattern)..... 05-31980.....
- "HP" Hub (purchased separately)..... 05-31985.....

ORDERING A PROPELLER

We request all applicable information below when you are ordering:

- Name, Address, Phone Number(s)
- Vehicle - type, make, model, cruise speed, tractor/pusher,
- Engine - make, horse power,
- Reduction Drive - type, ratio. If there is no reduction drive, (State Prop RPM)
- Hub Requirements - A) Bolt circle dia, B) Number of bolts, C) Bolt dims, D) Center hole dims, E) Drive lug dimensions (if applicable),
- Propeller Description-rotation, diameter, structural limitation of diameter manufacturer's suggested prop description, no. of blades, tractor or pusher.

QUICK ADJUST SYSTEM IVOPROPS



The Quick Adjust System Ivoprops allow you to adjust the pitch on the ground in a matter of seconds by turning the screw adjustor in the center of the prop. The supercams are welded on the end of the torsional rods. Each supercam fits into the groove in the screw adjustor. Turning the screw adjustor causes each cam to rotate and turn the torsional rod and thereby twist the blade therefore changing the pitch. Specify aircraft and engine make and model, and propeller diameter. * Ultralight Ivoprop (3.5" cord, 48" to 72" diameter) is for engines up to 100 hp. * Medium Ivoprop (4.5" cord, 52" to 74" diameter) is for engines around 100HP. * Magnum Ivoprop (5.5" cord, 58" to 76" diameter) is a high-horsepower version for engines up to 700 HP. * Magnum Paddle Ivoprop (5.5" constant cord, 58" to 84" diameter) is for high-horsepower air boats and bush planes.

- Ultralight 2-Blade Ivoprop..... P/N 05-33220.....
- Ultralight 3-Blade Ivoprop..... P/N 05-33225.....
- Ultralight 6-Blade Ivoprop..... P/N 05-33235.....
- Medium 2-Blade Ivoprop..... P/N 05-00692.....
- Medium 3-Blade Ivoprop..... P/N 05-00693.....
- Magnum 2-Blade Ivoprop..... P/N 05-33240.....
- Magnum 3-Blade Ivoprop..... P/N 05-33250.....
- Magnum 6-Blade Ivoprop..... P/N 05-33260.....

IN-FLIGHT ADJUSTABLE PITCH IVOPROPS



The In-Flight Adjustable Pitch Ivoprop allows the pilot to change the propeller pitch in flight through a toggle switch mounted in the cockpit. Pressing the toggle switch one way sends an electric current through the graphite brushes to the slip rings and finally to an electric motor. Torque from the electric motor is channeled to a planetary gear drive which turns the lead screw. Torsional rods transmit movement from the center of the prop to the outside section of the blades, causing the blade to twist therefore changing pitch. Total time for the full range of adjustment is about 5 seconds. Mounts directly to any Rotax gear box (B or C0 and can be adapted to VW, Subaru, Hirth, Arrow and smaller Lycoming and Continental engines. Older model Ivoprop ground adjustable props can be converted to the In Flight System with the Retrofit Kit. In Flight adjustable hub comes assembled with complete instructions. Weight of 3 blade 72" In Flight Adjustable Prop including all required parts (furnished) is 9 lbs. Specify aircraft and engine make and model, and propeller diameter (48" to 76"). Standard Ivoprop is for engines up to 100 hp. Medium Ivoprop is for engines around 100HP (52"-74" prop dia.). Magnum Ivoprops are a high-horsepower version with wider blades and a bigger hub for engines up to 700 HP (56"-76" prop. dia.).

Standard 2-Blade Ivoprop Kit..... P/N 05-33205.....

Standard 3-Blade Ivoprop Kit..... P/N 05-33210.....

Standard Retrofit Kit for Ground Adjustable Ivoprops..... P/N 05-33215.....

Medium 2-Blade Ivoprop..... P/N 05-00694.....

Medium 3-Blade Ivoprop..... P/N 05-00695.....

Medium Retrofit Kit for Ground Adjustable Ivoprops..... P/N 05-00696.....

Magnum 2-Blade Ivoprop Kit..... P/N 05-33270.....

Magnum 3-Blade Ivoprop Kit..... P/N 05-33280.....

Magnum 6-Blade Ivoprop Kit..... P/N 05-33290.....

Magnum Retrofit Kit for Ground Adjustable Ivoprops..... P/N 05-33295.....

CONSTANT SPEED ELECTRONIC GOVERNOR



• Converts In-Flight Adjustable Ivoprop into the constant speed propeller • Plugs into existing wiring harness • Size: 2" x 4" x 1" P/N 05-00601.....

ULTRA-PROP



Select 2, 3, or 4 blade props. Each blade is moulded from a high strength glass-reinforced composite. High efficiency airfoil design means high thrust from a 59" diameter prop. One set of pitch blocks included, additional blocks available in 1" increments. Universal hubs made from high strength composite. Accommodates most popular bolt-mounting patterns. Each prop comes complete with all assembly and mounting hardware, and complete instructions. Black blades and hub are beautifully complemented by high impact polyester spinner. Blades can be trimmed to length, allowing custom prop diameters as small as 48".

| Description | Part No. | Price | Description | Part No. | Price |
|----------------|----------|-------|----------------|----------|-------|
| Kit 2 Blade LH | UP102L | | Kit 2 Blade RH | UP102R | |
| Kit 3 Blade LH | UP103L | | Kit 3 Blade RH | UP103R | |
| KIT 4 Blade RH | UP104R | | | | |

ACCESSORIES

| Description | Part No. | Price | Description | Part No. | Price |
|-----------------------|----------|-------|-----------------------|----------|-------|
| Pitch Block Set 9 DG | UP9 | . | Pitch Block Set 10 DG | UP10 | . |
| Pitch Block Set 11 DG | UP11 | . | Pitch Block Set 12 DG | UP12 | . |
| Pitch Block Set 13 DG | UP13 | . | Pitch Block Set 14 DG | UP14 | . |
| Pitch Block Set 15 DG | UP15 | . | Pitch Block Set 16 DG | UP16 | . |
| Pitch Block Set 17 DG | UP17 | . | Pitch Block Set 18 DG | UP18 | . |
| Pitch Block Set 20 DG | UP20 | . | Hardware Pack | UPHDW | . |
| Bolt Sleeve Set | UPSLEEVE | . | Spinner | UPSPIN | . |
| LH Blade White | UP105P | . | Blade RH Yellow | UP105T | . |
| Hub half 2 Blade | UP1072 | . | Hub Half 3 Blade | UP1073 | . |
| Hub Half 4 Blade | UP1074 | . | | | |

SPINNERS

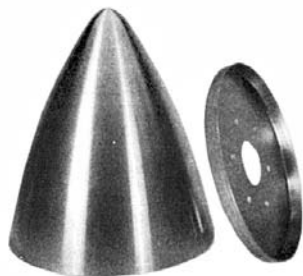
BN-1 BULLET NOSE SPINNER KIT FAA-APPROVED



Designed specifically for fixed pitch wood or metal props installed on horizontal opposed engines with prop hub thickness not exceeding 3-5/8". Kit includes 8" diameter x 12" long spinner dome center hole is 2.68" diameter, two aluminum bulkheads, mounting hardware, templates for trimming dome to fit prop hub and complete installation instructions. Ideal spinner for homebuilts. Wt. 1-3/4 lbs. FAA approved for installation on many certificated aircraft such as Aeronca, Cessna, Luscombe, Piper, Stinson and Swift. FAA approval list on request.

| | |
|-----------------------------|--------------------|
| Complete Kit..... | P/N 10005..... |
| Bulkheads Only: Front | P/N 05-02677 |
| Rear | P/N 10004-R..... |
| Dome Only | P/N 10003 |

SN-4 SPINNER KIT



Aluminum spinner, 9-7/8" diameter, 11-1/8" long. Center hole is 2-1/4" diameter Spinner dome fabricated from .080" thick aluminum for durability. Wt. 2 lbs. Furnished with mounting hardware and trimming and installation instructions. Used on Q2, Q200 and other homebuilts. To order, see "How To Order Spinner Kits".

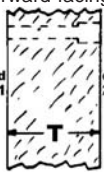
| | |
|---|--------------------|
| Complete Kit..... | P/N 10303..... |
| Rear Bulkhead Only | P/N 10302..... |
| Dome Only | P/N 10301..... |
| SN-4 Kit (undrilled bulkhead) | P/N 05-13200 |
| Optional Front Bulkhead (Not Incl. In Kit) | P/N 10304..... |

Front Plate available for hub thicknesses of 3-3/8", 3-1/2" and 2-3/4" only.

HOW TO ORDER SPINNER KITS

Please furnish the following information so that we may provide the proper spinner kit for your combination of prop hub thickness, prop bolt and prop bushing diameters, and bolt hole pattern. Add \$40.00 for spinner kits with forward facing flange on bulkheads. A forward facing flange replaces the diameter of the spinner dome.

- Spinner Model
 - Prop Hub Thickness (T)
 - Prop Bolt Dia. (d1)
 - Prop Bolt Bushing Dia. (d2)
 - Specify SAE #1 or SAE #2, SAE #3, or Rotax Pattern
 - Also Available in 6 hole, 4" Bolt Circle Diameter.
 - Forward Facing Flange (Yes or No) Additional \$40.00 Fee
- * Note: SAE #1 = 4-3/8" dia.; SAE #2 - 4-3/4" dia.; SAE #3 = 5-1/4" dia.



- Rotax bolt pattern #1: 75mm circle dia. 6 holes 1/4" dia. 1" center hole.
- Rotax bolt pattern #2: 100mm circle dia. 6 holes 5/16". 1" center hole.

SPINNER EXTRA HIGH POLISH "CHROME"



We now offer our complete line of aircraft spinners "high polished", which gives them a beautiful chrome-like appearance. If spinner is to be painted this is not necessary, but if it will be bare, add the High Polish option for a bright, shiny look. Add these prices to the price of the standard spinner and specify "high polish".

| | |
|------------|-----------|
| BN-1 | SN-4..... |
| AC-1 | BN-3..... |
| SN-5 | |

ALL SPINNERS MADE ON STEEL TOOLING

BN-3 SPINNER KIT FOR LYCOMINGS



Aluminum spinner, 12-1/16" diameter, 13-1/4" long. Center hole is 2-5/8" diameter. Designed for installation on homebuilts with Lycoming O-290, O-320 and O-360 engines. Spinner dome and bulkheads fabricated from .080" thick aluminum for durability. BN-3 spinner kits available for props with hub thicknesses of 3-7/16", 3-9/16", 3-3/4", 4-1/4", 4-11/16", 5" and 5-3/8". Wt. 3 lbs. Furnished with predrilled front and rear bulkheads, mounting hardware and trimming and installation instructions. To order, see "How To Order Spinner Kits".

| | |
|-----------------------------------|----------------|
| Complete Kit | P/N 10060..... |
| Rear Bulkhead Only (Large) | P/N 10031..... |
| Front Bulkhead Only (Small) | P/N 10051..... |
| Dome Only | P/N 10022..... |

STANDARD BN-3 KITS

| P/N | Specifications | Price |
|----------------|---|-------|
| 05-10000 | HUB 3-7/16, SAE2, BOLT 3/8, BWII 5/8..... | |
| 05-11000 | HUB 3-9/16, SAE2, BOLT 3/8, BWII 5/8..... | |
| 05-03431 | HUB 3-9/16, SAE2, BOLT 1/2, RWII 3/4..... | |
| 05-03432 | HUB 3-3/8, SAE2, BOLT 3/8 BWII 5/8..... | |
| 05-12000 | HUB 3-3/4, SAE2, BOLT 3/8, BWII 5/8..... | |
| 05-13000 | HUB 4-1/4, SAE2, BOLT 3/8, BWII 5/8..... | |

NOTE: SAE #1 = 4 3/8", 2 = 4 3/4", 3 = 5 1/4"
ALL OTHER BN-3 SPINNERS ARE SPECIAL ORDER

PROP SPACERS

(6061 Aluminum with Prop Bolt Holes Drilled)

| Thickness | P/N | Price | Thickness | P/N | Price |
|-------------|--------------|-------|------------|--------------|-------|
| 1/16" | 10055-1..... | | 1/4" | 10055-4..... | |
| 1/8" | 10055-2..... | | 3/8" | 10055-5..... | |
| 3/16" | 10055-3..... | | | | |

Specify SAE and bolt size. All are special order.

*Furnished in two pieces: 1/4" and 1/8" thick

BN-2 SPINNER KIT



The BN-2 aluminum spinner kit features a 10" long dome and is 10-3/4" in diameter. It is furnished complete with a rear bulkhead and hardware kit.

| | |
|---|-------------------|
| BN-2 Spinner kit w/drilled plate..... | P/N 10340..... |
| BN-2 Dome Only | P/N 10341..... |
| BN-2 Rear Bulkhead only | P/N 10342..... |
| BN-2 Spinner kit w/undrilled plate..... | P/N 05-13500..... |

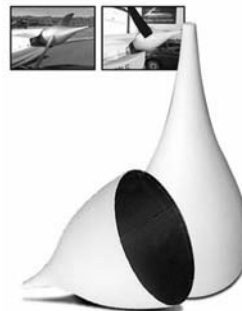
AC-1 SPINNER KIT



Aluminum spinner 10-1/8" diameter. Length of dome varies from 13-1/2" to 15-1/2", depending on prop hub thickness. Heavy duty construction. Furnished with predrilled front and rear bulkheads and streamlined fairing for pusher installations. Kits available for hub thicknesses of 3" to 5". For Lycoming O-235 engines specify SAE #1 (4-3/8" dia.) or SAE #2 (4-3/4" dia.) bolt circle. Wt. 2-3/4 lbs. Furnished with mounting hardware and trimming and installation instructions. To order, see "How To Order Spinner Kits".

| | |
|--|-------------------|
| Complete Kit | P/N 10105..... |
| Kit Less Fairing | P/N 10105-1..... |
| Front (Large) Bulkhead Only | P/N 10102..... |
| Front (Large Heavy Duty) Bulkhead Only..... | P/N 10102HD..... |
| Rear (Small) Bulkhead Only | P/N 10103..... |
| Dome Only | P/N 10101..... |
| Fairing Only..... | P/N 10104..... |
| LG Bulkhead 3/8" Bolt, 5/8" Bushing SAE1 | P/N 05-03428..... |
| LG Bulkhead 3/8" Bolt, 5/8" Bushing SAE2..... | P/N 05-03429..... |

ADVANCED COMPOSITE AC-1 SPINNER DOME



This new super-light spinner dome weighs about 8oz. which drastically reduces the spinner assembly weight and the need for lead ballast in the nose of pusher-type aircraft. This weight savings, combined with the revolutionary new tapered spinner dome which reduces drag can increase the cruise speed of almost any pusher-type homebuilt. These spinners have been used on a modified VariEze to win several air races. This composite dome uses the AC-1 10102HD aluminum bulkheads and the 10104 fairing.

| | |
|------------------------------------|-------------------|
| AC-1 Advanced Composite Dome | P/N 01-28000..... |
| AC-1 10102HD Bulkhead..... | P/N 10102HD..... |
| AC-1 Fairing | P/N 10104..... |

AP

SPINNERS

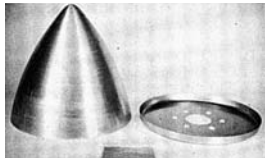
SKULL CAP SPINNERS



5-inch diameter - For wood or metal props on Cont. A-65 to O-200 engines. Complete with mounting bracket and installation hardware. High-polish finish. Top quality. P/N 10210.....

6-inch diameter - For Lycoming O-235 to O-360 engines and Cessna 170's. With mounting bracket and installation hardware. High-polish finish. Top quality. P/N 10220.....

Bracket & Hardware Only (Fits Either Spinner) P/N 05-21800.....



SN-5 SPINNER KIT

12" diameter, 11-1/8" long. Similar to a Piper design and adaptable to many homebuilts. Fabricated from .080" aluminum for durability. Furnished with pre-drilled rear bulkhead. Wt. 2 lbs. Mounting hardware and trimming and installation instructions furnished. To order, see "How

to Order Spinner Kits. Optional Front Bulkhead available for 2 1/16 Hub Thickness.

Complete Kit (less Bulkhead).....P/N 10313
Bulkhead Only.....P/N 10312
Dome OnlyP/N 10311
Front Bulkhead.....P/N 10314
SN-5 Kit (Undrilled Plate).....P/N 05-13300
SN-5 Kit HUB 3-7/16" Bolt 1/2", BWII 3/4" SAE2
P/N 05-03433

COMPOSITE SPINNERS FOR PIPERS & CESSNA'S



P/N 05-00744

These new composite materials spinners and bulkheads are FAA/PMA approved and STCs to replace aluminum spinners and bulkheads on the Piper aircraft models listed below. Bulkheads are constructed for maximum strength and resistance to fatigue due to vibration. Pipers metal versions often crack in 200-300 hours, whereas the composite assemblies have been tested over 4000 hours on a PA-28 with no failure. Spinners for twins & all bulkheads are warranted against vibration fatigue for the life of the aircraft by the factory. **Includes hardware & O-rings.**

| Description | Model | PN | Price |
|-------------------|-------------------------------|----------|-------|
| Spinner Kit | PA28-140/150/160 | 05-28350 | . |
| Spinner Dome | 150A, 150F, 150FA | 05-01257 | . |
| Spinner Dome | 170B, 172, (1956-59) | 05-01258 | . |
| Spinner Dome | 172XP | 05-01259 | . |
| Spinner Dome | 172 Skyhawk (G-Q) | 05-00744 | . |
| Spinner Dome | 182 P, Q Skylane | 05-00746 | . |
| Spinner Dome | 177B, 177RG Cardinal | 05-00747 | . |
| Spinner Dome | 210 (all 3 blade McCauley | 05-00748 | . |
| Spinner Dome | PA-140/150/160 Cherokee | 05-00749 | . |
| Spinner Dome | PA-24-180/250, PA23-150/160 | 05-00752 | . |
| Spinner Dome | PA-24-180/250, PA23-235/250 | 05-00753 | . |
| Bulkhead | PA30, PA23-250 (Aztec) | 05-02659 | . |
| Spinner Dome | PA30, PA23-350 (C model & up) | 05-02660 | . |
| Spinner Dome | PA28-151/161 Warrior | 05-02662 | . |
| Alt. Bulkhead | PA28-151/161 Warrior | 05-02658 | . |
| Fwd. Bulkhead | PA28-151/161 Warrior | 05-02655 | . |
| Spinner | 310R, T310Q, T310R, T310P | 05-00754 | . |
| Rear Bulkhead | PA28-161 Warrior | 05-02663 | . |
| Spinner Dome | PA28-161 Warrior | 05-02661 | . |
| Spinner LH | PA34-200T Seneca II | 05-02665 | . |
| Spinner RH | PA34-200T Seneca II | 05-02666 | . |
| Bulkhead | PA34-200T Seneca II | 05-02664 | . |
| Bulkhead | PA31/-325/-350 Navajo | 05-02667 | . |
| Bulkhead | PA31/-325/-350 Navajo | 05-02668 | . |
| Spinner Dome | PA31/-325/-350 Navajo | 05-02669 | . |
| Spinner Dome | PA31/-325/-350 Navajo | 05-02670 | . |
| Bulkhead only | PA38-112 Tomahawk | 05-02656 | . |
| Spinner Dome | PA28-235 | 05-00756 | . |
| Fwd. Bulkhead | PA28-180/181 Cherokee/Archer | 05-00757 | . |
| Spinner Dome only | PA28-180/181 Cherokee/Archer | 65805-00 | . |
| Spinner Dome | PA32R-300, PA32-260/300/301, | 05-00758 | . |
| Fwd. Bulkhead | PA28R-180/200, PA-235 | 05-00759 | . |
| Spinner Dome | PA38-112 Tomahawk | 05-00761 | . |
| Spinner Dome | PA34-200 Seneca I | 05-00762 | . |
| Fwd. Bulkhead | PA28-161 Warrior | 05-02671 | . |
| Spinner Dome | PA34-200 Seneca I | 05-00763 | . |

ROTAX PROPELLER SPINNERS



For all props with standard Rotax® 75mm bolt pattern. Spinner bulk head is predrilled and installs between prop and gearbox flange. Spinner installs with single bolt.

4" Diameter.....P/N 05-01129
5" Diameter.....P/N 05-01131
6-3/4" Diameter.....P/N 05-01132
7" Diameter.....P/N 05-04447



SN-2 SPINNER KIT

The SN-2 aluminum spinner kit features an 11.5" long dome and 11-5/8" dia. Furnished complete with a rear bulkhead & hardware kit.

SN-2 spinner kit with drilled plates
P/N 10330

SN-2 dome onlyP/N 10331

SN-2 bulkhead only.....P/N 10332

SN-2 spinner kit w/undrilled plates.....P/N 05-13400.....

For spinner kits with drilled plates, please furnish information required for spinners orders as noted on page 179.



UHS FIBERGLASS SPINNERS

UHS spinners are practical, attractive, and flight proven having enhanced the appearance of many different aircraft. The spinners are available in 8", 9", 10", 11", 12" & 14" diameters for various engine and propeller combinations. For GSC, Ivoprop, Warp Drive, and Power Fin propellers using Rotax, Lycoming, Cont. & Mosler engines, spinners are sent cut out and assembled.

For pre-drilled cut-outs we require the following information:

1. Make and size of engine.
2. Make of Propeller.
3. Number of Blades.
4. Size required.

Given adequate information, we can also fabricate spinners for many other propeller-engine combinations. Call with your requirements and we will assess your particular application.

| Size | Description | P/N | Price | Size | Description | P/N | Price |
|------|-------------|----------|-------|-------|-------------|----------|-------|
| 8" | UHS Spinner | 05-09000 | . | 12" | UHS Spinner | 05-09400 | . |
| 9" | UHS Spinner | 05-09100 | . | 14" | UHS Spinner | 05-09500 | . |
| 10" | UHS Spinner | 05-09200 | . | 11.5" | Spinner Kit | 05-09700 | . |
| 11" | UHS Spinner | 05-09300 | . | 13.5" | Spinner Kit | 05-09800 | . |



LYCOMING O-290 PROP FLANGE REINFORCING PLATE

Assures maximum support of prop flange on Lycoming O-290 engines. Precision made of 4130 steel, cadmium plated. Easy to install.

For O-290GP/N 05-28600

For O-290D.....P/N 05-28602

PROP HUB FRONT PLATES



Required for wooden propellers. Flange equivalent to Cont. P/N 3991. For use with A-65, C-85 installations or Lyc. O-235 with SAE1 (43/8") bolt pattern.
P/N 10351Cont.....

Flange equivalent to Lyc. P/N 45688, for use with Lyc. O-235 thru O-360 engines with SAE2 Bolt Pattern engines.
P/N 10352 Lyc.....

AP

CRUSH PLATES - LIGHTNING PROTECTION

CRUSH PLATES FOR WOOD PROPS

| OD | Thickness | Bolt Circle | Bolt Dia. | Part No. | Price |
|----|-----------|----------------|-----------|----------|-------|
| 6" | 3/8" | SAE 1 (4.375") | 3/8" | 05-02464 | . |
| 6" | 3/8" | SAE 2 (4.75") | 3/8" | 05-02465 | . |
| 7" | 3/8" | SAE 2 | 3/8" | 05-02466 | . |
| 7" | 3/8" | SAE 2 | 7/16" | 05-02467 | . |
| 7" | 3/8" | SAE 2 | 1/2" | 05-02468 | . |
| 7" | 1/2" | SAE 2 | 3/8" | 05-02469 | . |
| 7" | 1/2" | SAE 2 | 7/16" | 05-02470 | . |
| 7" | 1/2" | SAE | 1/2" | 05-02471 | . |

PROP SPACERS

Solid Prop Spacers, 6 thru holes. The prop bolt goes thru the prop and spacer and threads into the engine.

| Bolt Diameter | Part No. | Price |
|---------------------------------|----------|-------|
| PRO SPACER 1.5"x5" ROTAX | 05-02472 | . |
| PRO SPACER 2"x5" ROTAX | 05-02473 | . |
| PRO SPACER 2.25"x5" ROTAX | 05-02474 | . |
| PRO SPACER 3"x5" ROTAX (SPOOL) | 05-02475 | . |
| PRO SPACER 4"x5" ROTARY (SPOOL) | 05-04418 | . |

DRIVE LUGS FOR EXTENSIONS



05-28310

05-28410

| Part No. | Type | O.D. | I.D. | Thread | Price Ea. |
|----------|----------|------|------|---------|-----------|
| 05-28310 | Threaded | 5/8 | --- | 3/8-24 | . |
| 05-04417 | Threaded | 5/8" | --- | 7/16-20 | . |
| 05-28410 | Threaded | 3/4 | --- | 1/2-20 | . |

PROP EXTENSIONS



Precision machined prop shaft extensions are available from Aircraft Spruce & Specialty Co. Don't settle for lesser quality at advertised "savings". Prop extensions are machined from solid 2024 T-351 aluminum bar, and are supplied with clear anodized finish and stainless steel drive lugs (installed). 7" diameter prop side is recommended for 0-320 engines running wood props, and is required for 0-360 engines (or larger) running wood props. For Cont. 0-200, you may choose 5.5" diam on engine side. If prop is metal, please measure depth of drilled counterbore at all 6 bolt hole positions.

| Flange Engine | SAE No. | Bolt Circle | Lug Diameter | Eng. Bolt Dia. |
|-------------------|------------|-------------|--------------|----------------|
| Cont. A-65, A-75, | SAE 1 | 4-3/8 | 5/8" | 3/8" |
| C-85, C-90, 0-200 | | | | |
| Lycoming 0-235 | SAE 1 or 2 | | 5/8" | 3/8" |
| Lycoming 0-290 | SAE 2 | 4-3/4" | 5/8" | 3/8" |
| Lycoming 0-320 | SAE 2 | 4-3/4" | 5/8" | 3/8 or 7/16 |
| Lycoming 0-360 | SAE 2 | 4-3/4" | 3/4" | 1/2" |
| Lycoming O-540 | SAE 2 | 4-3/4" | 3/4" | 1/2" |

PLEASE ORDER USING THE FOLLOWING PART NO.

X - length
 - diam
 E - engine
 P - prop
 - SAE
 - ENGINE
 - PROP HUB
 - PROP TYPE

length diam engine prop thr or non 1 or 2 (wood or composite or metal) (Fixed Pitch or constant speed)

prop bolt side 3/8 or 7/16 or 1/2
 prop bolt 3/8 or 7/16 or 1/2
 thr (threaded or non-threaded) lugs installed in extension

Example: 4 X 7 - 7/16 E - 3/8P thr - S2 - Lyc 0320 - wood - wood

12 HOLE SOLID PROP EXTENSION WITH THREADED DRIVE LUGS

| Length x Dia. | Length x Dia. |
|---------------|---------------|
| 1.25"x6" | 1.25"x7" |
| 2.25"x6" | 2.25"x7" |
| 3"x6" | 4"x7" |
| 4"x6" | 6"x7" |
| 6"x6" | 8"x7" |
| 8"x6" | |

PRICES ON PROP EXTENSIONS CAN VARY PER APPLICATION
 PLEASE CALL AND REQUEST A QUOTE FOR YOUR APPLICATION.

LIGHTNING STRIKE PROTECTION WHY THE NEED FOR LIGHTNING STRIKE PROTECTION

Composite materials are poor conductors. Lightning that stops the aircraft is deadly. That's why aircraft structures are "zoned" for relative conductivity . . . to ensure that lightning passes through the aircraft and continues to the ground. The best way to accomplish this process, at the least cost is with lightweight, fantastically flexible MicroGrid...the conductive laminate of choice.



MICROGRID...THE MATERIAL OF CHOICE

MicroGrid precision expanded strike protection in composite aircraft structures. In fact, MicroGrid is used by Boeing, Embraer, and many other aircraft manufacturers. MicroGrid's single unit structure is superior because it can't unravel like woven wire. Nor is costly material removed as in etching or stamping.

The appropriate gauge and pattern of material is easily adhered to the composite for 200,000 amps of conductivity. Aircraft are easily repaired after a lightning strike by simply sanding away the surface to apply a patch of new MicroGrid. And fantastically flexible MicroGrid easily conforms to a variety of shapes and contours in both manufacture and repair. It can be bent, shaped and laminated with a variety of materials, including those which expand, contract and flex.

SPECIFICATIONS

| | Aluminum | Copper |
|----------------------|------------|------------|
| Weight - Lbs./SF | 0.016 | 0.029 |
| Base Metal Thickness | 0.004 inch | 0.003 inch |
| LWD | 0.080 inch | 0.125 inch |
| Overall Thickness | 0.006 inch | 0.005 inch |
| Open Area | 68% | 77% |

ALUMINUM OR COPPER MICROGRID?

Aluminum MicroGrid is ideal for most composite aircraft structure applications and is nearly half the weight of the copper MicroGrid. Copper MicroGrid is recommended for use with carbon fiber structures. Two layers of MicroGrid are recommended over fuel tank applications.

Aluminum MicroGrid (37" wide)..... P/N 05-02631 ft.
 Copper MicroGrid (18" wide)..... P/N 05-02632 ft.

SMOKE SYSTEMS

SMOKE SYSTEM KIT MODELS SA-100 SERIES

All of the SA-100 series smoke system oil tanks are the same size (demensions). Models Differ by oil suction tube design, oil pump mounting location and oil tank configuration.



SA-100 -

- For Level and Non-Continuous inverted, positive G flight.
 - Top mounted oil pump.
 - All hardware for complete installation.
 - Step by step instructions.
 - Height (To top of fill cap is) is 15"
 - Width (End where oil pump is mounted) is 11"
 - Depth (Pump to opposite end of tank) is 8.5"
 - Oil tank capacity: 3.5 US Gallons
 - Approx. oil used per minute: .8 Us Gallons
 - Approx. total run time: 5+ minutes
- P/N 05-01438

SA-101 -

- For continious inverted flight.
 - Top mounted oil pump.
 - All hardware for complete installation.
 - Step by step instructions.
 - Height (To top of fill cap is) is 15"
 - Width (End where oil pump is mounted) is 11"
 - Depth (Pump to opposite end of tank) is 8.5"
 - Oil tank capacity: 3.5 US Gallons
 - Approx. oil used per minute: .8 Us Gallons
 - Approx. total run time: 5+ minutes
- P/N 05-01439

NOTE: Add 1.5" to base on each side or end for bracket width.

SA-100H-

- For Level and Non-Continuous inverted, positive G flight.
 - Side / End mounted oil pump.
 - All hardware for complete installation.
 - Step by step instructions.
 - Height (To top of fill cap is) is 11"
 - Width (End where oil pump is mounted) is 12"
 - Depth (Pump to opposite end of tank) is 15"
 - Oil tank capacity: 3.5 US Gallons
 - Approx. oil used per minute: .8 Us Gallons
 - Approx. total run time: 5+ minutes
- P/N 05-02889

SA-101H-

- For continious inverted flight.
 - Side / End mounted oil pump.
 - All hardware for complete installation.
 - Height (To top of fill cap is) is 11"
 - Width (End where oil pump is mounted) is 12"
 - Depth (Pump to opposite end of tank) is 15"
 - Oil tank capacity: 3.5 US Gallons
 - Approx. oil used per minute: .8 Us Gallons
 - Approx. total run time: 5+ minutes
- P/N 05-01440

NOTE: Add 1.5" to base on each side or end for bracket width.

SA-102-

- For Level and Non-Continuous inverted, positive G flight.
 - Bracket mounted oil pump end or side.
 - All hardware for complete installation.
 - Step by step instructions.
 - Height (To top of fill cap is) is 13"
 - Width (End where oil pump is mounted) is 11"
 - Depth (Pump to opposite end of tank) is 13"
 - Oil tank capacity: 3.5 US Gallons
 - Approx. oil used per minute: .8 Us Gallons
 - Approx. total run time: 5+ minutes
- P/N 05-01440

SA-103-

- For continious inverted flight.
 - Bracket mounted oil pump end or side.
 - All hardware for complete installation.
 - Step by step instructions.
 - Height (To top of fill cap is) is 13"
 - Width (End where oil pump is mounted) is 11"
 - Depth (Pump to opposite end of tank) is 13"
 - Oil tank capacity: 3.5 US Gallons
 - Approx. oil used per minute: .8 Us Gallons
 - Approx. total run time: 5+ minutes
- P/N 05-01441

NOTE: Add 1.5" to base on each side or end for bracket width.

SMOKE SYSTEM KIT MODELS SA-200 SERIES

Both of the SA-200 series smoke system oil tanks are the same size (demensions). Models Differ by oil suction tube design.



SA-200-

- For Level and Non-Continuous inverted, positive G flight.
 - Any Dimension top.
 - Pump can be mounted on top or any side surface.
 - Fill cap and any other fittings installed where you want them.
 - All hardware included for complete installation.
 - Height (To top of fill cap is) is 14"
 - Width (End where oil pump is mounted) is 10"
 - Depth (Pump to opposite end of tank) is 17.25"
 - Oil tank capacity: 5.5 US Gallons
 - Approx. oil used per minute: .8 Us Gallons
 - Approx. total run time: 7+ minutes
- P/N 05-02887

SA-201-

- For continious inverted flight.
 - Any Dimension top.
 - Pump can be mounted on top or any side surface.
 - Fill cap and any other fittings installed where you want them.
 - All hardware included for complete installation.
 - Height (To top of fill cap is) is 14"
 - Width (End where oil pump is mounted) is 10"
 - Depth (Pump to opposite end of tank) is 17.25"
 - Oil tank capacity: 5.5 US Gallons
 - Approx. oil used per minute: .8 Us Gallons
 - Approx. total run time: 7+ minutes
- P/N 05-02891

NOTE: Add 1.5" to base on each side or end for bracket width.

SA-201T SMOKE KIT OIL PUMP

This 5.5 Gallon smoke system kit is for continious inverted flight with oil pump mounted on the top of the oil tank. This particular kit has been installed in the baggage area of a CJ6A, T34A and RV7 to date. Use this kit when height is not an issue. Dimensions: Height (to top of oil pump) 16-1/4", Width (left to right) 13", Depth (end with label) 10"

- P/N 05-03398
- SA-200T Non-Continuous Inverted flight P/N 05-04479

Note: Add 1.5" at base of tank on sides and ends for bracket width.

ACCESSORIES FOR THE SA-100 & SA-200 SERIES

| Accessories | Description | Part No. | Price |
|--|--|----------|-------|
| All components less the oil tank | Virtually every part you will need to complete your smoke system except the oil tank | 05-03366 | . |
| Remote switch kit | Operate your system from control stick, yoke or throttle | 05-01443 | . |
| Second injector kit with initial order | Not Necessay for good smoke, but will make the smoke trail more dense. | 05-02890 | . |
| Second injector kit post order | Not Necessay for good smoke, but will make the smoke trail more dense. | 05-02892 | . |
| Converter | 24 volt DC to 12 volt DV converter (Yak's C.J.'s, T34's etc.) | 05-02893 | . |
| Battery splitter harness | For 24 volt systems that have 2 12 volt batteries linked together to make 24 volts | 05-02894 | . |
| External Fill Kit | This kit has everything right down to the vinyl letter transfer "Smoke Oil Only" and detailed installation instructions. | 05-03595 | . |



SMOKING AIRPLANES.COM HAT

Your headset will fit great with these low profile, unstructured, deluxe, normal dyed cotton and stone washed hats! Features: Embroidered company name and logo Contrasting grey under bill & sweatband Self-fabric sweatband & strap with brass buckle

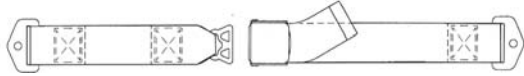
P/N 05-04480

SEAT BELTS & SHOULDER HARNESSSES

FAA CERTIFIED PERSONAL RESTRAINTS

These are top quality, new manufactured assemblies. They are designed, manufactured, and proof tested to rigid FAA standards. All belts use proven lift to release style Davis metal to metal buckles. Push-to-release buckles are not used due to difficulties in releasing under emergency conditions. Aircraft quality alloys and 2-inch nylon webbing are used throughout. Belts are certified to FAA TSO-C22f.

STYLE NO. 1A SEAT BELT



Most popular metal-to-metal seat belt. This 56" adjustable seat belt offers a heavy-duty combination of an all-nylon 2" wide herringbone webbing and a metal-to-metal "quick release" buckle. Buckle mates with harness adapters (Shoulder Harness Items 3B or 3C) for safety belt/harness set or use belt alone. The end fittings for each side of the lap belt have a .325 in. dia. hole which allows for a fastener/bolt to slide through, depending on the design of the aircraft/aircraft seat is where it attaches.

| P/N | Color | Price | P/N | Color | Price |
|----------|-----------|-------|----------|------------|-------|
| 13-00201 | Black | . | 13-00205 | Royal Blue | . |
| 13-00202 | Brown | . | 13-00206 | Gray | . |
| 13-00203 | Tan | . | 13-00207 | Red | . |
| 13-00204 | Navy Blue | . | 13-00210 | Green | . |

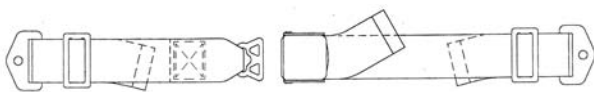
STYLE NO. 1B SEAT BELT



Same as style No. 1A above except with #442868 clip type end fittings. The end fitting hooks have spring loaded clips that allows each side of the lap belt to clip on to an existing fastener or rod. When the clip is closed the effective hole dia. for both these belts is .37 in.

| P/N | Color | Price | P/N | Color | Price |
|----------|-----------|-------|----------|------------|-------|
| 13-00301 | Black | . | 13-00305 | Royal Blue | . |
| 13-00302 | Brown | . | 13-00306 | Gray | . |
| 13-00303 | Tan | . | 13-00307 | Red | . |
| 13-00304 | Navy Blue | . | 13-00310 | Green | . |

STYLE NO. 2A SEAT BELT



If belts are needed to replace worn ones in an aircraft in which the attachment fittings have been installed and approved, it is customary to install belts with a slide adjustment bar which permits weaving webbing through existing fitting and through bar for secure installation. Drawing shows correct method of lacing the webbing through bar. Belt is 56" long x 2" wide. The end fittings for each side of the lap belt have a .325 in. dia. hole which allows for a fastener/bolt to slide through, depending on the design of the aircraft/aircraft seat is where it attaches.

| P/N | Color | Price | P/N | Color | Price |
|----------|-----------|-------|----------|------------|-------|
| 13-00401 | Black | . | 13-00405 | Royal Blue | . |
| 13-00402 | Brown | . | 13-00406 | Gray | . |
| 13-00403 | Tan | . | 13-00407 | Red | . |
| 13-00404 | Navy Blue | . | 13-00410 | Green | . |

STYLE NO. 2B SEAT BELT



Same as style No. 2A above except with #442868 clip type end fittings. Standard equipment in White Lightning aircraft. Black only.
P/N 13-19601

SEAT BELT HARDWARE



TRIANGULAR END FITTING
P/N 13-04101
. Ea.



CLIP TYPE END FITTING
P/N 442868 (Steel)
. Ea.



SLIDE ADJUSTER
P/N 442663
. Ea.

STYLE NO. 2C TWO PERSON SEAT BELT

Two Person Seat Belt - Although FAA requires that each person be provided an individual seat belt, some early aircraft were licensed using an extra-long belt in the rear seat to accommodate two people. If it is not possible to modify the aircraft to accept two belts, a two person belt is permissible. Same metal-to-metal belt as illustrated in Figure 1 but rated at 3000 lbs. test. Length 60". Advise if different length is required. Two-person belts with slide bars not acceptable by FAA. The 3" wide belt and 2" wide harness are of heavy-duty nylon webbing.

| P/N | Color | Price |
|----------|------------|-------|
| 13-00501 | Black | . |
| 13-00502 | Brown | . |
| 13-00503 | Tan | . |
| 13-00504 | Navy Blue | . |
| 13-00505 | Royal Blue | . |
| 13-00506 | Gray | . |
| 13-00507 | Red | . |
| 13-00510 | Green | . |



STYLE NO. 4 - MILITARY STYLE SEAT BELT AND SHOULDER HARNESS COMBINATION



Harness has forged steel belt buckles permitting "one-stroke" release from both belt and harness. Stocked in Black.
Complete Set(Black) P/N 13-01000
Certified Belt Only P/N 13-01100
Harness Only(Black) P/N 13-01200

OTHER COLORS

| | Olive Green | Price | Royal Blue | Price | Neutral | Price |
|---------|-------------|-------|------------|-------|-----------|-------|
| Set Kit | 13-04105 | . | 13-04124 | . | 13-04118 | . |
| Belt | 13-04106 | . | 13-04125 | . | 13-04119 | . |
| Harness | 13-04107 | . | 13-04126 | . | 13-04120 | . |
| | Silver Grey | Price | Brown | Price | Navy Blue | Price |
| Set Kit | 13-04108 | . | 13-04127 | . | 13-04130 | . |
| Belt | 13-04109 | . | 13-04128 | . | 13-04131 | . |
| Harness | 13-04110 | . | 13-04129 | . | 13-04132 | . |
| | Red | Price | Tan | Price | | |
| Set Kit | 13-04121 | . | 13-04133 | . | | |
| Belt | 13-04122 | . | 13-04134 | . | | |
| Harness | 13-04123 | . | 13-04135 | . | | |

STYLE NO. 5 SEAT BELT/HARNESS SET FOR HOMEBUILTS



Specially designed for the VariEze, this popular combination is also used in the Long-EZ, Quickie, Q2, Cozy, Sea Hawk and several other homebuilts. The belts are made to fit snugly, and the aluminum end fittings save weight. Order two sets for all above aircraft except Quickie which uses one set. Not FAA approved for certificated aircraft.
P/N 13-01300 Set

PIPER SEAT BELT DECAL SETS



This is a beautiful decal set for all the Piper Seat Belt Buckles. The seat belt buckles on Piper's are always being dinged and pitted and nothing looks worse than to have a beautiful interior with ugly belt buckles. With our new decals, the ugly belt buckles become an attraction instead of an eyesore.

Four Place Piper Set P/N 05-02448 Set
Six Place Piper Set P/N 05-02449 Set

NOTE: SEE NEXT PAGE FOR SHOULDER HARNESSSES COMPATIBLE WITH THESE SEAT BELTS.

AP

SEAT BELTS & SHOULDER HARNESSSES

STYLE NO. 3A "Y" SHOULDER HARNESS



PN 13-00601

Harness with stitched-in webbing loops for use with any 2" wide seat belt. Belt simply slides through loops and secures. Harness is "Y" type with one attachment fitting furnished.

Black Only..... P/N 13-00601

See illustration of 3A and 3C harnesses.

STYLE NO. 3B "Y" SHOULDER HARNESS



PN 13-00701

CS-647 Fittings Left & Right (As used on 3B & 3C harnesses) /set Harness with two chrome-plated steel adapters on front webbing extensions which mate with metal-to-metal buckle for safety belt/harness set. Harness is "Y" type with one attachment fitting furnished. Lift buckle to release belt and harness. Order belt separately.

| P/N | Color | Price |
|----------|-----------|-------|
| 13-00701 | Black | . |
| 13-00702 | Brown | . |
| 13-00703 | Tan | . |
| 13-00704 | Navy Blue | . |

| P/N | Color | Price |
|----------|------------|-------|
| 13-00705 | Royal Blue | . |
| 13-00706 | Gray | . |
| 13-00707 | Red | . |
| 13-00710 | Green | . |

NOTE: These shoulder harnesses mate with #1 and #2 seat belts on the previous page but the harnesses are not FAA approved for certificated aircraft. Only the seat belts carry FAA approval.

FAA APPROVED SEAT BELT/SHOULDER HARNESS SETS CESSNA·BEECH & PIPER·AERONCA·STINSON



13-00901-1

These new manufactured seat belt and shoulder harness combination sets are FAA-STC-PMA approved for installation in the certificated aircraft listed in the chart below. This line of seat

belts and shoulder harnesses are of the highest quality and each set includes one belt, one harness, attaching hardware, and installation instructions. The seat belts feature a 3 bar slide, and the shoulder harnesses are "Y" style. These sets are available in a full array of colors to suit the interior of your aircraft. Cessna sets meet requirements of Cessna service bulletin SEB 92-28. *FOR FRONT SEAT ONLY!

NOTE: Complete part number with color choice use: -1 (black), -2 (navy), -3 (brown), -4 (royal blue), -5 (red), -6 (tan), -7 (green), or -8 (silver gray). Example: P/N 12-00000-5 is a Cessna 182 belt/harness set in red.

| Application | Part No. | Price ea. | Application | Part No. | Price ea. |
|-------------------|----------|-----------|------------------------|----------|-----------|
| Cessna 120/140 | 13-00901 | . | Piper J-3, PA-11 Front | 13-00913 | . |
| Cessna 150/152 | 13-00902 | . | Piper J-3, PA-11 Rear | 13-00914 | . |
| Cessna 170 | 13-00903 | . | Piper PA-18 Front | 13-00921 | . |
| Cessna 172 | 13-00904 | . | Piper PA-18 Rear | 13-00922 | . |
| Cessna 175A,B,C | 13-00905 | . | Piper PA-20 | 13-00915 | . |
| Cessna 180 | 13-00906 | . | Piper PA-22/22-108 | 13-00916 | . |
| Cessna 182 | 13-00907 | . | Piper PA-28 | 13-00917 | . |
| Cessna 185 | 13-00908 | . | Aeronca/Champ Front | 13-00918 | . |
| Cessna 206 | 13-00909 | . | Aeronca/Champ Rear | 13-00919 | . |
| Cessna 207 | 13-00910 | . | Stinson | 13-00920 | . |
| Beech 35 Pilot | 13-00911 | . | | | |
| Beech 35 Co-Pilot | 13-00912 | . | | | |

Note: PN 13-00917-6 is for a PA-28 without ceiling vent system. If you have a vent system without modification, it will not work for your airplane. Piper PA-28 set is furnished as 2 belts/2 harnesses. All others are 1 belt/1 harness.

STYLE NO. 3C TWO STRAP SHOULDER HARNESS



Harness with two chrome-plated steel adapters on front webbing extensions which mate with metal-to-metal buckle for safety belt/harness set. Harness has two separate straps with two attachment fittings furnished. Lift buckle to release belt and harness. Order belt separately.

| P/N | Color | Price |
|----------|-----------|-------|
| 13-00801 | Black | . |
| 13-00802 | Brown | . |
| 13-00803 | Tan | . |
| 13-00804 | Navy Blue | . |

| P/N | Color | Price |
|----------|------------|-------|
| 13-00805 | Royal Blue | . |
| 13-00806 | Gray | . |
| 13-00807 | Red | . |
| 13-00810 | Green | . |

STYLE 3D "H" TYPE SHOULDER HARNESS



"H" Style Harness

This "H" style harness provides a maximum length between shoulder harness attachment points of 85 inches. This harness is designed for use with standard seat belts as offered in this catalog. Color: Black. "H" style shoulder harness.

P/N 13-00762

CHRISTEN 820 AEROBATIC SEAT BELT/HARNESS SYSTEM



The Christen 820 Seat Belt/Harness System was designed specifically for use in unlimited-class competition aerobatic flying. The System holds the pilot firmly in the aircraft seat during high negative-g maneuvers and supports the body laterally against side forces during tumbling, slipping or knife-edge flight. Although of extremely light-weight design, all components are of the highest aviation quality, and the system is manufactured in full compliance with the requirements of FAA TSO C22f. The basic Christen 820 System consists of a black shoulder harness, lap belt and crotch strap. Also available are a lap pad, a secondary seat belt for back-up safety, and accessory hardware to facilitate installation in a variety of aircraft. The lap belt, crotch strap, and shoulder harness are locked in a single buckle with flush latch which provides positive retention. All belts are released quickly and simultaneously by simply lifting the edge of the buckle latch. Standard end fittings attach to airframe brackets using 5/16 inch bolts (not included). All metal components bright chrome plated. All webbing 2 inches wide, black color. Includes detailed product manual. Meets FAA TSO C22f, 180 lb. Tensile. Maximum extended lengths of belt assemblies from end fitting to connector are: shoulder harness 50 inches, buckle lap belt 30 inches, connector lap belt 32 inches, crotch strap 26 inches. Weight 2.9 lb.

| | |
|---|-------------------|
| Seat Belt/Harness System..... | P/N 05-01133..... |
| Lap Pad (Black) | P/N 05-01134..... |
| Crotch Strap Connector for 7/8" Tubing... | P/N 05-01135..... |
| Crotch Strap Connector for 1" Tubing..... | P/N 05-01136..... |
| Seat Belt Brochure | P/N 05-01137..... |

SEAT BELTS & SHOULDER HARNESSSES

SCHROTH AVIATION RESTRAINT SYSTEMS

Schroth seat belts offer a unique 3-point restraint and a superior center turn buckle for the 4 and 5 point systems. Schroth restraint systems use specially designed harness webbing which actually stretches at a controlled rate to help reduce G-forces to the occupant. Schroth harnesses feature single point rotary harness buckles. Higher initial release force helps prevent accidental releases. Then as the buckle is rotated, the regressive forces insure the ability to release the buckle when under tension, such as in bail out situations or if the aircraft comes to rest upside down. Schroth harnesses come with micro slip adjusters to allow you to snug the belts down to stay secure during aerobatic flight or turbulence. Schroth restraints are the lightest and most compact systems available, and are manufactured in Germany to TSO C-114 (FAA approved). Available in stock configurations as shown. Request Schroth custom restraint order form for unlisted aircraft.



| Make | Model | Description | Part No. | Price |
|---------|-------|----------------------------------|----------|-------|
| Grumman | AA1 | 3-point Left Side | 13-00664 | Call |
| | | 3-point Right Side | | |
| | | 3-point Left Side Inertia Reel | 13-06028 | Call |
| | | 3-point Right Side Inertia Reel | | |
| | | 3-point Front Left Inertia Reel | 13-00666 | Call |
| | AA5 | 3-point Front Right Inertia Reel | 13-00667 | Call |
| | | 3-point Front Static Left Side | | |
| | | 3-point Front Static Right Side | | |
| | | 3-point Rear Static Left Side | 13-06036 | Call |
| | | 3-point Rear Static Right Side | | |
| Mooney | 201 | 3-point Left Inertia Reel | 13-00670 | Call |
| | | 3-point Right Inertia Reel | | |

| Make | Model | Description | Part No. | Price |
|--|---------------------|-------------------------------------|----------|-------|
| Vans | RV-6/6A, 777A, 9/9A | 4-point left side static pull down | 13-00671 | Call |
| | | 4-point right side static pull down | | |
| | | 5-point left side static pull up | 13-00672 | Call |
| | | 5-point right side static pull up | | |
| | | 4-point left side static pull up | 13-06030 | Call |
| | | 4-point right side static pull up | | |
| Note: Uses Factory attach points. 5-point requires fabrication of an attach point for crotch strap. | | | | |
| Vans | RV-4, 8/8A | 4-point front static pull up | 13-00673 | Call |
| | | 4-point rear static pull up | | |
| | | 5-point front static pull up | 13-00674 | Call |
| | | 5-point rear static pull up | 13-06031 | Call |
| | | 5-point front static pull down | 13-06032 | Call |
| Note: Uses Factory Attach points. 5-point requires fabrication of an attach point for crotch strap. | | | | |
| Lancair | 320/360 | 4-point left or right | 13-00669 | Call |

01-Black, 02-Dark Gray, 03-Light Blue, 04-Brown, 05-Tan, 06-Navy Blue, 09-Burgundy, 10-Pepperdust, 14-Cruiser Gray, 18-Cappuccino, 29-Light gray, 80-Dark Green, 91-Azure Blue, 93-Yellow, 94-Red, 95-Purple



MICROFLIGHT RESTRAINING SYSTEMS



Complete pilot/passenger restraining systems for ultralights and experimentals. Made in the U.S.A., there's no stamped low-grade hardware in these top-quality sets. The webbing has a tensile strength of 6000 psi. These systems are designed for specific aircraft. Find yours in the

table below. Some systems will also fit other aircraft not listed in the table. Stock systems are black with silver hardware.

Special Order Optional Colors: Webbing - red, blue, yellow, silver, brown.....
 Hardware - gold, black.....
 L links (instead of sewn to lap).....

Allow 2 to 4 weeks delivery time.

MATERIALS SPECIFICATIONS

Not Certified, but Manufactured to MIL-1-45208:
 Adapter Proof-load = 2500 lbs.
 Adjuster Proof-load = 2000 lbs.
 Quick-Release Buckle Assembly Proof-load = 2500 lbs.

Not Certified, but Manufactured to MIL-W-4088J:
 Webbing Tensile Strength = 6000 lbs.

| Aircraft Type | Part Number | Price/Ea. |
|---------------------------------|-------------|-----------|
| T-Bird | 13-03834 | . |
| Tierra | 13-03835 | . |
| J3 Kitten | 13-03836 | . |
| X, MXL, I & II | 13-03838 | . |
| Sprint, Sport | 13-03839 | . |
| GT-400 | 13-03841 | . |
| GT-500 | 13-03842 | . |
| Phantom I | 13-03843 | . |
| Kitfox | 13-03844 | . |
| Avid Flyer | 13-03845 | . |
| Buckeye Paraplane | 13-03846 | . |
| Buccaneer | 13-03847 | . |
| MaxAir | 13-03840 | . |
| RANS S-12/S-14 (specific) | 13-03848 | . |
| Renegade (front & rear) | 13-03864 | . |
| Explorer | 13-03849 | . |
| Zephyr | 13-03850 | . |
| Talon | 13-03851 | . |
| Thundergull | 13-03852 | . |
| Titan Tornado | 13-03853 | . |
| Challenger | 13-03854 | . |
| Hurricane | 13-03855 | . |
| Spitfire | 13-03856 | . |
| N-3 Pup | 13-03857 | . |
| CGS Hawk | 13-03858 | . |
| UltraPup (front & rear) | 13-03859 | . |
| Fisher | 13-03860 | . |
| Weedhopper | 13-03837 | . |
| Kolb Mark III | 13-03861 | . |
| Kolb Firestar II (front & rear) | 13-03862 | . |
| Kolb Firestar II (front only) | 13-03863 | . |

HOOKER CUSTOM HARNESSSES

The popular Sport Harness Set from Hooker is ideal for a wide variety of experimental aircraft. The set includes one 1-3/4" military style seat belt, one 1-3/4" military style shoulder harness, one 1-3/4" crotch strap, and one pad set. (For Citabria, Decathlon, Champ, or Scout aircraft please add \$25.00 for yoke assembly).

With pad set P/N 13-00925.....
 Without crotch strap P/N 13-00930.....

AEROBATIC HARNESS SET

The Hooker Aerobatic Harness set is very popular with sport and competitive aerobatic pilots. The set includes two 1-3/4" military style seat belt, one 1-3/4" military style shoulder harness, one 1-3/4" crotch strap, and one pad set. (For Citabria, Decathlon, Champ, or Scout aircraft please add \$25.00 for yoke assembly).

With one pad set P/N 13-00935.....
 With stainless ratchet tightener P/N 13-00950.....

HOOKER CESSNA FIXED SHOULDER HARNESS KIT (PER SEAT)

This set includes new double adjustable seat belt, shoulder harness, installation kit with necessary hardware, brackets and the STC paperwork. The STC currently covers installation in Cessna models 120, 140, 140A, 150, 152, 170, 172, 175, 180, 182 (except R182 and TR 182), 185, 205, 206, and 210 (through F model). Installation of this set does not require drilling holes in the external skin or the removal of the wings. The installation is accomplished from within the airplane and installation time usually runs 60-90 minutes with the headliner removed. Pads are not included.

P/N 13-00955.....
NOT AVAILABLE IN THE REAR. SPECIFY AIRCRAFT TYPE & COLORS OF WEBBING WHEN ORDERING.

COLORS AVAILABLE (HOOKER)

2" Webbing: Red, Dragon Red, Burgundy, Orange, Air Force Gold, Olive Drab, Sage Green, Baby Blue, Royal Blue, Navy Blue, Tan, Beige, Silver, Gray, Dark Gray, Black
1-3/4" Webbing: Red, Air Force Gold, Kelly Green, Olive Drab, Sage Green, Jade Green, Royal Blue, Navy Blue, Purple, Silver Gray, Dark Gray, Tan, Black
Pad Fabric: Red, Burgundy, Navy Blue, Royal Blue, Lemon Yellow, Air Force Gold, Dark Gray, Olive Drab, Sage Green, Silver Gray, Pink, Turquoise, Orange, Green, Jade, Lavender, Purple, Tan, Brown, Black
Trim: Red, Burgundy, Navy Blue, Royal Blue, Lemon Yellow, Air Force Gold, Dark Gray, Olive Drab, Sage Green, Silver Gray, Pink, Turquoise, Orange, Green, Jade, Brown, Lavender, Purple, Tan, Black
SPECIFY WEBBING, (PAD TRIM AND PAD COLORS WHEN APPLICABLE) WHEN ORDERING ALL HOOKER HARNESS PRODUCTS

STC'D SEAT BELTS & SHOULDER HARNESSSES

ALPHA AVIATION RESTRAINT SYSTEMS

Note: FAA/ STC/ PMA Installation kits include complete new TSO-C114 belt assemblies for each pilot position. FAA/ STC/ PMA Installation kits include all hardware to upgrade both pilot positions. OEM quality, AMSAFE Incorporated belt assemblies meeting TSO-C114. Standard colors are black, gray & fawn. For custom colors, please order the color swatches (P/N 05-03146). Belts are sold individually except for the STC'd installation kits.



Beechcraft Replacement Rear

BEECHCRAFT STC SHOULDER HARNESS KITS

3 Point Diagonal Systems

- * Complete New Belt Assemblies
 - * Shoulder and Lap Belts for 2 Seats-Pilot & Co-Pilot
 - * All Required Hardware
 - * Instruction Manual
 - * Supplemental Type Certificate
- STC, 3RS-114FS Fixed Restraint, Kit..... P/N 05-03127
- STC, 3RS-114IR Inertial Reel, Kit..... P/N 05-03128
- Lap Belt P/N 05-03134

| BEECHCRAFT APPROVED MODEL GUIDE | | | | | | | |
|---------------------------------|------|-----|---------|---------|------|-------|-----|
| 35 | H35 | 36 | 35-33 | 95 | B95 | A56TC | 58 |
| 35R | J35 | A36 | 35-A33 | 95-5 | B95A | | 58A |
| A35 | K35 | | 35-B33 | 95-A55 | D95A | | |
| B35 | M35 | | 35-C33 | 95-B55 | | | |
| C35 | N35 | | 35-C33A | 95-B55A | D55 | | |
| D35 | P35 | | | 95-B55B | D55A | | |
| E35 | S35 | | E33 | 95-C55 | | | |
| F35 | V35 | | E33A | 95-C55A | E55 | | |
| G35 | V35A | | E33C | | E55A | | |
| | V35B | | | | E95 | | |
| | | | F33 | | | | |
| | | | F33A | | | | |
| | | | F33C | | | | |
| | | | | | | | |
| | | | G33 | | | | |

AP



CESSNA STC SHOULDER HARNESS KITS

Cessna Shoulder Harness Kits

- * New Belt Assemblies -Shoulder & Lap Belts for Pilot & Co-Pilot
 - * All Required Hardware
 - * Instruction Manual
 - * Supplemental Type Certificate
- STC, C100-114IR, Front Inertial Reel, Kit P/N 05-03131
- Cessna STC, C100-114FS, Front Fix Strap, Kit..... P/N 05-04193

| Cessna 100 Model List | | | | | | | |
|-----------------------------|------------------|-------|------------------|-------|-------|------|------|
| Original Type Certificate # | Aircraft Models | | | | | | |
| A-799 | 170 | 170A | 170B | | | | |
| 3A12 | 172 | 172A | 172B | 172C | 172D | 172E | |
| | | 172F | 172G | 172H* | 172I | 172K | |
| | *172F (USAFT41A) | | *172H (USAFT41A) | | | | |
| 3A17 | 175 | 175A | 175B | 175C | P172D | | |
| 5A6 | 180 | 180S | 180B | 180C | 180D | 180E | |
| | | 180F | 180G | 180H | | | |
| 3A13 | 182 | 182A | 182B | 182C | 182D | 182E | |
| | | 182F | 182G | 182H | 185J | 182K | 182L |
| | | 182M | 182N | 182P | | | |
| 3A24 | 185 | 185A | 185B | 185C | 185D | 185E | |
| | A185E | A185F | | | | | |



CESSNA OEM REPLACEMENT BELTS

- * Replace Your Existing Shoulder Harnesses
 - * Complete New Belt Assemblies - Shoulder and Lap Belts
- Cessna 100/200 OEM Replacement
- Front, Fixed Strap P/N 05-03132
- Cessna 100/200 OEM Replacement Inertial Reel, Upgrade P/N 05-03133
- Cessna OEM Replacement (all models) Rear Lap Belts P/N 05-03134



177, 177A NEEDING SHOULDER HARNESS INSTALLATION KIT

- 177B Replacement Belt Assemblies OEM Replacement, 3-Point Restraint Systems
- * Replace Your Existing Shoulder Harnesses
 - * Complete New Belt Assemblies - Shoulder and Lap Belts
- Cessna 177/177A Minor Change Kit P/N 05-03135

| PA 23 STC APPROVED MODELS | | |
|-----------------------------|------------|-----------|
| PA-23 | PA-23-160 | PA23-235 |
| PA-23-250 | PA-E23-250 | |
| PA28/32 STC APPROVED MODELS | | |
| PA28-140 | PA28R-180 | PA32-260 |
| PA28-150 | PA28R-200 | PA-32-300 |
| PA28-160 | | |
| PA28-180 | PA28S-160 | PA32S-300 |
| PA28-235 | PA28S-180 | |

MOONEY SHOULDER HARNESS INSTALLATION

3 Point Diagonal Systems

- * M20, A, B, C, D, E, F, G 3 Point Diagonal Harness Installation
 - * M20J Replacement Seat Belts
 - * Complete New Belt Assemblies - Shoulder and Lap Belts
- 3-Point System "Minor Change Kit" M20 A-G (Includes the Required Hardware for Two Pilot Positions)..... P/N 05-03139
- Mooney M20 Inertial Reel Upgrade
- Front Inertial Rear 1 P/N 05-03133
- Mooney M20 Replacement Front Fixed Strap P/N 05-03132
- Mooney Replacement Rear Lap Belt P/N 05-03134



PIPER STC SHOULDER HARNESS KITS

3 Point Diagonal Systems

- * Complete New Belt Assemblies
 - * Shoulder and Lap Belts for 2 Seats - Pilot & Co-Pilot
 - * All Required Hardware
 - * Instruction Manual
 - * Supplemental Type Certificate
- STC, PA23-114IR Front Inertial Reel, Kit..... P/N 05-03141
- Piper STC, PA28-1141R Front Inertial Reel, Kit P/N 05-03143
- Piper OEM Replacement Front Fixed Strap. P/N 05-03132
- Piper OEM Replacement Front Inertial Reel P/N 05-04194
- Piper Replacement All Model Rear Lap Belt P/N 05-03134
- Piper STC, PA23-114FS Front Fixed Strap, Kit P/N 05-04193
- Piper STC, PA28-1141R Front Inertial Reel, Kit P/N 05-03143

Piper OEM Replacement Front Inertial Reel P/N 05-04194

Piper Replacement All Model Rear Lap Belt P/N 05-03134

Piper STC, PA23-114FS Front Fixed Strap, Kit P/N 05-04193

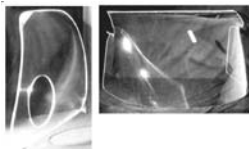
Piper STC, PA28-1141R Front Inertial Reel, Kit P/N 05-03143

COLOR SWATCHES

Color swatches for your desired color group are available to be shipped to you via priority mail. When you have chosen your color, you can place your order by phone (1-877-4-SPRUCE) or order online. Then return the color swatches to Aircraft Spruce and we will credit you the \$25.00 charge when you place your order for seatbelts/harnesses. For domestic orders only. International customers, please call for pricing. Custom color belts/harnesses are special order and are non-returnable. Lead time is three weeks for a custom color order.

P/N 05-03146.....

L&P AERO WINDSHIELDS



WINDSHIELDS COMPLETE WINDOW SETS - SKYLIGHTS -LANDING LIGHT LENSES

Replacement glass for over 350 different aircraft models from the oldest to the latest production - both domestic and foreign. Each can be confirmed with serial and model number, year of manufacture, thickness of material and cross-referenced with OEM part number. Manufactured of high optic quality acrylics. Available in clear, green and solar gray tints. For ease of installation, they are trimmed to OEM specifications with instructions furnished. Our manufacturer's quality control systems are approved by both the FAA and the Department of Defense. To assure quick delivery at minimum cost, orders are shipped directly from our manufacturer's warehouse in Pennsylvania or California. Extensive inventories on hand in both locations making shipment possible in 24 hours in most cases. Generally speaking, one-piece windshields require shipment by motor freight, two-piece windshields can be shipped by United Parcel Service. Windshields requiring motor freight shipment on the following list are marked with an asterisk. Attractive Air Freight rates All windshields/windows are special order, they are non-cancelable and non-returnable. Only a few models are listed - over 35 available. Advise complete aircraft model and serial number, Leave the rest to us!

FLY COOLER, HEALTHIER AND SMARTER

with UV-SG and UV-GT tint windshields and windows from LP Aero Plastics

Say so long to sun damage. Blocking the sun's damaging rays benefits you, your passengers and your aircraft. With far less UV and IR radiation entering the cabin, occupants are less likely to suffer sun-related skin and eye damage - and they'll enjoy cooler cabin temperatures to boot. **UV-SG Solar Gray and UV-GT Green tints can reduce interior temperatures by as much as 20 degrees.** While you and your passengers work in greater comfort, you'll also reduce the workload on the air conditioning systems. UV and IR radiation can also wreak havoc on avionics and interior components, such as plastic panels and seat materials. That damage is significantly reduced with the UV-SG and UV-GT tints.

| Aircraft | Clear PN | Clear Price | Smoke PN | Smoke Price | Green PN | Green Price | Aircraft | Clear PN | Clear Price | Smoke PN | Smoke Price | Green PN | Green Price |
|--|----------|-------------|----------|-------------|----------|-------------|---|----------|-------------|-----------|-------------|----------|-------------|
| 192 Aeronca Citabria 7ECA, 7GC4A, 7GCBC, 7KCA8 | 192C | . | 192SG | . | 192C | . | Ercoupe 415 or G-Bubble | 351C | . | 05-02283 | . | 05-02285 | . |
| Aeronca Chief 11AC, BC, CC | 05-02177 | . | 05-02229 | . | 05-02228 | . | Grumman AA1, AA1A, AA1B | 657C | . | 05-02286 | . | 05-02287 | . |
| Bellanca Viking | 05-02188 | . | 05-02231 | . | 05-02330 | . | Grumman AA1,AAA-1A, AA-1B Canopy | 658C | . | 05-02288 | . | 05-02289 | . |
| Beech Bonanza Lft. 187 thru G-35 | 250C | . | 05-02227 | . | 05-02226 | . | Grumman AA5, AA-5A, AA5B | 05-02189 | . | 05-02290 | . | 05-02291 | . |
| Beech Bonanza Rt. 187 thru G-35 | 251C | . | 05-02233 | . | 05-02232 | . | Luscombe 8 Series | 400C | . | 400SG | . | -- | -- |
| Beech Bonanza Lft. 250 H-35-V-35, Baron 55 | 280C | . | 05-02235 | . | 05-02234 | . | Mooney MK20-21,1959-64 Lft. | 100C | . | 05-02292 | . | 05-02293 | . |
| Beech Bonanza Rt. 250 H-35-V-35, Baron 55 | 281C | . | 05-02237 | . | 05-02236 | . | Mooney MK20-21,1959-64 Rt. | 101C | . | 05-02294 | . | 05-02295 | . |
| Cessna 120-140 S/N 8001 to 8799 | 301C | . | 05-02239 | . | 05-02238 | . | Mooney 1965-1969 (4 cabin Windows) Lft. | 133C | . | 05-02296 | . | 05-02297 | . |
| Cessna 120-140 S/N 8800 + up | 300C | . | 300SG | . | 05-02240 | . | Mooney 1965-1969 (4 cabin Windows) Rt | 134C | . | 05-02298 | . | 05-02299 | . |
| Cessna 140A, 150, 152 | 303C | . | 303SG | . | 303G | . | Mooney 1967-1969 (6 cabin Windows 1 pc.) | 05-02190 | . | 05-02301 | . | 05-02302 | . |
| Cessna 170 1948-49 to S/N 18728 | 310C | . | 05-02242 | . | -- | -- | Mooney M20J and M20K | 05-02192 | . | 05-02303 | . | 05-02304 | . |
| Cessna 170A S/N 18729 to 20676 | 306C | . | 05-02243 | . | 05-02244 | . | Piper J-3 | 450C | . | 450SG | . | 05-02278 | . |
| Cessna 172 S/N 47747 to 49544 | 05-02178 | . | 05-02245 | . | 05-02246 | . | Piper PA-12-Round Top | 455C | . | 05-02305 | . | 05-02306 | . |
| Cessna 170B S/N 20267+up 1952 to 1955 | 312C | . | 05-02247 | . | 312G | . | Piper PA-12 Square Top | 456C | . | 456SG | . | 05-02352 | . |
| Cessna 172 S/N 28000 to 47746 | 312C | . | 05-02247 | . | 312G | . | Piper PA-15, 16, 17 | 459C | . | 05-02308 | . | 05-02309 | . |
| Cessna 172 S/N49545 to 50572 | 313C | . | 05-02250 | . | 05-02249 | . | Piper PA-22 Tripecer, 108 Colt, Bubble | 463C | . | 463SG | . | 05-02352 | . |
| Cessna 172 S/N 50573 to 72884 | 345C | . | 345SG | . | 345G | . | Piper PA-23 Apache S/N 1502 + up Rt. | 05-02193 | . | 05-02310 | . | 05-02311 | . |
| Cessna 172 S/N 72885 & up | 337C | . | 05-02251 | . | 337G | . | Piper PA-23-250 S/N 27-2000 +up Lft. | 421C | . | 05-02312 | . | 05-02313 | . |
| Cessna R172K S/N R2000 to R3199 | 05-02179 | . | 05-02252 | . | 05-02179 | . | Piper PA-23-250 S/N 27-2000 + up Rt. | 422C | . | 05-02314 | . | 05-02315 | . |
| Cessna 177, 177RG | 329C | . | 05-02253 | . | 05-02254 | . | Piper PA-24 Comanche Lft. | 05-02194 | . | 05-02316 | . | 05-02317 | . |
| Cessna 180 S/N 30000 to 31260 | 309C | . | 05-02255 | . | 05-02256 | . | Piper PA-24 Comanche Rt. | 05-02195 | . | 05-02320 | . | 05-02321 | . |
| Cessna 180 S/N 31261 to 50355 | 315C | . | 05-02257 | . | 05-02258 | . | Piper PA-25 Pawnee S/N 1-655 | 485C | . | 05-02318 | . | 05-02319 | . |
| Cessna 180 S/N 50356 to 51183 | 316C | . | 316SG | . | 05-02259 | . | Piper PA-25 Pawnee S/N 656 + up | 486C | . | 05-02322 | . | 05-02323 | . |
| Cessna 182 S/N 33000-51556 | 315C | . | 05-02257 | . | 05-02258 | . | Piper PA-28 Cherokee S/N 1 + up Lft. (.125) | 490C | . | 490SG | . | 490G | . |
| Cessna 182 S/N 52566-53598 | 316C | . | 316SG | . | 05-02259 | . | Piper 28 Cherokee S/N 1 + up Rt. (.125) | 491C | . | 491SG | . | 491G | . |
| Cessna 182 S/N 53599 to 55844 | 338C | . | 05-02262 | . | 05-02261 | . | Piper PA-28 Cherokee (.250) Lft. | 905C | . | 905SG | . | 05-02324 | . |
| Cessna 182 S/N 55845 to 64296 | 339C | . | 339SG | . | 339G | . | Piper PA-28 Cherokee (.250) Rt. | 907C | . | 907SG | . | 05-02325 | . |
| Cessna 205 | 325C | . | 05-02263 | . | 05-02264 | . | Piper PA-32-260 S/N 1-7300076 Lft. | 492C | . | 05-02326 | . | 05-02327 | . |
| Cessna 206 S/N U206-0001 thru U206-0437 | 325C | . | 05-02263 | . | 05-02264 | . | Piper PA-32-260 S/N 1-7300076 Rt. | 493C | . | 05-02328 | . | 05-02329 | . |
| Cessna P206 S/N 0001 thru 0160 | 325C | . | 05-02263 | . | 05-02264 | . | Piper PA-38-112 Tomahawk S/N 78A0001 to 82A0122 | 795C | . | 05-02330 | . | 05-02331 | . |
| Cessna U206 S/N 0438+up | 326C | . | 05-02265 | . | 326G | . | Rockwell 112, 114 | 508C | . | 05-02332 | . | 05-02333 | . |
| Cessna P206 S/N 0161+up | 326C | . | 05-02265 | . | 326G | . | Stinson 108 Lft. | 552C | . | 05-02334 | . | 05-02335 | . |
| Cessna 207 | 05-02180 | . | 05-02269 | . | 05-02268 | . | Stinson 108 Rt. | 553C | . | 05-02336 | . | 05-02337 | . |
| Cessna 210 S/N 57841 to 58220 | 325C | . | 05-02263 | . | 05-02264 | . | T/Craft BC-12d,1946+up | 650C | . | 05-02338 | . | 05-02339 | . |
| Cessna 210 S/N 58221 to 58510 | 05-02182 | . | 05-02266 | . | 05-02267 | . | T/Craft BC-1940-41, Pre-war BC-65 | 651C | . | 05-02340 | . | 05-02341 | --- |
| Cessna 210 S/N 58511 to 58715 | 325C | . | 05-02263 | . | 05-02264 | . | Piper PA-28 Cherokee A-28, -140, -150, -160, -180, -235 | 055C | . | 05-02346 | . | 05-02347 | . |
| Cessna 210 S/N 58716 to 58818 | 326C | . | 05-02265 | . | 326G | . | Cessna 152, A152, F152, FA152 | 303/302C | . | 303/302SG | . | 303/302G | . |
| Cessna 210 S/N 58937 + up | 05-02183 | . | 05-02271 | . | 05-02270 | . | Cessna 152, A152, F152, FA152 | 312/CMB | . | 05-02353 | . | 05-02354 | . |
| Cessna 310 S/N 35000 to 35546 | 05-02184 | . | 05-02272 | . | 05-02273 | . | Cessna 170B S/N 20267+up 1952 to 1955 | 312/CON | . | 05-02359 | . | 05-02360 | . |
| Cessna 310 S/N 35547 to 39299 | 05-02187 | . | 05-02275 | . | 05-02274 | . | Cessna 150, A150, F150, FA150 | 360C | . | 05-02348 | . | 05-02349 | . |
| Cessna 310 S/N 310-0001 to 310 K-0245 | 05-02187 | . | 05-02275 | . | 05-02274 | . | PA-18, PA-19(L-18C) | 464C | . | 05-02356 | . | 05-02350 | . |
| Cessna 310 S/N Loo01 to 310Q0400 | 05-02185 | . | 05-02277 | . | 05-02276 | . | PA-20, PA-22 | 05-02357 | . | 462SG | . | 462G | . |
| Cessna 310 S/N Q0401+up | 05-02186 | . | 05-02280 | . | 05-02281 | . | Cessna 172, P172, F172 | 05-02358 | . | 05-02351 | . | 389G | . |



WINDSHIELDS – CANOPIES

HEAVY THICKNESS WINDSHIELDS

STC Conversions

We now carry these STC Conversion extra thick windshields which are FAA approved for the following aircraft and which install as easily as the standard .250 thick windshields. Available in 3 thicknesses.

| Part No. | Thickness | Price |
|----------|-----------|-------|
| 269.312 | .312 | |
| 269.375 | .375 | |
| 269.500 | .500 | |

Note: Verify that your serial number is eligible before ordering.

FAA APPROVAL LIST

Beech Bonanza F33
s/n CD-1235 – CD 1254
Beech Bonanza G33
s/n CD-1255 – CD 1304
Beech Bonanza F33A
s/n CE-290 and up
Beech Bonanza F33C
s/n CJ-26 and up
Beech Bonanza 33 thru E33A
s/n CD-1 – CD-1234, CE-1 – CE-289, CJ-1 – CJ-25
Beech Bonanza H35 thru V35A-TC
s/n D4866 – D9068

Beech Bonanza V35B thru V-35B-TC
s/n D9069 and up
Beech Bonanza 36 & A36
s/n E-1 and up
Beech Bonanza A36TC & B36TC
s/n EA-1 and up
Beech Baron 58 & 58A
s/n TH-1 and up
Beech Baron TC58 & 58TCA
s/n TK-1 and up
Beech Travelair 95 thru E95
s/n TD-1 – TD-721

INDIVIDUAL WINDOWS

| Window Model No. | Aircraft | Description | Each |
|------------------|------------|-------------------------------------|------|
| 231 | Aeronca | Left front sliding-forward | |
| 232 | 7AC | Left front sliding-rearward | |
| 233 | | Left or Right rear | |
| 234 | | Right front door | |
| 225 | Aeronca | Left or Right front door (sliding) | |
| 226 | 11AC | Left or Right rear (Door) (sliding) | |
| 227 | | Left or Right rear | |
| 342 | Cessna | Left or Right door | |
| 343 | 120/140 | Left or Right rear | |
| 344 | | Left or Right skylight | |
| 370 | Cessna | Left or Right rear | |
| 374 | 170 | Left or Right door | |
| 362 | Cessna | Left or Right rear | |
| 369 | 180 | Left or Right door | |
| 006 | J-3 | Skylight | |
| 008 | | Left front triangle | |
| 009 | | Left pilot sliding | |
| 010 | | Left rear | |
| 011 | | Right rear | |
| 012 | | Right door | |
| 436 | PA-12 | Left front (sliding) | |
| 437 | | Left rear | |
| 438 | | Door | |
| 439 | | Right rear | |
| 015 | PA-16,20 | Right door | |
| 016 | 22 | Right rear | |
| 021 | | Left front stationary | |
| 017 | | Left front sliding | |
| 019 | | Left rear door | |
| 465 | PA-18 | Right door | |
| 466 | | Right or Left rear | |
| 467 | | Rear sliding | |
| 468 | | Front sliding (left) | |
| 469 | | Left pilot | |
| 020 | Late PA-20 | Left or Right square (rear) | |
| 021 | | Left front pilot | |
| 023 | | pilot-vented | |

CESSNA 150/152/172/177/182/210 WINDOWS

Aircraft Spruce stocks replacement windows for Cessna single and twin engine aircraft as well as all windshields and windows manufactured by LP Aero Plastics. Call or email Aircraft Spruce for quotation and specify year, serial number of aircraft and windows required.

Call: 1-877-4SPRUCE
Email: info@aircraftspruce.com

WINDSHIELD INSTALLATION ACCESSORIES

Foam Sealing Tape – 1/4"x1/16" x 100' roll..... /rl
Felt – Adhesive-backed 3/32"x1-1/2" /ft

CANOPIES FOR HOMEBUILTS

These canopies for homebuilt aircraft are made from the finest quality materials and are available in clear, green or smoke tint. All canopies are shipped via truck or UPS freight collect. Canopies are special order and are non-cancelable and non-returnable.

Specify Clear, Green or Smoke Tint.

| Aircraft | Thickness | Price |
|---|-----------|-------|
| Acroduster I (29" or 34" long) | 1/8" | |
| Acroduster II | 1/8" | |
| Acrosport (29" or 34" long) | 1/8" | |
| Barracuda | 3/16" | |
| Berkut | 1/8" | |
| Cassutt Standard (flat wrap) | 1/8" | |
| Cozy Mark IV Canopy | 1/8" | |
| Cozy Mark IV Window Set | 1/8" | |
| Cozy Canopy | 1/8" | |
| Cozy Window Set | 1/8" | |
| EAA Biplane (single seat) (29" or 34" long) | 1/8" | |
| E-Racer | 3/16" | |
| Emeraude | 3/16" | |
| GP-4 | 3/16" | |
| KR-1 | .080 | |
| KR-2 | 1/8" | |
| KR-2 (Super Canopy) | 1/8" | |
| Long-EZ | 1/8" | |
| Moni/monerai | .080 | |
| Mustang II | 3/16" | |
| Osprey II Standard Canopy w/o rear windows | 1/8" | |
| Osprey II Bubble Canopy w/rear windows | 1/8" | |
| Osprey II Rear Window set | 1/8" | |
| Pitts S-1 (bubble style, not factory Pitts) | 1/8" | |
| Quickie (Q1) | .080 | |
| Quickie 2 (Q2) | 3/16" | |
| RV-3 | 1/8" | |
| RV-4 | 1/8" | |
| Skybolt (rear seat) (29" or 34" long) | 1/8" | |
| Skybolt (full canopy) | 1/8" | |
| Sonerai I | 1/8" | |
| Sonerai II | 1/8" | |
| Sonerai II (extra visibility "big" canopy) | 1/8" | |
| Starduster I | 1/8" | |
| Starduster II | 1/8" | |
| Starduster II (rear seat only) | 1/8" | |
| T-18 Windshield | 3/16" | |
| VP-1 | 1/8" | |
| VP-2 | 1/8" | |
| Vari-Eze | 1/8" | |

Request quote on unlisted models. We can furnish CUSTOM CANOPIES from 3 view drawings. Send detailed sketch or print for quotation.

TODD'S CANOPIES



These optically perfect canopies are the very best quality available. They are superior in quality and less expensive than other sources. The Cozy and AeroCanard canopies include the windows, and the Berkut includes front and rear canopy. Prices include crating, and freight averages \$70 to \$100.

| Aircraft | Clear P/N | Price | Tinted P/N | Price |
|-----------------|-----------|-------|------------|-------|
| AeroCanard | 05-01145 | . | 05-01146 | . |
| Berkut | 05-01147 | . | 05-01148 | . |
| Cozy III | 05-01149 | . | 05-01151 | . |
| Cozy Mark IV | 05-00437 | . | 05-00438 | . |
| ERacer | 05-01152 | . | 05-01153 | . |
| Long EZ | 05-00439 | . | 05-00440 | . |
| Varieze | 05-01154 | . | 05-01155 | . |
| Christian Eagle | 05-01156 | . | 05-01157 | . |
| Harmon Rocket | 05-01158 | . | 05-01159 | . |
| KR2S | 05-01160 | . | 05-01161 | . |
| Osprey | 05-01162 | . | 05-01163 | . |
| RV-3 | 05-01164 | . | 05-01165 | . |
| RV-4 | 05-01166 | . | 05-01167 | . |
| RV-8 | 05-01168 | . | 05-01169 | . |

ASHBY AIRCRAFT GLARESHIELDS – BRS



ASHBY AIRCRAFT GLARESHIELDS

Produced from 100% fiberglass that is hand-laminated to form a one-piece structure. They are manufactured out of fire retardant resin that meets Federal Aviation Regulations (FAR) parts 23 and 25. Prevent sun from reflecting in your instruments, allowing you to read them clearly. It will also protect sensitive instruments from heat and is impervious to damage from the sun's rays. Molded with a rich leather texture, which is pleasing to the eye, and has a semi-gloss black finish. On most models it fits flush with the windshield, and extending 3" past the front of the panel. A reinforced lip for mounting optional lights to illuminate the instrument panel, which also serves as hand-holds when entering and exiting the cockpit, or when adjusting your seats. There is also space for switches and annunciator lights.

CESSNA

| For Model | Glareshield | | w/ 12V Lights | | w/24V Lights | |
|--|-------------|-------|---------------|-------|--------------|-------|
| | Part No/ | Price | Part No/ | Price | Part No/ | Price |
| 120, 140, 150 (thru F, 1959-1966), 150G thru L (1967-1977), 152 (1978-1986) | 05-03871 | . | 05-03908 | . | 05-03945 | . |
| 170, 170A (1948-1951), 172 (1956-1958) | 05-03872 | . | 05-03909 | . | 05-03946 | . |
| 170B, 1952-1956 | 05-03873 | . | 05-03910 | . | 05-03947 | . |
| 172A thru D (1960-1963), 175 (all) | 05-03874 | . | 05-03911 | . | 05-03948 | . |
| 172 959 only | 05-03875 | . | 05-03912 | . | 05-03949 | . |
| 172E thru N, 172P, 172Q, 172XP, 172RG 1974-1986 (all) | 05-03876 | . | 05-03913 | . | 05-03950 | . |
| 180A thru H, 182 thru D, 185 thru E, F Models Prior to 1974 | 05-03877 | . | 05-03914 | . | 05-03951 | . |
| 180J, 185 (1974-1986) | 05-03878 | . | 05-03915 | . | 05-03952 | . |
| 182 (1962-1963) | 05-03879 | . | 05-03916 | . | 05-03953 | . |
| 182 1964-1965 (Early Slight Radius on Top.) | 05-03880 | . | 05-03917 | . | 05-03954 | . |
| 182 (1969-1974) | 05-03881 | . | 05-03920 | . | 05-03957 | . |
| 182 (1975 only) | 05-03884 | . | 05-03921 | . | 05-03958 | . |
| 205 (1963-1965 early) | 05-03885 | . | 05-03922 | . | 05-03959 | . |
| 182 (1976-1986) | 05-03886 | . | 05-03923 | . | 05-03960 | . |
| 182R, 210 (1963-1965 early) | 05-03887 | . | 05-03924 | . | 05-03961 | . |
| 206 1965 (Late) -1967 Not avail. for 1968-1969, 210 1965 (Late) -1967 Not avail. for 1968-1969 | 05-03888 | . | 05-03925 | . | 05-03962 | . |
| 206 (1970-1986), 210 (1970-1986) | 05-03889 | . | 05-03926 | . | 05-03963 | . |
| 210 (1960-1961) | 05-03890 | . | 05-03927 | . | 05-03964 | . |
| 210 (1962 only) | 05-03891 | . | 05-03928 | . | 05-03965 | . |
| XP210 | 05-04096 | . | 05-04097 | . | 05-04098 | . |
| 336 (all), 337 (all) | 05-03892 | . | 05-03929 | . | 05-03966 | . |

PIPER

| For Model | Glareshield | | w/ 12V Lights | | w/24V Lights | |
|---|-------------|-------|---------------|-------|--------------|-------|
| | Part No/ | Price | Part No/ | Price | Part No/ | Price |
| PA-23 (1956-1963) | 05-03893 | . | 05-03930 | . | 05-03967 | . |
| PA-24, PA24-250, 260, 400, PA-30 (all) | 05-03894 | . | 05-03931 | . | 05-03969 | . |
| PA-28-140, 150, 151, 160, 161, 181, 201T, 235, 236, PA-28S-160, 180, PA-28R-180, 200, 201, 201T, PA-28RT-201, 201T, PA-44-180, 180T | 05-03895 | . | 05-03932 | . | 05-03970 | . |

PIPER CONT.

| For Model | Glareshield | | w/ 12V Lights | | w/24V Lights | |
|--|-------------|-------|---------------|-------|--------------|-------|
| | Part No/ | Price | Part No/ | Price | Part No/ | Price |
| PA-28(1964-1967), PA-28-150, 160, 180, 235 (Large Hump over Radio Stack) | 05-03896 | . | 05-03933 | . | 05-03971 | . |
| PA-32-260, 300, 301, 301T, 301FT, 301XTC, PA-32S-300, PA-32R-300, 301T, 301(SP), 301(HP), PA-32RT-300, 300T, PA-34-200, 200T, 220T | 05-03897 | . | 05-03934 | . | 05-03972 | . |
| PA-38 (all) | 05-03898 | . | 05-03935 | . | 05-03973 | . |

BEECHCRAFT

| For Model | Glareshield | | w/ 12V Lights | | w/24V Lights | |
|--|-------------|-------|---------------|-------|--------------|-------|
| | Part No/ | Price | Part No/ | Price | Part No/ | Price |
| BE-23 | 05-04093 | . | 05-04094 | . | 05-04095 | . |
| BE-33 1947-1961, BE-35 1947-1961 | 05-03899 | . | 05-03936 | . | 05-03974 | . |
| BE-33 1962-1971, BE-35 1962-1971, BE-55 1962-1971, BE-95 1962-1971 | 05-03901 | . | 05-03938 | . | 05-03975 | . |
| Same as above with Plenum | 05-03902 | . | 05-03939 | . | 05-03976 | . |
| Same as 05-03901 with insert | 05-04196 | . | --- | --- | --- | --- |
| BE-33 1962-1971, BE-35 1962-1971, BE-55 1962-1971, BE-95 1962-1971 | 05-03903 | . | 05-03940 | . | 05-03977 | . |
| BE-33 1972-1983, BE-35 1972-1983, BE-36 1971-1983, BE-58 1971-1983 | 05-03905 | . | 05-03942 | . | 05-03979 | . |
| BE-33 1962-1983, BE-35 1962-1983 | 05-03904 | . | 05-03941 | . | 05-03978 | . |
| Same as above with Plenum | 05-03906 | . | 05-03943 | . | 05-03980 | . |

MOONEY

| For Model | Glareshield | | w/ 12V Lights | | w/24V Lights | |
|-----------------|-------------|-------|---------------|-------|--------------|-------|
| | Part No/ | Price | Part No/ | Price | Part No/ | Price |
| 201 (1977-1983) | 05-03907 | . | 05-03944 | . | 05-03981 | . |

LIGHTS

PMA Approved Panel Rope Lights, 12 or 24 Volts DC, 18" or 34" Long. Illuminates instruments with 8 or 12 2000+ hour bulbs, respectively.

| Lights | Part No. | Price |
|-------------------------|----------|-------|
| 12 Volts, 8 Bulbs, 18" | 05-03998 | . |
| 24 Volts, 8 Bulbs, 18" | 05-03999 | . |
| 12 Volts, 12 Bulbs, 34" | 05-03994 | . |
| 24 Volts, 12 Bulbs, 34" | 05-03995 | . |

WINDLOCK

Designed to attach to an aircraft's controls inside the cockpit. The none-ridged mechanism keeps tension on the Elevators, holding them in the full down position, which normally prevents the aircraft from leaving the ground, regardless of wind direction. This position also allows moisture to drain from inside the control surface, helping to prevent corrosion.

P/N 05-04044

BALLISTIC PARACHUTES FOR ULTRALIGHTS AND KIT PLANES



CANISTER - The BRS Canister is waterproof when the original factory seal remains intact, making it the perfect design for exterior installations. With a six year repack schedule and versatile mounting hardware, it is one of the most popular systems.

SOFTPACK - The BRS Softpack is best suited for aircraft manufacturers that require a ballistic parachute mounted inside their aircraft. When mounted internally, this system also has a six year repack schedule..

VLS - Built specifically for aircraft with limited interior space, the VLS (Vertical Launch System) installs on top of the wing or fuselage. Upward firing works well with pusher designed aircraft.

| BRS-6 System | Maximum Weight (lbs./kg) | Max. Deploy Speed (mph/km/h) | System Weight (lbs./kg) | Dimension L x W x D | Part Number | Price |
|-------------------|--------------------------|------------------------------|-------------------------|---------------------|--------------|-------|
| 600 Canister | 600/272 | 138/222 | 22/10 | 8 x 7 round | 13-04071 | . |
| 600 Softpack | 600/272 | 138/222 | 18/9 | 10 x 10 x 5.5 | 13-04072 | . |
| 600 VLS | 600/272 | 138/222 | 23/11 | 18 x 11.5 x 7.5 | 13-04073 | . |
| 800 Canister | 800/363 | 138/222 | 23/11 | 21.5 x 7 round | 13-04075 | . |
| 800 Softpack HD | 800/363 | 138/222 | 19/10 | 10 x 11 x 5.5 | 13-04076 | . |
| 800 VLS | 800/363 | 138/222 | 25/12 | 18 x 11.5 x 5.5 | 13-04077 | . |
| 1050 Canister | 1,050/475 | 138/222 | 28/13 | 21.5 x 7 round | 13-32445 | . |
| 1050 Softpack HD | 1,050/475 | 138/222 | 24/11 | 10 x 11 x 5.5 | 13-32446 | . |
| 1050 VLS | 1,050/475 | 138/222 | 29/13 | 18 x 11 x 5.5 | 13-32445-VLS | . |
| 1350 Softpack LSA | 1,350/612 | 138/222 | 29/13 | 15 x 10.5 x 6 | 13-04079 | . |
| 1350 VLS | 1,350/612 | 138/222 | 34/15 | 18 x 11.5 x 5.5 | 13-04080 | . |
| 1350 High Speed | 1,350/612 | 184/296 | 33/15 | - | 13-04081 | . |
| 1600 Softpack HD | 1,600/726 | 138/222 | 35/16 | 20 x 8.5 x 9 | 13-04082 | . |

WINDSHIELDS – VORTEX GENERATOR KITS



CEE BAILEY AIRCRAFT PLASTICS

Cee Bailey's Aircraft Plastics has been producing superior replacement windows and windshields for light aircraft since 1955. These windshields are custom built to fit your aircraft's serial number. This handcrafting insures a perfect, distortion-free windshield, trimmed and ground to fit your aircraft with little or no modification. Optical qualities, contour, shape and fit are exceptional. All windshields and windows are FAA/PMA approved. Cee Bailey warrants its products against defective materials and workmanship. Most windows and windshields are available in clear, green, and solar grey. Prices are for clear. Add 15% to prices for green or grey tints. When ordering, specify model number, year, and serial number of the aircraft.

| Make/Model | Price | Make/Model | Price | Make/Model | Price |
|--|-------|--|-------|--|-------|
| Aero Commander 2pc w/s Left | | 172 (S/N50573 to 72884) | | Piper J-3 Cub | |
| 500, 520, 560, 680 Right | | 180,182 (S/N52556 to 53598) | | PA-12 square top (late model) | |
| Aero Commander 100 Darter-Lark | | 182 (S/N 53599 to 55844) | | PA-12 square top (early model) | |
| Voltaire 10 or Voltaire 10A | | 182 (S/N 55845 to 64296) | | PA-15/16/17/22 108 colt bubble | |
| Aeronca Citabria | | 205, 206, U206, P206 | | Apache 23 (S/N 1502 & up) RorL | |
| Aeronca Chief | | 207 | | Pawnee 25 (S/N 656 & up) | |
| Beechcraft Musketeer, Sundowner, Sierra, Sport (.125) | | 210 (S/N 58716 to 58818) | | Cherokee PA-28 (.125) RorL | |
| Musketeer, Sundowner, Sierra, Sport (.187) | | Ercoupe - Fournir (bubble type w/s) | | Cherokee PA-28 (.250) RorL | |
| Bonanza 33/35, 2pc w/s (per side) | | Grumman - AA1, AA1A, AA1B | | Stinson HW-75 2pc | |
| Bonanza 33/35/36/55/58/95 1pc w/s (must check s/n carefully) | | GrummanCanopy-AA1,AA1A,AA1B | | Stinson Voyager108, 108-1/2/3 2pc w/s | |
| Bellanca Cruisemaster models 14-19, 14-19-2, 14-19-3 | | Luscombe 8 series | | Taylorcraft BC-12D, 1946 & up | |
| Viking, Super Viking 14-19-3A,17-30 17-30A, 17-31A, 17-31ATC | | Mooney M20, M20a/b/c/d/e prior to 1965 (2pc w/s) | | Taylorcraft B 1940-41 | |
| Cessna 120-140 (S/N 8800 & up) 140A, 150, 152 | | Mark21, M20c, Super21, M20e, Master M20d, Executive21 M20f, after 1965 | | Yak 52 Windshield (4 sections) *all windows available canopy, side windows, center fixed, aft siding, rear fixed | |
| 152 | | Ranger M20c, Chaparral M20e, Executive M20f, Statesman M20g | | Yak CJ69 (*all windows available canopy, fwd sliding, center fixed, aft siding, rear fixed) | |
| | | Navion A/B/D/E/F Std. or flush type (2pc w/s) | | | |
| | | Navion Rangemaster G&H 2pc w/s | | | |

AP



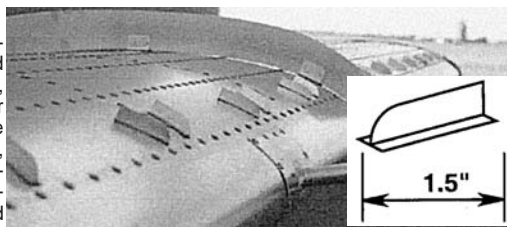
RV WINDSHIELD FAIRING

- * A one-piece fiberglass fairing for Van's Aircraft RV6, RV7, RV9 series aircraft (Slider option)
- * Designed with generous overlap areas to fit any installation
- * Built from 4-layers of 8.8oz cloth and epoxy resin. Fully primed and ready for trimming/installation
- * Save 25+ hours and lots of mess versus the traditional build-up method
- * Large box is 30"x30"x28", but just 8lbs.

P/N 05-03664

MICRO VORTEX GENERATOR KITS

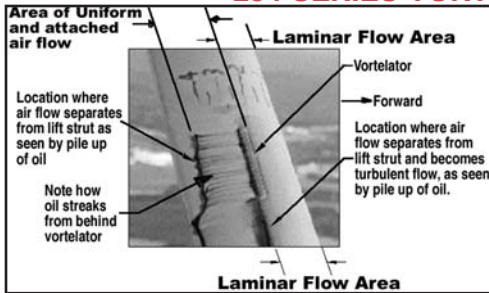
Micro Vortex Generators from Micro Aerodynamics, Inc. are available for a wide range of aircraft and can reduce stall speed, improve aileron response, improve cross wind control, and reduce landing and takeoff roll. The kits consist of vortex generators mounted on the wings, the horizontal stabilizer, and the vertical stabilizer. The generators are manufactured under FAA/PMA from 6063T6 aluminum and are curved to fit the contour of the wing. Included in the kits are installation tools, detailed drawings and instructions, templates for positioning VG's, spares, Loctite Depend adhesive and all the materials needed for the easy one-day installation. When ordering, specify aircraft, serial number, N number, paint name and number (additional \$150 to match), make and model, and any modifications to aircraft. Generic VG kit used on LongEZ, RV-4/6/8, Rans, Murphy Rebel and others. Specify Aircraft make and model.



| Make/Model | Part No. | Price | Make/Model | Part No. | Price |
|--|----------|-------|--|----------|-------|
| CESSNA TWINS 310G thru 310Q | 05-00602 | . | Bonanza 33, 36, A36, A36TC, B36TC | 05-00630 | . |
| 310R & T310R (ZFW & GWI - 180 lbs) | 05-00604 | . | Beechcraft Debonair 33 | 05-04392 | . |
| 320B/C/D/E/F | 05-00605 | . | Hawker Beechcraft G36 Bonanza | 05-04192 | . |
| 310I & 310J | 05-04258 | . | PIPER TWINS | | |
| 336 & 337 | 05-04404 | . | Aztec PA-23-250 | 05-00633 | . |
| 340A, 340, 335 (GWI 300 lbs) | 05-00606 | . | Geronimo PA-23-180 | 05-00634 | . |
| 401, 401A, 401B | 05-00607 | . | Twin Comanche PA-30, PA-39 | 05-00635 | . |
| 402, 402A, 402B | 05-00608 | . | Seneca II (ZFWI - 168 lbs) | 05-04472 | . |
| 402C (ZFW & GWI - 360 lbs) | 05-00609 | . | Seneca I, III, IV, V | 05-04398 | . |
| 411, 411A | 05-00610 | . | Seminole PA-44-180, PA-44-180T | 05-00636 | . |
| 414 | 05-00611 | . | PIPER SINGLE | | |
| 414A, 414AW (ZFW & GWI - 350 lbs) | 05-00613 | . | J-3/PA-11 | 05-00640 | . |
| 421, 421A | 05-00614 | . | PA-12/PA-18 | 05-00639 | . |
| 421B & 421C (GWI - 129 lbs) | 05-00615 | . | PA-15, PA-16, PA-17 | 05-04399 | . |
| CESSNA SINGLES | | | PA-22, PA-20 | 05-00641 | . |
| 120, 140 Series | 05-04393 | . | PA-24 Comanche | 05-04401 | . |
| 150, 152 (all models) | 05-04394 | . | PA-28 All Models | 05-00642 | . |
| 170 "Rag Wing" | 05-04189 | . | PA-32 Cherokee Six, Lance (except T-Tail) | 05-00939 | . |
| 170A, 170B | 05-00616 | . | PA-32 Saratoga | 05-00938 | . |
| 172, 175 Series | 05-00618 | . | MOONEY | | |
| 177, 177A, 177B, 177RG, F177RG | 05-04397 | . | M20, M20A, M20B, M20C, M20D, M20E, M20F, M20G, M20J, M20K, M20L, M20M, M20R, M20S | 05-04402 | . |
| 180, 185 Series | 05-00617 | . | ROCKWELL COMMANDER | | |
| 180, 185 Vertical Tail Upgrade | 05-04396 | . | 112, 112TC, 112TCA, 114, 114A, 114B, 114TC, 115TC | 05-00646 | . |
| 182 Series | 05-04469 | . | LAKE | | |
| 205, 206, 207 Series | 05-00619 | . | LA-4, LA-4A, LA-4P LA-4-200, Model 250 | 05-00647 | . |
| 210 (all models) | 05-04470 | . | AMERICAN CHAMPION | | |
| BEECHCRAFT TWIN | | | Aeronca Champ, Scout Citabria: 7AC, 7ACA, 7BCM, 7CCM, 7DC, 7EC, 7ECA, 7FC, 7GC, 7GCA, 7GCB, 7GCB, 7GCB, 7GCB, 7HC, 7JC, 7KC, 7KCB, 8KCB, 8GCBC | 05-00644 | . |
| Baron 55 A/B/C/D/E | 05-00621 | . | Aeronca Chief: 11AC, S11AC, 11BC, S11BC, 11CC, S11CC | 05-04473 | . |
| Baron 58, 58A | 05-00623 | . | Aeronca Sedan: 15AC, S15AC | 05-04190 | . |
| Hawker Beechcraft G58 Baron | 05-04471 | . | AVIAT Husky A-1, A-1A, A-1B | 05-00643 | . |
| Baron 58TC, 58P | 05-00624 | . | MAULE M-4, M-5, M-6, M-7 MT-7, MX-7, MXT-7, M-8 | 05-00645 | . |
| Baron 55 Upgrade kit (w/older VG system) | 05-00625 | . | STINSON 108, 108-1, 108-2, 108-3, 108-5 | 05-04403 | . |
| Duke 60, A60, B60 | 05-00626 | . | TAYLORCRAFT Taylorcraft Series | 05-01208 | . |
| Twin Bonanza | 05-00627 | . | AGRICULTURAL Air Tractor, Ayres Thrush, Brave, Cessna 188, Dromader, Weatherly | 05-00648 | . |
| Travel Air | 05-00628 | . | KIT PLANES RV, Murphy Rebel, Long EZ | 05-00001 | . |

VORTELEATOR KITS

254 SERIES VORTELEATOR KITS FOR HOMEBUILT AIRCRAFT



Aircraft Development has developed a vortelator kit that can increase your homebuilt aircraft speed by 4 to 7.5 mph. This is accomplished by placing vortelators at certain critical locations which will cause the boundary layer to stay attached to flying surfaces for a greater distance, and to keep the boundary layer thinner. The net result of these two actions is that it reduces both the profile drag and skin friction drag components of the parasite drag. Another way to think of it is that the wake behind the aircraft will be smaller, thus requiring less horsepower to propel the aircraft through the air. Behind the vortelator mini vortices are created as can be seen by the lines of oil that form behind the vortelator. These mini vortices sweep the oil to a point in between the mini vortices, and that's how the oil lines are formed. Whenever one sees these characteristic oil lines forming behind the vortelator one knows the vortelator is working. The vortelator allows the air flow to stay attached to the lift strut for approximately 80% of the lift strut's chord. In the area where there is no vortelator, the air flow separates from the lift strut and becomes turbulent, at approximately 40% of the lift strut's chord, as can be seen from the pile up of oil at the 40% chord position. At the 40% chord position the lift strut is 2.01" thick, and at the 80% chord position the lift strut is 1.18" thick. That means the turbulent wake coming off the lift strut is only 59% as thick with the vortelator attached as without the vortelator attached. That also means with a narrower wake less horsepower is required to propel the lift strut through the air.

| Kit Number | Description or Effect of Installing Vortelator Kit |
|--|--|
| 254-AD | Delineates a procedure for determining where vortelators should be placed on an aircraft, for increased speed, by visualizing surface air flow through simple flight tests at straight and level flight at cruising speed. This kit is ideal for those aircraft models that do not have enough aircraft out in the field for Aircraft Development to economically warrant the time and expense of developing kits for. |
| 254-RV3 254-RV4 254-RV6/6A 254-RV7/7A 254-RV8/8A | The vortelating of the airframes of these RV aircraft will give about a 4 to 5 MPH increase in speed and a decrease in the stalling of about 2 MPH. The vortelating of the propellers of these aircraft is more random in nature. From flight tests the increase in speed can be from 2 to 4 MPH depending on the propeller used. |
| 254-LANCAIR | The vortelating of the airframes of the Lancair 235, 320, 360 aircraft will give about a 4 to 5 MPH increase in speed. The vortelating of propellers of these aircraft is more random in nature. From flight tests the increase in speed can be from 2 to 4 MPH depending on the propeller used. |
| 254-T18 | The vortelating of the airframes of the T-18 aircraft will give about a 4 to 5 MPH increase in speed. The vortelating of propellers of the aircraft is more random in nature. From flight tests the increase in speed can be from 2 to 4 MPH depending on the propeller used. |

| Description | Part No. | Price |
|-----------------------------|----------|-------|
| VORTELEATOR TEST KIT 254-AD | 05-00851 | . |
| VORTELEATOR RV3 KIT 254-RV3 | 05-00852 | . |
| VORTELEATOR RV4 KIT 254-RV4 | 05-00853 | . |
| VORTELEATOR RV6/6A KIT | 05-00854 | . |

| Description | Part No. | Price |
|---------------------------------|----------|-------|
| VORTELEATOR RV7/7A KIT | 05-00855 | . |
| VORTELEATOR RV8/8A KIT | 05-00856 | . |
| VORTELEATOR KIT FOR LANCAIR | 05-00857 | . |
| VORTELEATOR KIT FOR T18 254-T18 | 05-00858 | . |

246-100 CESSNA VORTELEATOR KIT - Can increase Cessna speeds by up to 6 MPH. This kit is FAA approved for the following Cessna aircraft: 140A, All models of 150, All models of A150, All models of 152, 170 A&B, All models of 172 (USAF T-41A), P172D, R172E (USAF T-41B) and (USAF T-41C and D), R172F (USAF T-41D), R172G (USAF T-41 C and D), R172H (USAF T-41D), R172J, R172K known as 172XP, 172RG, All models of 175, All models of 180, All models of 182, R182, T182, TR182, All models of 185, A185E, A185F, All models of 205, All models of 206, All models of P206, All models of U206, All models of TP206, All models of TU206, All models of 305 known as L-19.P/N 08-00731



FLY TO USE LESS FUEL - a booklet which explains the working speeds of the aircraft such as, most flight time per gallon of fuel, most miles per gallon of fuel, steepest climb etc. It also explains these working speeds of the aircraft in simple to understand graphics, no complicated mathematical formulas used. There is no need to do a time consuming flight test program to determine the working speeds of your aircraft. This booklet gives simple multiplication factors, based on cruising speed, to determine the working speeds for your homebuilt aircraft. Fly To Use Less Fuel booklet.....P/N 08-00732

PROPELLER VORTELEATOR KITS FOR ULTRALIGHT, HOMEBUILT AND CERTIFIED AIRCRAFT

Fly Faster and Use Less Gas - Capable of increasing your aircraft speed by 2 to 4 mph and your RPM by 20 to 50 RPM. That's if you have a fixed pitch propeller. If you have a constant speed propeller, for a given RPM and manifold pressure the propeller will be at a slightly larger pitch giving you more speed. This is accomplished by placing vortelators at certain critical locations on the propeller's most inefficient highest air drag areas. The vortelators will cause the boundary layer to stay attached to the propeller surface for a greater distance, and to keep the boundary layer thinner. The net result of these two actions is that it reduces both the profile drag and skin friction drag components of the parasite drag. The vortelator allows the air flow to stay attached to the lift strut for approximately 80% of the lift strut's chord. In the area where there is no vortelator, the air flow separates from the lift strut and becomes turbulent, at approximately 40% of the lift strut's chord, as can be seen from the pile up of oil at the 40% chord position. At the 40% chord position the lift strut is 2.01" thick, and at the 80% chord position the lift strut is 1.18" thick. That means the turbulent wake coming off the lift strut is only 59% as thick with the vortelator attached as without the vortelator attached.

259-100 Propeller Vortelator Kit for Ultralight Aircraft - The propeller vortelator kit will increase the RPM's by 20 to 50, increase airspeed by 2 to 4 MPH and also works on constant speed propellers. It is compatible with and will restore prop guard's efficiency loss.
P/N 05-01465

259-200 Propeller Vortelator Kit for Homebuilt Aircraft - The propeller vortelator kit will increase the RPM's by 20 to 50, increase airspeed by 2 to 4 MPH and also works on constant speed propellers. It is compatible with and will restore prop guard's efficiency loss.
P/N 05-01466

260-100 Propeller Vortelator Kit for Certified Aircraft - The propeller vortelator kit will increase the RPM's by 20 to 50, increase airspeed by 2 to 4 MPH and also works on constant speed props. It is compatible and will restore prop guard's efficiency loss. The FAA has given permission for an A&P mechanic to install this kit and does not require the installation to be performed by an approved propeller repair station.
P/N 05-01467

VORTEX GENERATOR STOL KIT

There are many advantages to this vortex generator STOL kit for homebuilt aircraft: 1) increased lift, 2) slower stall speed by 4 to 6 MPH, 3) shorter landing distances, 4) shorter takeoff distances, 5) higher angle of climb, 6) tighter turns, 7) gentler stalls, 8) better aileron authority at slow speed, 9) aircraft is more controllable at slow speed, 10) in general increased total performance and safety. The kit comes with clearly written installations instructions that allow you to determine where on the aircraft, especially on the wings, to install the vortex generators based on empirical data to get the benefits described above.

| Kit No. | Description of Vortex Generator Kit | No. of VG's | Part No. | Price |
|---------|---|-------------|----------|-------|
| 261-AD1 | Deluxe Generic Vortex Generator STOL Kit for Homebuilt Aircraft | 150 | 05-01776 | . |
| 261-AD2 | Generic Vortex Generator STOL Kit for Homebuilt Aircraft | 65 | 05-01780 | . |
| 261-RV1 | Vortex Generator STOL Kit for the RV-3 Aircraft | 65 | 05-01777 | . |
| 261-RV1 | Vortex Generator STOL Kit for the RV-4 Aircraft | | | |
| 261-RV1 | Vortex Generator STOL Kit for the RV-6/6A Aircraft | | | |
| 261-RV1 | Vortex Generator STOL Kit for the RV-7/7A Aircraft | | | |
| 261-RV1 | Vortex Generator STOL Kit for the RV-8/8A Aircraft | | | |

VORTEX GENERATORS – AIR VENTS



HALL BROTHERS VORTEX GENERATORS FOR HOMEBUILTS

These Vortex Generators can be temporarily attached to the wing with tape for testing without harming the wing surface and then moved or attached permanently. This temporary attachment capability allows the pilot to prove out their effectiveness before permanent attachment. The design also gives a generous surface area for bonding. The Vortex Generators are made from .025" 6061-T6 aluminum for maximum durability. Hall Brothers Vortex Generators are not just used for lowering the stall speed. The stall characteristics are normally improved as well as aileron response. Some pilots have reported an increase in the rate of climb of their airplane. Many pilots say that the overall "feel" and handling of their airplane has improved throughout its speed range. The Hall Brothers Vortex Generator Kit includes enough Vortex Generators for a typical homebuilt wing (46 pairs) and stabilizer (16 pairs), tape for temporary attachment, adhesive for permanent attachment and instructions.

P/N 05-01480



VORTEX GENERATORS FOR CESSNA AIRCRAFT

Manufactured under our FAA PMA from aircraft grade aluminum and are anodized to a mil-spec, ready to accept paint before installation. Included in each kit are installation tools, computer cut templates, detailed illustrated drawings and instructions, and Loctite Depend™ Adhesive for installing the vortex generators on your airplane.

| Description | Part No. | Price |
|-------------------|----------|-------|
| Cessna 310L/310J | 05-04258 | . |
| Cessna 402B | 05-04259 | . |
| Cessna 421C | 05-04261 | . |
| Cessna (T)210 SER | 05-04264 | . |
| Cessna P210N | 05-04265 | . |
| Cessna P210R | 05-04266 | . |

STOLSPPEED VORTEX GENERATORS



Stolspeed VGs are streamlined for less drag and better appearance than other VGs. Stolspeed VGs have no sharp points and are flexible, so it's easier to wash or cover the wings. The special 3M adhesive is removable without damaging aircraft paint. Stolspeed VGs have a very slim rounded fin to give them good flexibility, and a rounded, tapered base that 'flows' into the wing surface. In clear material they're almost invisible.

80 (Enough for the tail)..... P/N 05-04458

120 (Enough for the main wing plus spares) .. P/N 05-04457



ALUMINUM EYEBALL AIR VENTS

Aluminum airline style "eyeball" air vent swivels to direct air where needed. Knurled collar of outlet rotates to control air volume. Mounts in 1-7/8" dia. hole.

P/N 05-04065.....



EYEBALL AIR VENT ADAPTER

The extension on the back of these aluminum eyeball air vents is very narrow and allows little room to attach SCAT ducting. This adapter enables the user to attach 2" diameter SCAT ducting to the back of the vent using a stainless steel clamp.

P/N 05-04067.....



EYEBALL SWIVEL VENT

This high quality, economical swivel air vent is made from 2024T351 aluminum and is available anodized black or grey. Diameter of the flange is 2.75" and the vent is designed to attach with a standard 2" air duct flange. The vent hole of this eyeball swivel vent is 7/8". The knurled collar on the vent swivels 60° to adjust air volume and direct air flow as desired. The vent features 4 mounting holes (1/8" dia.) which are spaced 2-3/8" apart or a mounting plate with a thickness of .71". Made in USA Eyeball Swivel Vent - Black..... P/N 05-00779

Eyeball Swivel Vent - Grey..... P/N 05-00787



PLASTIC EYEBALL AIR VENTS

These ball and socket air vents are injection molded T grade ABS. The vent orifice is 1" dia., and the ball swivels 45°. The mounting flange is 2-1/8" square, and the distance between mounting hold centers is 1-11/16". Mounts in 1.75" dia. hole & uses 1-3/4" ducting. Wt: 1.25 oz. ea.

Gray..... P/N 05-04082

White.... P/N 13-01943

Black..... P/N 05-04079

Beige.... P/N 05-04081



VENTUBE FOR CESSNAS

The Ventube is a plastic unit that consists of an exterior tube and a lockable interior tube with a cap. Air flow control is accomplished by extending or retracting the interior tube. Ventube enhances pilot and passenger comfort, allows reliable closure of the air vent, controls vent direction and flow, and reduces air vent noise and leakage. FAA approved for Cessna 120, 140, 150, 152, 170, 172, 175, 180, 182, 185, 190, 195, 205, 206, 207, 210-210F, and 305. Detailed instructions, STC, FAA Form 337, etc. are enclosed with each pair.

P/N 05-04091..... /pr.



AIRFLOW ENHANCEMENT KIT

Improves the cabin airflow in General Aviation aircraft, specifically Cessnas. Combined with Ventubes they enhance the pilot and passengers comfort (cooling & heating), allow reliable closure of the inlet air vents, control cabin air direction, increase cabin air flow, and reduce inlet air noise and leakage. The kit consists of two cabin exit vents, CEV, to allow the cabin air to exit into the aft fuselage and the fuselage exit vent, FEV in the modified inspection plate, to allow the cabin air to exit the fuselage of the aircraft.

P/N 05-04080

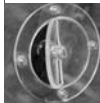


THE COMPLETE AIRFLOW KIT

The Kit includes:

- Ventubes™ (pair) - controls air flow into the cabin.
- Cabin Exit Vents - allows air to exit to fuselage.
- Fuselage Exit Vent - allows air to exit the aircraft.

P/N 13-03577



VISTA-VENTS

Knob adjustment permits complete control of cabin air. Mounts at four points in 2-1/2" dia. hole.

P/N 13-03500



CABIN AIR VENTILATOR

Aluminum 90° elbow type. Knurled collar rotates to control air volume. Mounts to a 2 1/2 in. Dia flange. For 11/4 Id scat ducting. Also good for cabin heat vents.

P/N 05-04075



"WHISPERFLO" VENTILATORS

Large molded plastic vent with 40° swivel. Thumb operated closure controls degree of opening. Mounts in 2-1/2" dia. hole. Large orifice (1-3/4") provides maximum cooling. Mounting in floor of aircraft assures full cabin ventilation.

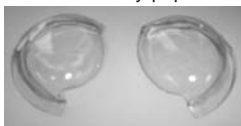
Use with CAT-11 ducting. Black..... P/N 05-04073

Ivory..... P/N 05-04071



ULTIMATE VENTILATOR

The Ultimate Ventilator is machined from aluminum block and comes with holes tapped for 4-40 screws. 1.75" disk articulates out into airstream and does not leak when closed. Very popular with T-18 & RV builders. P/N 05-04090



SNAP VENTS

Adjustable plastic ventilators for use as fresh air intakes or air exhausts. Easily installed in plastic windshield or metal cowling. Two sizes:

MODEL A-2-100 Mounts in a 2" dia. opening. Can be turned to provide any degree of ventilation. The "Off" position is with the opening downward. P/N 05-01178

/pr.

MODEL CC3251 Mounts in 31/4" dia. opening. Rotates to provide any degree of ventilation. Retracts to a closed position nearly flush with the mounting surface. P/N 05-01179

/pr.

MODEL F325A Large tabs on lower flange and tapered profile make this vent ideal for higher airspeeds. Mounts in 3-1/4" opening in plastic windshield or metal cowling. P/N 05-04088

/pr.

MODEL F318 Tapered in profile in back provides a more direct flow of air. Mounted in 3-3/16" opening in plastic windshields or metal cowling. P/N 05-04089

/pr.

CESSNA 210 FRESH AIR VENT SYSTEM

This fresh air vent system replaces the forward cabin vent. It features durable Wemac air vents which deliver full/partial closure, directional control, and positive shut-off. Focused air control improves cabin comfort. All metal construction. Completely replaces the old style, plastic overhead fresh air vents in most Cessna 210 aircraft. Includes the forward center, and aft systems, or purchase the systems separately. STC approved.

Full system..... P/N 05-04092

Pilot & Co-Pilot..... P/N 05-04083

Center Vents (total of 2 units)..... P/N 05-04085

Rear Vents (total of 2 units)..... P/N 05-04087

NACA INLETS - AIR VENTS

DEFROSTER/AIR VENT



This one piece hard plastic air vent is totally self contained. A standard 1-1/2" scat duct easily slides onto the angled attach point and a simple squeeze of your fingers and it is locked on securely! It easily attaches to any glare shield or side panel totally hidden with 632 machine screws or tap screws if you choose. These vents pass FAR 23.853 flammability testing. They can be easily painted or better yet dyed with ritz dye to the color of your choice. An STC is pending for installation in Grumman AA5 Series Aircraft. A special locking feature allows variable adjustment of air flow with a simple sliding of the bar. No need to design an attaching air box for this unit - attach to the panel - slide on the hose -squeeze the attach hose clamp - and you are done! Furnished as a left hand and right hand unit set. P/N 05-02450.....

LARGE ROUND FLANGE EYEBALL VENT



This round flange version of our large square-flange eyeball vent. Fits in a 2-3/4" hole, and has a 3" outside flange diameter.
w/ 2" Scat Adptr., Aluminum..... P/N 05-04064
w/ 2" Scat Adptr., Black..... P/N 05-04066
w/ Plenum Nut, Aluminum..... P/N 05-04414
w/ Plenum Nut, Black..... P/N 05-04415

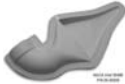
STEINAIR AV125B EYEBALL VENT



These are the highest quality vents that money can buy. For example, the Black Vents are 100% anodized aluminum. These black vents don't require a "Plastic Flange" because of metal to metal contact. These high quality vents have a nylon/delrin

bushing encapsulated between the eyeball and the flange to protect the aluminum! With these vents you simply cut a hole, install the vent and tighten the plenum or retaining nut behind it and hook up the tubing! The vents include everything needed for install. On the small vents you can just directly attach a 2" scat tube to the vent - and on the large vents they have 2" plenums. These will come with a "BAC" part number on them, but that's because they are normally for the cockpits of fighters.

| Description | PN | Price |
|--|----------|-------|
| 1 1/4" Aluminum Eyeball Vent - (Air outlet size). Anodized BLACK. OD is 2" and allows for direct connection of a 2" scat tube. AV125B | 05-04061 | . |
| 1 1/4" Aluminum Eyeball Vent - (Air outlet size). Anodized CLEAR. OD is 2" and allows for direct connection of a 2" scat tube. AV125C | 05-04063 | . |
| 1 3/4" Aluminum Eyeball Vent - (Air outlet size). Anodized BLACK. OD is 2 3/4" (hole size required for mounting). INCLUDES 2" Plenum Cup. AV1625B | 05-04084 | . |
| 1 3/4" Aluminum Eyeball Vent - (Air outlet size). Anodized CLEAR. OD is 2 3/4" (hole size required for mounting). INCLUDES 2" Plenum Cup. AV1625C | 05-04086 | . |



NACA INLETS

| #1 Part No. | #2 Model No. | #3 0° Axes or air flow | #4 90° Axes total w length | #5 Outlet Size Openings | #6 Price |
|-------------|--------------|------------------------|----------------------------|-------------------------|----------|
| 05-00859 | 904 MI | 11.75" | 8.25" | 4" | . |
| 05-00862 | 001 HE | 7.75" | 4" | 2.5" | . |
| 05-00863 | 903 DA-A | 7.5" | 3.125" | 2.5" | . |
| 05-00864 | 903 DA-B | 7.5" | 4" | 2.5" | . |
| 05-00865 | 007 JO | 5.75" | 2.75" | 2" | . |
| 05-00866 | 902 MA-A | 5.5" | 2.5" | 2" | . |
| 05-00867 | 902 MA-B | 6.5" | 3.5" | 2.5" | . |
| 05-02485 | 009 MU-B | 3" | 2.75" | N/A | . |
| 05-04249 | 009 MU-A | 6.5" | 3.5" | N/A | . |

Column #1 - Indicates our part number. Order using our part number.

Column #2 - Indicates Model No. and whether the outlet is at 0° or 90° to inlet, e.g. 904 MI is at 90° to the inlet, while 007 JO is at 0°

Column #3 - Length of opening along airflow axes.

Column #4 - Maximum width of aft opening at 90° to airflow.

Column #5 - The size of the outlet for the purpose of hose or duct connecting information.

Column #6 - Price of the NACA inlet.

COWLING/HOOD SCOOPS INLET/EXIT SCOOPS



BLI-16.9A..... 05-04306..... BLI-16.9B..... 05-04308.....



BLI-24.1A 05-04305 BLI-24.1B 05-04304.....

AVEOAIR™ - BALL VENTS



AveoAir™ Ball Vents are machined from 2024 aluminum alloy, and these lightweight vents are anodized in your choice of 5 color finishes. Installation is simple with the 2-piece design, no screws are required as they are simple thread together to hold securely. ONLY AVEO VENTS come with a choice of 3 rear standard SCAT tube coupler diameters so you can optimize your air flow. Choose from 1.5", 1.75" or 2.0" diameters (38 mm, 44 mm, 50 mm).

| 1.5 Inch | | 1.75 Inch | | 2.0 Inch | |
|----------|----------|-----------|----------|----------|----------|
| Black | 05-04198 | Black | 05-04459 | Black | 05-04464 |
| Silver | 05-04199 | Silver | 05-04460 | Silver | 05-04465 |
| Green | 05-04201 | Green | 05-04461 | Green | 05-04466 |
| Blue | 05-04202 | Blue | 05-04462 | Blue | 05-04467 |
| Gold | 05-04203 | Gold | 05-04463 | Gold | 05-04468 |

ROUND ALUMINUM EYEBALL AIR VENT (SMALL)



Small round-flange eyeball vent. Made from aircraft-grade 6061-T6 aluminum and hard anodized, it weighs just 3 oz. and mounts in a 2" round hole. Outside flange diameter is 2-1/4", and has 25 degrees of freedom from the vent centerline. The vent is secured with a mounting ring that will accept a 1-1/2" or 2" scat hose OR a plenum mounting nut. This vent has an opening of 1.2" which is larger than competitive vents that mount in the same size hole.

w/ 1-1/2" Scat Adptr., Aluminum..... P/N 05-04410
w/ 1-1/2" Scat Adptr., Black..... P/N 05-04411
w/ 2" Scat Adptr., Aluminum..... P/N 05-01903
w/ 2" Scat Adptr., Black..... P/N 05-01904
w/ Plenum Nut, Aluminum..... P/N 05-04412
w/ Plenum Nut, Black..... P/N 05-04413

3275 LARGE SQUARE EYEBALL AIR VENTS



Large square-flange eyeball vent. Made from aircraft-grade 6061-T6 aluminum and hard anodized, it weighs just 5 oz. and mounts in a 2-3/4" hole. The mounting flange is 3" square with a 2-1/2" mounting hole pattern, and has 25 degrees of freedom from the vent centerline (50% more than in our first generation vents.) This is a direct replacement for the "whisperflo" black plastic vents. Flows 30% more air and eliminates 99% of the leakage associated with the plastic vents when closed. Aluminum... P/N 05-04068 Black... P/N 05-04070

22167 SMALL SQUARE FLANGED EYEBALL VENT



Small square-flange eyeball vent. Made from aircraft-grade 6061-T6 aluminum and hard anodized, it weighs just 3 oz. Mounting flange is 2.20" square, with a hole mounting pattern of 1.70". Vent adjustment is 25 degrees of freedom from the vent centerline, and has an opening of 1.2" which is much larger than vents typical of this size. Aluminum..... P/N 05-01905 Black..... P/N 05-01906

DEFROST VENT ASSEMBLY



Defrost vents designed to fit in AA series Grumman airplanes and can also be used in Experimentals. They will fit the original hole pattern on the Grummans, but the area where the scat tube is attached has been changed to a full round 1 1/2 dia. These parts have passed FAA burn tests. A sliding piece can be adjusted to vary the amount of air being used to defrost. The mounting area is 2 1/4 x 3 3/4, with six 6-32 attaching screws, not provided. Comes as a pair. P/N 05-04062

ACTIVENT ACV-100 COCKPIT VENTILATOR



The ACV-100 Solar Powered Cockpit ventilator installs in place of the normal can type vent while the aircraft is parked. The system consist of a ballbearing fan assembly and a weatherized solar panel. An 8ft cord allows use with the panel on the glare shield or outside the aircraft when an outsidecover is used. The system provides a minimum of 7CFM airflow through the cabin per vent. The airflow reduces the heat caused by direct as well as radiant heating increasing the life of avionics and exteriors. The fan is a ball bearing design with a 10,000 hr design life. The fan mount & tube are made from aircraft grade aluminum. The Solar Panel is injection molded acrylic with an integral lens system. Standard..... P/N 05-04072 For Cessnas with ventubes..... P/N 05-04074

KOOL SCOOP VENTS

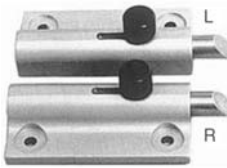


Very popular with Piper owners who need quick, high volume ventilation during ground operations on hot days. Kool Scoop is very easy to mount; simply peel off the adhesive backing sealer and stick it in place on the side window. It will fit any side window vent that does not have a thick frame. Made of top quality plexiglass. Really "scoops" the air from the outside to keep the pilot and passengers comfortable. Window frame not included. Left hand (Pilot Side)..... P/N 05-04076 Right hand (Co-Pilot Side)..... P/N 05-04078

AP

DOOR LATCHES-CANOPY LOCK-FLAP ACTUATOR

UNIVERSAL SPRING LOADED LATCHES



These universal spring loaded latches are designed for aircraft canopies, cockpit doors, and baggage doors. They are available in right hand and left hand models with different striker angle lock pins on the two models. These latches work great on a wide variety of experimental aircraft.

Left hand latch (Lock Pin)

P/N 05-04520.....

Right hand latch (Lock Pin)

P/N 05-04521.....

Also available in retracted bolt lock type latch with blunt striker (left hand and right hand).

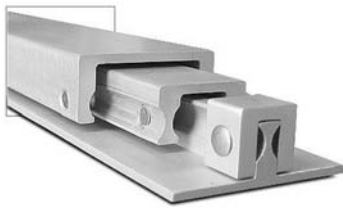
Left hand latch (Retracted Bolt Lock)

P/N 05-00895.....

Right hand latch (Retracted Bolt Lock)

P/N 05-00896.....

SLIDING CANOPY RAILS

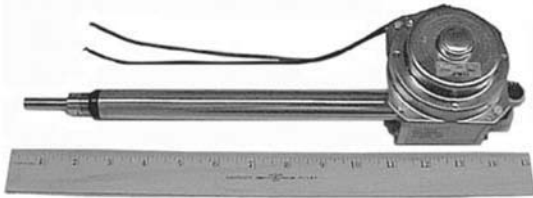


2 heavy-duty channels of 2014T6 anodized aluminum provide smooth sliding tracks for canopy installations. Length 23" fully retracted, 45" fully extended. 22" travel. Wt:3.5 lbs./pair. Used on Pazmany 1 & 2, Skybolts & others. Instructions for installing these rails in the Pazmany PL-2 are available for \$50 from Pazmany Aircraft Corp.,

P.O. Box 80051, San Diego, CA 92138. These instructions are a useful reference for installing channels in any homebuilt aircraft.

P/N 03-49300/pr.

FLAP LINEAR ACTUATOR AS USED ON LANCAIR ES, LANCAIR 300 & 360



The **FL1 (FL1-24) ACTUATOR** offers a unique standard of performance, durability and reliability. The compact design incorporates wellproven part, like the high efficiency ball screw, a sturdy gear box assembly and fitted with compact high quality DC motor. DC motors are available in both 12 & 24 volt. All to give the best performance with unsurpassed operational life. The actuator is self-locking within the dynamic load range. The actuator is manufactured with the capacity of 1500 N maximum dynamic load and 2200 N is static. The stroke is 150 mm and with speed of 10-15 mm per second.

12 volt actuator..... P/N 05-66223

24 volt actuator..... P/N 05-66224

The **FL2 LIMIT SWITCH and CONTROLLING UNIT** makes it possible to set the actuator for the desired stroke length. It also protects the actuator from running against the mechanical end stops, thereby avoiding damage. It is durable and can be used in most environments. It includes the aluminum profile tube, in which is mounted the protection tube of the actuator. Two



limit switch units are attached to the profile tube and can be adjusted to any position. The magnet rod is attached to the end of the adjustment tube and runs in a groove in the profile tube. When the magnet, which is attached to the free end of the rod, approaches the switch unit, the latter is activated. The switches are connected to the control unit, from which the relays disconnect the power to the motor. Dimensions: Overall Length: 210 mm, Extended 360 mm. Width: 86 mm, Motor Diameter: 140mm.

FL1A CLEVIS ATTACHMENT - Galvanized clevis head and journal fitting with a quick coupling. It allows simple and rapid attachment of actuator

P/N 05-66226

EXPERIMENTAL AIRCRAFT DOOR LATCH



3D view Opening from Exterior



Interior View Open Position

This door latch was originally designed for a gull wing door with linkage rods extending both forward and aft, however it can be adapted to virtually any style door with appropriately designed linkage rods. The linkage rods are not included.

Features:

- Identically keyed locks for set
- Armrest flush mount interior handle
- Spring loaded, flush mount exterior handle
- Spring ball detent for positive open/ closed stop action

Specifications:

- Made from 2024-T3 aluminum
- Each latch weighs approx. 10 ounces
- Dimensions for applicability pictured below
- Driver travel approx. 1.25" forward and aft

For linkage rods the following aluminum is recommended: 1/4" x 1/2"

2024T3 P/N 03-00104

Left Hand Door Latch P/N 05-01415

Right Hand Door Latch P/N 05-01416

Set of Left/Right Latches P/N 05-01420

RV SLIDING CANOPY LOCK



Lock your RV with confidence. Finally, a lock for your sliding canopy that installs in minutes. Tools required are one 1/4" drill bit and a drill. All you have to do is drill a hole, deburr and start using your lock. No more worries about having your avionics or your personables in someone elses aircraft.

P/N 05-01414

THE GAS SPRING



The gas spring is a self-contained counterbalance unit consisting of a piston and piston rod in a hermetically closed cylinder. The cylinder is factory-loaded with an inert gas at a given pressure. The outward force generated is continuous and linear at 45 lbs. Ideal for a canopy closure on

homebuilts, as designed for George Meads Adventure. Stroke 3.15".

P/N 05-01177

DOOR STEWARD



The **DOOR STEWARD™** is an STC & FAA-PMA approved modification that greatly improves and replaces easily broken, malfunctioning mechanical type door stop or restraints

that become ineffectual with repeated usage.

Pilots enjoy the fact that the **DOOR STEWARD™** gently opens and firmly holds the door open. The **DOOR STEWARD™** consist of modern inert gas spring - with necessary brackets. It is easy to install with virtually no maintenance. Developed out of frustration and observation of pilots and passengers who were repeatedly nagged by door whips in windy situation.

- The **DOOR STEWARD™** can be used with or without most existing door restraints.
- With the **DOOR STEWARD™** the door will stay open when needed.
- No more flopping open and closed in gust of wind or sudden door movement caused by prop wash of aircraft taxiing nearby.
- The cost is usually much less that **REPAIRING** the OEM Door Restraints.
- Great for float equipped aircraft when water taxiing.
- FAA approved for Single Engine Cessnas from 170 series through 210 series except Cessna 177 and P210.

| Description | Part No. | Price |
|---|----------|-------|
| Door Steward Left & Right Hand Kit (Cessna 177) | 05-00922 | . |
| Door Steward Beechcraft | 05-03574 | . |
| Door Steward Cessna 206 | 05-03575 | . |

AP

FIBERGLASS PARTS – COWLING KITS

RAVEN FIBERGLASS PARTS

Raven Fiberglass parts are made to very high standards with reinforcing where necessary.

UPPER WING CABANE FAIRING FOR PITTS S-1



Will fit S-1 and any aircraft with similar symmetrical wing.
P/N 05-00908.....

WHEEL FAIRINGS



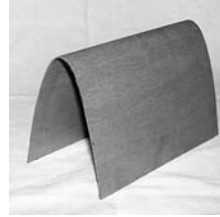
Fit a spring type gear and only come with mounting brackets and inside covers (doors). They also feature plates behind the wheel so they can't fill up with debris.
P/N 05-00912

SINGLE PIECE PIPER TYPE NOSE BOWL

With reinforcing rib around the perimeter has a starter bump as well. Used on Pitts and similar aircraft.

P/N 05-00909.....

WOODEN LEADING EDGES



Can be used on Pitts, Eagle, Skybolt etc. Preformed leading edge to replace metal leading edge. Adds strength to stock or modified wings. Set comes with all 5 pcs. to glue directly to the wings.

For S-1 P/N 05-00918

For Experimental S-2, Eagle, Skybolt
P/N 05-00919

TWO PIECE PIPER TYPE NOSE BOWL



With reinforcing rib around the perimeter, meant for 14" spinner and has starter bump as well. Used on Pitts and similar aircraft.

P/N 05-00911

SPADES

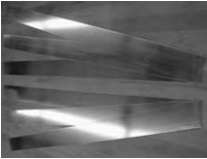


Spades used on aerobatic aircraft like Pitts Special. Comes with arm and plate
P/N 05-00917

AP

2024T3 MOUNTING STRIPS

Mounting Strips are aluminum firewall support strips used on RV kits to mount the receptacles.



| Description | Alclad Strip | Part No. | Price |
|-----------------------------------|--------------|----------|-------|
| 2024T3 Mounting Strip 2.5x36 .050 | 2 | 04-01993 | . |
| 2024T3 Mounting Strip 2.5x36 .050 | 4 | 04-01992 | . |
| 2024T3 Mounting Strip 2.5x36 .050 | 6 | 04-01991 | . |

VANS RV COWLING MOUNT KITS



Vans RV 4,6,7,8,9, 10's, Lancairs, and other kit planes. The Skybolt design adds functionality and appearance to any cowling. The "Hinge" is the perfect design for a pop-rivet aircraft. A Skybolt Cloc™ Kit is the perfect design for a true investment in pride.

SkyBolt RV Tool Kit - Needed for installation..... P/N 04-01990

| PART NUMBER | AIRCRAFT | DESCRIPTION | PRICE |
|-------------|-------------------------------|-------------------------------|-------|
| 04-00399 | Vans RV4 - Complete Kit | Collared Slotted 33 Fasteners | . |
| 04-00403 | Vans RV4 - Complete Kit | Phillips | . |
| 04-00405 | Vans RV4 - Firewall Kit | Collared Slotted 15 Fasteners | . |
| 04-00406 | Vans RV4 - Firewall Kit | Phillips | . |
| 04-00407 | Vans RV4 - Side Kit | Collared Slotted 18 Fasteners | . |
| 04-00408 | Vans RV4 - Side Kit | Phillips | . |
| 04-00409 | Vans RV8 - Complete Kit | Collared Slotted 46 Fasteners | . |
| 04-00410 | Vans RV8 - Complete Kit | Phillips | . |
| 04-00411 | Vans RV8 - Firewall Kit | Collared Slotted 26 Fasteners | . |
| 04-00412 | Vans RV8 - Firewall Kit | Phillips | . |
| 04-00413 | Vans RV8 - Side Kit | Collared Slotted 20 Fasteners | . |
| 04-00415 | Vans RV8 - Side Kit | Phillips | . |
| 04-00417 | Vans RV6,7,910 - Complete Kit | Collard Slotted 48 Fasteners | . |
| 04-00418 | Vans RV6,7,910 - Complete Kit | Phillips | . |
| 04-00419 | Vans RV6,7,910 - Firewall Kit | Collard Slotted 26 Fasteners | . |
| 04-00420 | Vans RV6,7,910 - Firewall Kit | Phillips | . |
| 04-00421 | Vans RV6,7,910 - Side Kit | Collard Slotted 20 Fasteners | . |
| 04-00422 | Vans RV6,7,910 - Side Kit | Phillips | . |
| 04-00423 | Lancair - Complete Kit | Collared Slotted 57 Fasteners | . |
| 04-00424 | Lancair - Complete Kit | Phillips | . |
| 04-00425 | Lancair - Firewall Kit | Collared Slotted 37 Fasteners | . |
| 04-00427 | Lancair - Firewall Kit | Phillips | . |
| 04-00429 | Lancair - Side Kit | Collared Slotted 20 Fasteners | . |
| 04-00430 | Lancair - Side Kit | Phillips | . |

FIBERGLASS COWLINGS

All parts are aircraft quality, hand layed for uniform thickness and light weight. Items are finished with grey primer gel coat which minimizes sanding and eliminates the need for primer paint.

Note: Light sanding is required to remove mold release wax residue from surface of all fiberglass items prior to painting.



MC-1A NOSE COWL

Styled after the Piper Comanche, this cowl can be used on just about any homebuilt powered by the Lycoming engine. It is made in two parts, allowing the easy removal of the cowl without having to remove the prop. Used on the following airplanes: Starduster I and II, Playboy, EAA Bipe, Jodel D-11, Tailwind, Tempete & the Skybolt. Measures 35" wide by 21" high. Will accommodate a spinner approx. 12" in dia.

P/N 05-01186

MC-1B NOSE COWL

Similar in shape and dimensions as the MC-1A cowl except, it is manufactured as a one piece unit for those who prefer a cleaner front end. The MC-1B is a few inches larger than the MC-1A.

P/N 05-01181

MC-2 NOSE COWL

This design can be used with most any Continental or Lycoming engine. Used on the original Smith Miniplane but has been installed on the Pitts, EAA Bipe, Playboy, Flybaby & Baby Great Lakes. Measures 35" wide by 19.5" high. Face of center opening 8-1/2" O.D.

P/N 05-01182

MC-3A NOSE COWL

Suitable for just about any Lycoming powered aircraft, this cowl comes equipped with a bump that conceals the starter motor. It is the standard Pitts Special cowl but has been installed on these aircraft: Mong, Miniplane, Playboy, Emeraude, Playmate, Baby Ace, Junior Ace, EAA Bipe, Baby Great Lakes, Skyhopper and the Falconar F-11 & 12 series. Measures 35-1/2" wide and 22-1/2" high. Center opening 8-1/2" dia.

P/N 05-01183

MC-3B NOSE COWL

Same shape and size as used on the Piper PA-14. Can be used on the same aircraft as listed for the MC-3A design. For builders not wishing to use an electrical system and is seen on most Pitts Specials built for competitive aerobatics. 35" wide x 21" high. Center opening 9-1/4" dia.

P/N 05-01184

MC-10 NOSE COWL

For installation on Tailwind or Cougar. Used with 4" prop extension. Shape rounds out the boxy appearance of the standard design. Size: 35" w x 22.5" h. Has been installed on Starduster I and various Lycoming powered homebuilts. Face of center opening 11-3/4" O.D.

P/N 05-01185

MC-3C NOSE COWL

Identical to the MC-3B, but, has an opening for an oil cooler. Measures 35" wide by 21" high.

P/N 05-01186

MC-4 NOSE COWL

This nose cowl was designed for the T-18 pressure cowl system. A 4-inch prop extension is required and it is generally used with the MC-5 Bottom Cowl. Measures 36" wide by 20" high. Face of center opening 12-1/2" O.D.

P/N 05-00551

MC-7 NOSE COWL

Originally made for the Thorp T-18, this cowl has been used on several other types. The starter ring is enclosed when used with the Lycoming. Makes a nice front end on the CA-61 & CA-65. Measures 35"W by 19.5" high. Face of center opening 13-3/8" O.D.

P/N 05-01176

FLUSH LATCH

The Hartwell H-5000-2 is a unique spring-loaded, trigger action latch for cowl and access doors. Made of corrosion resistant steel. Rivet or spot weld to structure.

P/N 05-01881

Surplus H-5100-2 Latches.

P/N 05-01113



DZUS COWL LATCHES

These Dzus "over the center" type latches are used extensively on cowl doors and other applications on aircraft such as Cessna, Piper, Grumman, and many homebuilts. Available in 2 styles as shown.

MODEL #1



This latch provides 700 lbs. ultimate strength and 100 lbs. working strength. Pull up ability is 0.6 inch. Mounting holes will accept .156 in. diameter rivets or #6 round head screws. Material is steel, zinc plated with yellow chrome finish. Order strikes separately.

| Part No. | Description Dimensions (closed) | Price Ea. |
|----------|------------------------------------|-----------|
| 05-01187 | Model 1 latch | . |
| 05-01188 | Strike | . |
| 05-01189 | Strike | . |

MODEL #2



This latch provides 220 lbs. ultimate strength and 45 lbs. working strength. Pull up ability is .2 inch. Mounting holes will accept .156 in. diameter rivets or #6 round head screws. Material is steel, zinc plated with yellow chrome finish. Order strikes separately.

| Part No. | Description Dimensions (closed) | Price Ea. |
|----------|------------------------------------|-----------|
| 05-01190 | Model 2 latch | . |
| 05-04183 | Strike | . |
| 05-04184 | Strike | . |

BONANZA NOSE GEAR BRACE



These PMA approved replacements for the Nose Gear Brace are used in early Bonanzas. Most of these aircraft have severely corroded nose gear braces as a result of lightening holes that allow moisture to enter and collect in the bottom of the housing. Even dry country aircraft are found to have corrosion. This is because many of these aircraft have been repainted

and paint remover has entered the housing and is reactivated when water enters the housing during aircraft washing. Applicability: Model 35 D-1 thru D6561 Model 33 CD-1 thru CD-370 Old unit (core) must be returned. FEATURES: FAA/PMA Approved direct replacement part. • One piece aluminum stronger than OEM part. • Durable corrosion resistant white powder coated finish. • Weight increase of 4.56 lbs. beneficial for aft CG aircraft. • Completely improved design eliminates potential for any corrosion. • Upper and lower bronze bushings included. • Grease fittings included. P/N 05-02463

AP

FIBERGLASS COMPONENTS



MC-6 NOSE CHEEKS

From the latest design of John Thorp, this is a 2 piece cowl used on the T-18. Can be adapted to most homebuilts where the builder wishes to use cheeks. They have been installed on the Midget Mustang as well as the Miniplane. Makes a fine nose section.
P/N 05-01213

MT-1 WING TIPS

Manufactured from the original T-18 plans and come ready to slip over the ends of the wing. Nav. lights are normally installed by notching the leading edge corner of these fairings and installing Plexiglass.
P/N 05-01214

MC-5 BELLY PAN

Designed to work in conjunction with the MC4 Nose Cowl. This is the most popular combination being used today and it gives your T-18 all the compound curves and beauty it deserves. P/N 05-00025

CARBURETOR INTAKE SCOOP

Carburetor intake scoop with 4-1/4" x 8" rectangular opening. P/N 05-22500

HEAD REST

Originally designed for the Smith Miniplane but can be used on other biplanes. P/N 05-22100

BABY GREAT LAKES COWL

Fiberglass Cowl set fits Baby Great Lakes, Super Baby Great Lakes, and Buddy Great Lakes. Top and Bottom Cowl halves sold separately.

Dimensions:
33"x29"x9-1/2" (PN 05-02883)
33"x33"x19" (PN 05-02884)

Top Nose Cowl
P/N 05-02883.....

Bottom Nose Cowl
P/N 05-02884.....

BUDDY BABY GREAT LAKES SEAT

This fiberglass seat was designed to fit the Baby Great Lakes aircraft and is recommended by the designer. Dimension: 26"x30"x19"
P/N 05-02885

GEL-COATED FIBERGLASS WHEEL PANTS



Keep gravel, mud, dew and grass out of your prop, off your wings and off your face with these easy-to repair fiberglass reinforced polyester wheel pants. Supplied in gel-coated finish, they have a small seam along the top edge, easily removed by sanding, if desired. Sorry, no mounting hardware is included. Easy to cut and customize. White, red

| Wheel Pant Dimensions | | | | | |
|-----------------------|-------|--------|--------|-----------|--------|
| Size | Width | Height | Length | Opening | Weight |
| 4" | 5 | 9 | 22 | 4.4X12 | 1 |
| 5" | 7 | 9 | 23 | 5.5X13.75 | 1.3 |
| 6" | 8 | 9 | 28 | 8X15.75 | 11.5 |

| Description | Part No. | Price |
|----------------------|----------|-------|
| Wheel Pant 4" Primed | WP4P | . |
| Wheel Pant 4" Red | WP4R | . |
| Wheel Pant 4" White | WP4W | . |
| Wheel Pant 5" Primed | WP5P | . |
| Wheel Pant 5" Red | WP5R | . |
| Wheel Pant 5" White | WP5W | . |
| Wheel Pant 6" Red | WP6R | . |
| Wheel Pant 6" White | WP6W | . |



BUCKET SEATS

For Starduster or Skybolt. Flat Gray finish, 18" wide. Can be upholstered or used plain. Contoured bottom for parachute. These are not chopped glass seats. Hand layed up for extreme lightness. Wt. 3 lbs. 10 oz.
Note: This oversized item ships in a 21 x 21 x 21 box with a dimensional weight of 48 lbs. (56 lbs internationally)
P/N 05-22600



TURTLE DECK

Fits the Acroduster or Skybolt. With flat mounting pad to accommodate a VHF antenna. Approx. Height 19" at front, 13" at back. Overall length, approximately 57".
P/N 05-22200

HOERNER DESIGN WING TIPS

These wing tips are constructed of hand laid-up fiberglass which is extremely strong, has great impact strength, and is resistant to chemicals. The Hoerner design of these wing tips reduce the vortex that emanates from the trailing edge of the wing tip thereby reducing drag on the aircraft, leaving more energy available for lift and speed. Stall speed is decreased and lateral stability is improved. You will see increased cruise speed, more positive aileron control, increased rate of climb, decreased take-off distance, and improved appearance with these tips. All STC and approval data is furnished.



Cherokee Straight Wing Tips
PA-28 140 thru 200R models.
P/N 05-90000 pr.



Cherokee Taper Wing Tips
PA-28 151 thru 236 models
P/N 05-91000 pr.



Cessna Wing Tips
140A, 150, 170B, 172, 175, 180, 182, 185, 210 (pre 1974 models only)
P/N 05-94000 pr.



Comanche Wing Tips
All singles and PA-30 twins.
P/N 05-92000 pr.



Cherokee Stabilator Tips
PA-28 taper and straight wings
P/N 05-93000 pr.



Bonanza Wing Tips
35 series thru P models
P/N 05-95000 pr.

| Other Products: | | |
|---|----------|----------------|
| DESCRIPTION | PART NO. | PRICE |
| Aztec & Apache Wing Tips (PA-23 all models) | 05-96000 | . pr. |
| Apache Dorsal Fin (PA-23 150&160) | 05-97000 | . pr. |
| Beech Wing Tips | 05-00769 | ./pr. |
| Piper Tailcone (PA-28 & PA-32) | 05-98000 | Call for Price |
| Piper Dorsal Fin (PA-28 & PA-32) | 05-99000 | Call for Price |
| Cherokee Taper Wing Tips C/W Replacement | 05-02599 | . pr. |
| Cherokee Dorsal Fin Fwd. | 05-02601 | . |
| Cherokee Dorsal Fin Aft. | 05-02602 | . |
| Cherokee Tail Cone Upper | 05-02603 | . |
| Cherokee Tail Cone Lower | 05-02604 | . |
| Cessna Wing Tips | 05-02605 | . pr. |
| Aztec/Apache Tip Tanks Hoerner Style | 05-02606 | ./pr. |
| Apache Windshied | 05-02607 | . |
| Seneca Wing Tips | 05-02608 | . |
| Seneca Stabilator Tips | 05-02609 | ./pr. |

AP

WHEEL FAIRINGS

All wheel fairings furnished with reinforcing bulkheads for added stability and cleanliness.

AP



MF-1A - 5:00 X 5 fairing that is small and compact. The same shape and size as the early model Cessna 150 & measures 26" long by 7" wide. Has been used on the CA-61, Tailwind, T-18, Baby Ace, Cougar, or any homebuilt that requires this size.
P/N 05-01215 **Pair**



MF-2 - 5:00 X 5 teardrop style as used on the later model Cessna 150. Measuring 36" by 7", it has been installed on Tailwinds, Smyth Sidewinder, Cougar or any wheel this size.
Overall size: 35"L x 7-1/2"W
Opening Size: 7.5"W x 151/2"L
P/N 05-01216 **Pair**



MF-3 - 5:00 X 5 with the long, narrow profile. A standard on Pitts Specials, Acro Sport, T-18, Cassutt & Midget Mustang. Truly a universal shape.
Overall size: 39"l x 7.5"w
Opening Size: 4-3/4"W x 101/2"L
P/N 05-01217 **Pair**



MF-4 - 5:00 X 5 Thorp T-18 fairing. This style was one of our original developments specifically for the T-18 and has proven to be very popular. Like all other listed pants, it will fit any wheel this size.
Overall size: 31.5"L x 7-1/2"W
Opening Size: 14.75"wx 7"L
P/N 05-01218 **Pair**



MF-5 - 6:00 X 6 wheel fairing in the same shape as the J-3 Cub but, scaled down to fit this size wheel. Popular on the bi-planes, Spezio and the parasols. Gives a very classic look to your airplane.
Overall size: 30"L x 9-1/2"W
Opening Size: 7-1/2"W x 18-1/2"L
P/N 05-01219 **Pair**



MF-6 - 6:00 X 6 fairing styled after the late model Cessna 172 and is used on just about any designed aircraft. Measure 42" by 8" and are very pretty.
Overall size: 44"L x 8-1/4"W
Opening Size: 8-1/4"W x 23-1/4"L
P/N 05-01220 **Pair**



MF-7 - 6:00 X 6. Same size and shape as the Piper Cherokee fairings. A standard on the Stardusters, Skybolt and used on many other designs.
Overall size: 37"L x 8"W
Opening Size: 13-1/2"W x 7"L
P/N 05-01221 **Pair**



MF-8 - 5:00 X 5 pant. Almost the same dimension as the MF-3 however, has more of a point on the tip. Also popular on the Pitts, Cassutt, T-18 and Midget Mustang.
Overall size: 37-1/2"L x 8"W
Opening Size: 14-3/4"W x 6"L
P/N 05-01222 **Pair**



MF-9 - 8:00 X 4. J-3 Cub design for any bi-plane or parasol using the larger size wheels.
Overall size: 29"L x 101/2"W
Opening Size: 8-1/4"W x 10"L
P/N 05-01223 **Pair**



MF-10 - 7:00 X 6. For aircraft using the larger wheels and also for the Stinson or Funk. Much lighter than the factory originals.
Overall size: 31"L x 11"W
Opening Size: 19"L x 10"W
P/N 05-01224 **Pair**



MF-11 - 6:00 X 6 wheel fairings. Same size and shape as used on the Tripacer, Pacer or Colt. More streamlined design than the MF-9. A nice installation on the Super Cub w/ 8.00 x 4 wheels.
Overall size: 43"L x 9-1/2"W
Opening Size: 9.5"w x 18.5"L
P/N 05-01225 **Pair**



MF-12 - 5:00 X 5 RACING FAIRINGS. Fits the V-Witt, Cassutt, Owl or any Formula One, Formula V or Bi-plane using this size wheel. Race proven.
Overall size: 40"L x 7-1/2"W
Opening Size: 4.5"W x 10-3/4"L
P/N 05-01226 **Pair**

WHEEL PANT COVERS



Stop tow-bar wheel pant scuffing. & Avoid costly wheel pant repainting. Available in standard black, navy or burgundy. Fits models: Cessna 172 | 182 | 206 Cherokee

- Made from heavy-duty vinyl
- Padded backing
- Attaches quickly using Velcro(tm)
- Stores easily
- Personalization available

Cover Navy..... P/N 05-03048
Cover Black..... P/N 05-03049
Cover Burgundy..... P/N 05-03050

PA28/PA32 REFINED SPEED PANTS



FAA approved Laminar Flow Speed Pants will add up to 10.5 mph over bare wheels and up to 8 mph over stock wheel pants for all Piper PA-28 and PA-32 aircraft models. A special pressure recovery design improves rate of climb with most installations.

At 10 pounds, these second generation Speed Pants are lighter and up to 5 times stronger than conventional Piper wheel pants. They are made of three layers of hand-laid, 10 ounce fiberglass which is oven cured with a high strength resin. Additional layers of cloth are applied to stress areas. A removable panel allows easy access to brakes. Wing to wheel fairing improve the aesthetics of the main gear.

P/N 05-03627

CESSNA PARTS

(FAA/PMA APPROVED)

CESSNA COWL FLAP RIGHT AND LEFT



These cowl flaps feature a replaceable stainless steel hinge that may be removed and replaced using screws. The specific model applicability for these cowl flaps are the C-180C, D, E, F, G, H, J and 180K; the 182B, C and D; 185, 185A, B,C,D, 185E, A185E and A185F. FAA Approved.
Left..... P/N 05-03393.....
Right..... P/N 05-03394.....

HORIZONTAL STABILIZER ADJUSTING SCREW AND BARREL FOR C-180, 185 AND C-182 THRU C-182D



Screw..... P/N 05-07000.....
Barrel..... P/N 05-07005.....

HORIZONTAL STABILIZER ADJUSTING CAM



Cam..... P/N 05-07010.....

STABILIZER TRIM SCREW BOOT FOR C-180, C-185, AND C-182 THRU C-182D



Boot..... P/N 05-07015.....

CESSNA 120/140 FUEL VALVE KIT



This valve has a very smooth action with positive detents. Like the original valve, it has positions for left-on, right-on and both-off. Unlike the original, it is not prone to sticking or binding. It does not require periodic seal replacement or lubrication. This PMA'd replacement valve will mount almost identically to the original OEM valve. It uses the same tank selector plate and the same mounting hardware as the original. This valve is sold in a kit that includes the handle and installation instructions. The handle has no "pointer." This is in compliance with AD47-43-02..... P/N 05-03407.....

C-120, C-140 LIFT STRUT ROD ENDS



Front Rod End.... P/N 05-07020.....
Rear Rod End.... P/N 05-07025.....

C-172 OIL DOOR

Applicable on the following models:
(172, 172A, B, C, D, E, F, G, H, I, J, K, L, M, N, P, Q)
P/N 05-07030.....

C-180, 182, & 185 SERIES COWL OIL DOOR

Applicable on the following models: For 180—180G,
182—182G & 185—185C
P/N 05-07035.....

CESSNA AILERON HINGE

For all C-150, 152, 170A, 170B, 172, 180,
182 & 185.....P/N 05-07040.....

CESSNA STYLE TAIL SKID



This easy-to-install tail skid is designed to save the tail feathers on most single engine Cessna's. Made from 4130 aircraft steel, this tail skid fits Cessna 150, 152, 172, 177, and 182.
P/N 13-17010.....

EXHAUST CUFF FOR CESSNA 206, 210 AND 340



The problem * The exhaust pipe creates parasitic drag within the slip stream * Non-laminar flow conditions occur at the opening of the cowl * Aircraft esthetics are affected by the protrusion of the pipe. The exhaust cuff solution eliminates non-laminar airflow about the exhaust port * Reduces cylinder head temperatures * Cruise performance increased * Enhances the esthetics of the aircraft
Cessna Exhaust Cuff 206 & 210.....P/N 05-04474.....
Cessna Exhaust Cuff 340.....P/N 05-04475.....

C-170 TAILWHEEL SPRINGS



Tailwheel Spring Assembly.....P/N 06-15000.....
Main Leaf Only.....P/N 06-15100.....

C-120/140 TAILWHEEL SPRING SETS (LATER CESSNA SPRING SET SHOWN)



Early 120-140 (single bend, originally on SN 8001-14026)
P/N 05-07055.....
120-140 (SN 14027 and up) P/N 06-14800.....
120-140 main leaf only (SN 8001-14026) P/N 05-07065.....
120-140 main leaf only (SN 14072 & up) P/N 06-14900.....

RUDDER BELLCRANK FOR C-120, 140 & 170



P/N 05-07075.....

WING FABRIC CLIP FOR C-120/140/170



P/N 09-19900.....

RUDDER & ELEVATOR SKINS FOR C-180/185, & 182-182D / FAA-PMA ELEVATOR KIT:



Top/Bottom Right & Left P/N
P/N 05-02673.....
RUDDER (for all C-180, 185, 182-182B):
Right hand.....P/N 05-07090.....
Left hand.....P/N 05-07095.....

ALL METAL COWLING PARTS FOR 120-140



1946 Cowling Items
Lower Cowl Skin, Left P/N 05-07165.....
Lower Cowl Skin, Right P/N 05-07170.....
Nose Cowl Only P/N 05-07175.....

C-120/140 COWL GRILLS



Left Hand Cowl Grill
P/N 05-07180.....
Right Hand Cowl Grill
P/N 05-07185.....

Also approved for 170, 170A and 170B through S/N 25372

C-120/140 ENGINE MOUNT ASSEMBLY



120-140..... P/N 05-07190.....
140A..... P/N 05-07195.....

FLAP TRACK WEAR GAGE



McFarlane Aviation Products has developed a new tool to determine Flap track wear. McFarlane developed this tool to positively indicate when the flap track is worn beyond service limits. Flap Track Wear Gage Use to determine if a Cessna flap track is worn beyond service limits. Flap Track Wear Gage Instructions: Run the gage plug along each slot in each flap track while verifying that the gage will not enter the slot. Reposition the flaps as required to gage the entire length of each slot. If the gage enters a slot at any point the track is worn beyond service limits. The diameter of the gage is .6035 inches (diameter tolerance +.000/- .002) Periodically verify the gage diameter by measuring the gage diameter with a calibrated micrometer.
P/N 05-02145.....

AP

CESSNA PARTS

(FAA/PMA APPROVED)

LEVER TYPE WINDOW LATCHES & COMPONENT PARTS



Latch Assembly Applicable on:
120, 140, 140A, 170, 170A,
170B, (SN 20267 thru 25372)
P/N 05-07100.....

Latch Assembly Applicable on:
170B (SN 25373 & on),
172, 175, 180 & 182
P/N 05-07105.....

COMPONENT PARTS

| | |
|--------------------------------------|--------------------|
| Arm (for -2 assy.)(U0413362-8)..... | P/N 05-07110..... |
| Arm (for -3 assy.)(U0413362-9)..... | P/N 05-07115..... |
| Bracket (U0413362-13)..... | P/N 05-07120..... |
| Knob (U0413359)..... | P/N 05-07125..... |
| Extension Arm (U0413362-12)..... | P/N 05-07130..... |
| Angle (left side)(U0413362-10)..... | P/N 05-07135..... |
| Angle (right side)(U0413362-11)..... | P/N 05-07140..... |
| Pin (U0413362-14)..... | P/N 05-07145..... |
| Pin (U0413362-16)..... | P/N 05-07150..... |
| Pin (U0413362-15)..... | P/N 05-07155..... |
| Spacer (U0413362-7)..... | P/N 05-07160..... |
| Washer (2 req'd)..... | P/N AN960-10..... |
| Washer (2 req'd)..... | P/N AN960-10L..... |
| Screw..... | P/N THA4-6..... |

AP

CABIN ENTRY STEP FOR CESSNA AIRCRAFT



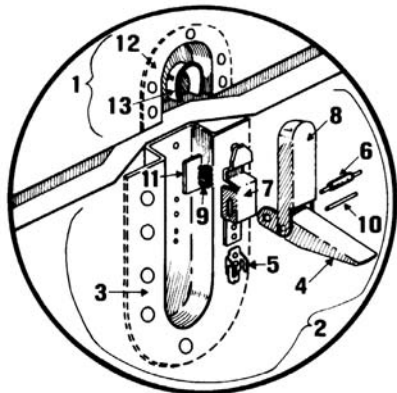
Cabin Entry Step for Cessna Aircraft.
Applicable to:

170, 170A, B - 18000 thru 27169
180,180A, B, C, D, E, F - 30000 thru 18051312
185, 185A, B, C, D, E, A185E* - 1850001 thru 1851300

* Partial model eligibility

| | | |
|-------------------------|-------------------|----------|
| aLeft Cabin Access..... | P/N 05-04176..... | \$360.95 |
| Right Cabin Access..... | P/N 05-04177..... | \$360.95 |

COWL LATCHES AND DETAILS FOR 120-140 AND 170 SERIES



HOOK & LEVER ASSEMBLIES

| | |
|------------------------|-------------------|
| 1) Hook Assembly..... | P/N 05-07200..... |
| 2) Lever Assembly..... | P/N 05-07205..... |

DETAIL PARTS

| | |
|-----------------|-------------------|
| 3) Recess..... | P/N 05-07210..... |
| 4) Lever..... | P/N 05-07215..... |
| 5) Clip..... | P/N 05-07220..... |
| 6) Pin..... | P/N 05-07225..... |
| 7) Housing..... | P/N 05-07230..... |
| 8) Hook..... | P/N 05-07235..... |
| 9) Spring..... | P/N 05-07240..... |
| 10) Pin..... | P/N 05-07245..... |
| 11) Shim..... | P/N 05-07250..... |
| 12) Recess..... | P/N 05-07255..... |
| 13) Hook..... | P/N 05-07260..... |

AILERON HINGE FOR CESSNA



FAA - PMA APPROVED AS0523816-1
P/N 05-00048..... ea.

150 SPINNER ASS'Y (THROUGH CESSNA 150 MODEL K ONLY)



| | |
|---|-------|
| Spinner Dome P/N 05-09030..... | ..... |
| Front Plate (original Cessna) P/N 05-09035..... | ..... |
| Rear Plate P/N 05-09040..... | ..... |
| 170B & 172 1956 thru 1959 SPINNER ASS'Y..... | ..... |
| Spinner Bulkhead..... P/N 05-07265..... | ..... |
| Spinner Dome..... P/N 05-07270..... | ..... |
| Spinner Assembly ... P/N 05-07275..... | ..... |
| 172 SPINNER (Early Models) Spinner Dome (all aluminum to replace plastic) P/N 05-09045..... | ..... |
| Front Plate P/N 05-09050..... | ..... |
| Rear Plate P/N 05-09055..... | ..... |
| 172 spinner (Late Models) (For 172, I, K, L, M, N, P, & Q)..... | ..... |

| | |
|---|-------------------|
| Dome** (FAA/PMA)..... | P/N 05-07280..... |
| Front Plate* (FAA/PMA)..... | P/N 05-07285..... |
| Back Plate* (original Cessna part)..... | P/N 05-07290..... |

*Check SN for applicability **Dome also approved on 172G & H

CESSNA 182 ALUMINUM SPINNERS

These aluminum spinners and spinner support spacers are FAA approved for installation on several models of Cessna 182 series aircraft using McCauley two blade constant speed propellers. The Spinner Dome replaces original Cessna p/n 0752637K200, 0752637-5 and 0752637-11. The Spinner Spacer replaces original Cessna p/n 0752620-1 and 0752620-3. The Spinner Dome is approved on the Cessna 182H, 182J, 182K, 182L, 182M, 182N, 182P, 182Q and the 182R. The Spinner Support Spacer is approved on Cessna Models 180H, 180J, 180K, A185E, A185F, 182E, 182F, 182G, 182H, 182J, 182K, 182L, 182M, 182N, 182P, 182Q, 182R, 210-5 (205), 210-5A (205A), 206, U206, P206 and the U206A.

| | |
|--------------------------------------|---------------|
| Spinner Dome U0752637K200..... | 05-01901..... |
| Spinner Sport Spacer U0752620-3..... | 05-01902..... |

CESSNA TRIM CONTROL CHAINS



We carry FAA-PMA approved replacement trim control chains for Cessna 120 through 210 series aircraft. Call the Cessna/Piper parts specialist at Aircraft Spruce (1-877-4-SPRUCE) for assistance in determining the correct chain for your aircraft.

| Model No. | Part No. | Price Ea. |
|----------------|----------|-----------|
| ASS2294-25 | 05-00289 | ..... |
| ASS2295-25-185 | 05-00291 | ..... |
| ASS2295-25-249 | 05-00292 | ..... |
| ASS2295-25-321 | 05-00293 | ..... |
| ASS2295-25-43 | 05-00294 | ..... |
| ASS2295-25-47 | 05-00295 | ..... |
| ASS2295-25-61 | 05-00296 | ..... |
| ASS2295-25-63 | 05-00297 | ..... |
| ASS2295-25-67 | 05-00298 | ..... |
| ASS2295-25-70 | 05-00299 | ..... |
| ASS2295-25-71 | 05-00301 | ..... |
| ASS2295A25-111 | 05-00302 | ..... |
| ASS2295P25-113 | 05-00303 | ..... |
| ASS2295P25-155 | 05-00304 | ..... |
| ASS2295P25-159 | 05-00305 | ..... |
| ASS2295P25-185 | 05-00306 | ..... |
| ASS2295P25-321 | 05-00307 | ..... |
| ASS2295P25-47 | 05-00308 | ..... |
| ASS2295P25-55 | 05-00309 | ..... |
| ASS2295P25-59 | 05-00311 | ..... |
| ASS2295P25-63 | 05-00312 | ..... |
| ASS2295P25-67 | 05-00313 | ..... |
| ASS2295P25-69 | 05-00314 | ..... |
| ASS2295P25-71 | 05-00315 | ..... |
| AS0432138-2 | 05-00316 | ..... |

CESSNA WHEEL PANT MOUNTING PLATES

These FAA-PMA approved mounting plates are anodized for improved corrosion resistance and will save over \$100 compared to factory mounting plates. Approved with partial eligibility for the Cessna 150, 152, and 172. Verify approval for your aircraft with Aircraft Spruce prior to ordering.



| | | |
|------------------------|---------------|------------|
| Cessna P/N | Our P/N | Price Each |
| 0441225-1 (Left)..... | 05-01497..... | ..... |
| 0441225-2 (Right)..... | 05-01498..... | ..... |
| 0441220-1 (Left)..... | 05-01499..... | ..... |
| 0441220-2 (Right)..... | 05-01501..... | ..... |

CESSNA PARTS

Aircraft Spruce and Specialty stocks a large inventory of Cessna replacement parts. Some of the most commonly required parts are listed on this page. If you require Cessna parts not listed here, please provide us with the Cessna part numbers and we will provide you with a prompt quotation. All of the parts listed here are authentic Cessna factory parts and all carry our low price guarantee. Please verify that the parts are correct for your Cessna model/year by referring to the applicable Cessna parts manual prior to ordering.

Call for Prices on Unlisted Cessna Parts

| Part No. | Description | Price | Part No. | Description | Price | Part No. | Description | Price |
|---------------|-------------------|-------|----------------|-----------------|-------|--------------|---------------|-------|
| S1258-1 | Sump | . | 0713348-1 | Stall Horn | . | 0556010-200 | Adapter Assy. | . |
| SK172-1F | Strut Kit | . | S2488-1 | Stall Horn Reed | . | 1232040-5 | Boot | . |
| S1093-1 | Flap Buttons | . | 0756009-8 | Gasket | . | 79C1 | Drain Valve | . |
| NAS75-3-009 | Bushing | . | 0851559-1 | Washer | . | S2485-1 | Drain Valve | . |
| NAS77-3-23 | Bushing | . | 0756010-6 | Plunger | . | S1577A1 | Contacto | . |
| NAS77-8-88 | Bushing | . | 0756011-1 | Standpipe | . | S1579A2 | Contacto | . |
| MS25171-1 | Nipple | . | S1450-6B14-010 | Washer | . | S1580A1 | Contacto | . |
| MS25171-2 | Nipple | . | S1597-1-37.5 | Belt V | . | S1588-1 | Gasket | . |
| C156003-0101 | Fuel Cap | . | B3-5-1 | Filter Vac | . | S1588-2 | Gasket | . |
| C592001-0201 | Static Wick | . | S1921-1 | Clamp | . | 0750143-2 | Deflector | . |
| B100142-1 | Fuel Cap Gasket | . | U10C062-262M | Clamp | . | 0750143-3 | Bracket | . |
| S1991A1 | Contacto | . | B40012 | Brush | . | 0851559-2 | Washer | . |
| S2020-2 | Drain Valve | . | A2748 | Seal | --- | S1915-1 | Capacitor | . |
| S2106-2 | Drain Valve | . | A2749 | Seal Wiper | . | S1915-2 | Capacitor | . |
| S2160-1 | Switch | . | MS25253-1 | Switch | . | S1994-1-1 | Switch | . |
| S2237-3 | Seat Belt Bushing | . | 1234665-10 | Tab | . | S2334-3 | CHT Probe | . |
| S2416-1-31.0 | Alt Belt | . | S1906-1 | Switch | . | S1258-1 | Sump | . |
| 0400213-6 | Compass Placards | . | S1906-2 | Switch | . | S3010-1 | Switch | . |
| 0413613-1-279 | Panel Nut | . | S1230-17 | Control | . | S1104-3 | Rod End | . |
| 0511242-1 | Seat Stop | . | S1230-19 | Control | . | S1105-4 | Rod End | . |
| 1220114-1 | Spacer | . | RD0015H1600JBL | Rheostat | . | C592001-0201 | Wick | . |
| 1243030-5 | Shim | . | 0441139-6 | Shim | . | C592001-0203 | Wick | . |
| 1243030-6 | Shim | . | 0541111-2 | Shim | . | S1704-1 | Roller | . |
| 1243030-7 | Shim | . | 0441157-2 | Shim | . | 1714000-22 | Washer | . |
| 1250860-29201 | Clamp | . | 0441157-1 | Shim | . | 16165 | Wick | . |
| 1298119-4 | Exhaust Spring | . | 1250405-1 | Nut | . | KM610-64 | Latch | . |
| 1414104-54 | Bushing | . | MS29513-338 | O-Ring | . | B3-11-1 | Gasket | . |
| 1513174-3 | Grey Panel Nut | . | AN6235-2A | Filter Hyd | . | S1477-3 | Nut | . |
| 1513174-5 | Black Panel Nut | . | AN6235-3A | Element | . | S1477-08 | Nut Clip | . |
| 1555014-2 | Clamp Half | . | 1250922-200 | Adapter | . | NH1000897-30 | Clamp | . |
| 0523919 | Bushing | . | 1250922-201 | Adapter | . | NH1000897-40 | Clamp | . |
| 0523920 | Roller | . | 1250922-202 | Adapter | --- | NH1000897-50 | Clamp | . |
| 0523921 | Roller | . | 0750142-1 | Gasket | . | NH1000897-60 | Coupling | . |
| 0541139 | Plug | . | 0756009-1 | Fuel Filter | . | DGR3 | ACU | . |
| 9910306-1 | Westgate Gasket | . | 0741623-4 | Tread | . | DGR6 | Regulator | . |
| 0711001-59 | Hinge Pin | . | 0441157-3 | Shim | . | | | |

AP

CESSNA COWLING MOUNTS - FIREWALL



The Skybolt SK2003 is the FAA TSO-C148 approved direct replacement for the common CESSNA /LORD J7444 firewall platemounts.

SK2003 -14 Southco™ Fasteners • SK2003-24 Camloc™ or CLoc™ 2000 Series Fasteners • SK2003-36

Camloc™ or CLoc™ 4000 Series Fasteners

The newly improved SK2003 offers greater flex for cowlings with cumbersome alignment issues. Combined with the SK2003-AW alignment washer, the SK2003 can be easily positioned to align with the existing cowling holes. This allows the cowling fasteners to lock properly and effortlessly, removing the stress that is a common problem in original part failures. Fasteners not included.

| Orig. Mfg. Part No. | New Part No. | Aircraft | Part No. | Price |
|---------------------|--------------|------------------------------------|----------|-------|
| J7444-14 | SK2003-14 | 67-On C150, 67-86 C172, 71-78 C177 | 08-00663 | . |
| J7444-24 | SK2003-24 | 73-86 C182 | 08-00664 | . |
| J7444-36or-42 | SK2003-14 | 96-On C172 | 08-00665 | . |

15% discount on 10 or more

CONVERT OLDER SOUTHCO COWLINGS TO HEAVY DUTY SKYLOC SK40S5 FASTENERS

Now easier than ever to install. No drilling of airframe required. All kits utilize new SK2003 cushioned shock mounts complete instructions with photographs. All paperwork included for logbook entry.

| Aircraft | Kit | Convert all fasteners to: | Part No. | Price |
|--------------|--------------|---|----------|-------|
| C150 (67-On) | SK203C150P4 | Firewall to SK40S5 Stainless / Sides to SK26S51 Stainless | 08-00666 | . |
| C172 (67-81) | SK203C172P4 | Firewall to SK40S5 Stainless / Sides to SK40S5 Stainless | 08-00667 | . |
| C172 (82-86) | SK203C172PQ4 | Firewall to SK40S5 Stainless / Sides to SK40S5 Stainless | 08-00671 | . |
| C177 (All) | SK203C177P4 | Firewall to SK40S5 Stainless / Sides to SK40S5 Stainless | 08-00668 | . |
| C182 (73-86) | SK203C182P4 | Firewall to SK40S5 Stainless / Sides-replace 40S5 with SK40S5 Stainless | 08-00669 | . |

Partial Kit list – Call for early screw cowling conversion kit and non-listed aircraft. Special tooling required – #4P3/T26 tool set

Note: In addition to normal hand tools, Unibit 1 and Unibit 3 stepdrills required.

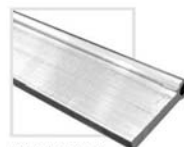
ALIGNMENT CAM WASHER SK2003-AW - Now easier than ever to align cowlings and fasteners. For all SK2003/J7444 (2 required per mount)

P/N 08-00670.....



INTER-CYLINDER BAFFLE

Intercylinder Baffles for Teledyne Six Cylinder Engines. Replaces Cessna Part Number 0750135-1 and 0851833-1
P/N 05-02362.....



FLAP TRAILING EDGE BULB

Improved fit and appearance. Form fitting, Trailing Edge Bulb for Cessna Flaps. (Cut on bevel to avoid crimping Flap Trailing Edge.) STC/PMA Approved. For application please call or visit our website.
79.5" length..... P/N 05-00046.....
116" length..... P/N 05-00047.....

P/N 05-00046

MC600 SERIES UNIVERSAL SOLID WIRE VERNIER MIXTURE CONTROL



FAA-PMA approved for use as a minor alteration part on the following aircraft:

- Cessna • Raytheon • Maule
- Cessna/Reims • Mooney • Univair (Stinson)
- Piper Call for Specific Models

- Easily field approved for other applications

- Trim to exact length P/N 05-01254.....



THROTTLE CONTROL

Fittings and components are made from anodized aluminum, stainless steel, and brass. All critical swage connections are metal to metal for continued dependability. Vernier locking devices are precision formed and heat treated in critical wear areas. P/N 05-02209.....

FLAP SKINS – AILERON SKINS

UPPER RIGHT-HAND AND LEFT-HAND FLAP AILERON



- * Better and costs less!
- * No pre-drilled holes to misalign
- * Precisely formed and trimmed
- * Plastic coated on both sides for better protection during handling (remove before installation)
- * Direct replacement - No STC required

FLAP SKIN KIT COMPONENTS

| Qty | MFG P/N | Description | P/N | Price |
|------|--------------|---------------|----------|-------|
| KIT | SKN-KT-FLP1 | Flap skin kit | 05-04164 | . |
| 1 ea | MC0426901-10 | Flap Upper RH | 05-03371 | . |
| 1 ea | MC0426901-11 | Flap Upper LH | 05-03372 | . |
| 1 ea | MC0426901-6 | Flap Lower LH | 05-03369 | . |
| 1 ea | MC0426901-7 | Flap Lower RH | 05-03370 | . |

| Qty | MFG P/N | Description | P/N | Price |
|------|-------------|---------------|----------|-------|
| KIT | SKN-KT-FLP2 | Flap skin kit | 05-04169 | . |
| 1 ea | MC0523901-4 | Flap Upper LH | 05-04113 | . |
| 1 ea | MC0523901-5 | Flap Upper RH | 05-04114 | . |
| 1 ea | MC0523901-6 | Flap Lower LH | 05-04115 | . |
| 1 ea | MC0523901-7 | Flap Lower RH | 05-04116 | . |

| Qty | MFG P/N | Description | P/N | Price |
|------|---------------|------------------|----------|-------|
| KIT | SKN-KT-FLP3 | Flap skin kit | 05-04170 | . |
| 2 ea | MC0523901-201 | Flap Upper LH RH | 05-04125 | . |
| 1 ea | MC0523901-6 | Flap Upper LH | 05-04115 | . |
| 1 ea | MC0523901-7 | Flap Lower RH | 05-04116 | . |

| Qty | MFG P/N | Description | P/N | Price |
|------|--------------|---------------|----------|-------|
| KIT | SKN-KT-FLP4 | Flap skin kit | 05-04171 | . |
| 1 ea | MC0523901-21 | Flap Upper LH | 05-04119 | . |
| 1 ea | MC0523901-22 | Flap Upper RH | 05-04120 | . |
| 1 ea | MC0523901-19 | Flap Lower LH | 05-04117 | . |
| 1 ea | MC0523901-20 | Flap Lower RH | 05-04118 | . |

| Qty | MFG P/N | Description | P/N | Price |
|------|--------------|---------------|----------|-------|
| KIT | SKN-KT-FLP5 | Flap skin kit | 05-04172 | . |
| 1 ea | MC0523901-25 | Flap Upper LH | 05-04121 | . |
| 1 ea | MC0523901-26 | Flap Upper RH | 05-04122 | . |
| 1 ea | MC0523901-27 | Flap Lower LH | 05-04123 | . |
| 1 ea | MC0523901-28 | Flap Lower RH | 05-04124 | . |

| Qty | MFG P/N | Description | P/N | Price |
|------|--------------|--------------------|----------|-------|
| KIT | SKN-KT-FLP6 | Flap skin kit | 05-04173 | . |
| 1 ea | MC0523901-25 | Flap Upper Inbd LH | 05-04121 | . |
| 1 ea | MC1220100-20 | Flap Upper Inbd RH | 05-04135 | . |
| 1 ea | MC1220100-5 | Flap Upper Otbd LH | 05-04132 | . |
| 1 ea | MC1220100-6 | Flap Upper Otbd RH | 05-04133 | . |
| 1 ea | MC1220100-27 | Flap Lower Inbd LH | 05-04123 | . |
| 1 ea | MC1220100-18 | Flap Lower Otbd RH | 05-04134 | . |
| 1 ea | MC1220100-3 | Flap Lower Otbd LH | 05-04130 | . |
| 1 ea | MC1220100-4 | Flap Lower Otbd RH | 05-04131 | . |

| Qty | MFG P/N | Description | P/N | Price |
|------|--------------|--------------------|----------|-------|
| KIT | SKN-KT-FLP7 | Flap skin kit | 05-04173 | . |
| 1 ea | MC0523901-25 | Flap Upper Inbd LH | 05-04121 | . |
| 1 ea | MC1220100-26 | Flap Upper Inbd RH | 05-04122 | . |
| 1 ea | MC1220100-5 | Flap Upper Otbd LH | 05-04132 | . |
| 1 ea | MC1220100-6 | Flap Upper Otbd RH | 05-04133 | . |
| 1 ea | MC1220100-27 | Flap Lower Inbd LH | 05-04123 | . |
| 1 ea | MC1220100-28 | Flap Lower Inbd RH | 05-04124 | . |

FLAP SKIN KIT COMPONENTS CONT.

| Qty | MFG P/N | Description | P/N | Price |
|------|-------------|--------------------|----------|-------|
| 1 ea | MC1220100-3 | Flap Lower Otbd LH | 05-04130 | . |
| 1 ea | MC1220100-4 | Flap Lower Otbd RH | 05-04131 | . |

| Qty | MFG P/N | Description | P/N | Price |
|------|--------------|--------------------|----------|-------|
| KIT | SKN-KT-FLP8 | Flap skin kit | 05-04175 | . |
| 1 ea | MC1220100-33 | Flap Upper Inbd LH | 05-04133 | . |
| 1 ea | MC1220100-34 | Flap Upper Inbd RH | 05-04134 | . |
| 1 ea | MC1220100-5 | Flap Upper Otbd LH | 05-04132 | . |
| 1 ea | MC1220100-6 | Flap Upper Otbd RH | 05-04133 | . |
| 1 ea | MC1220100-35 | Flap Lower Inbd LH | 05-04138 | . |
| 1 ea | MC1220100-36 | Flap Lower Inbd RH | 05-04139 | . |
| 1 ea | MC1220100-3 | Flap Lower Otbd LH | 05-04130 | . |
| 1 ea | MC1220100-4 | Flap Lower Otbd RH | 05-04131 | . |

AILERON SKIN KIT COMPONENTS

| Qty | MFG P/N | Description | P/N | Price |
|------|--------------|-----------------------|----------|-------|
| KIT | SKN-KT-AIL1 | Skin Kit | 05-04140 | . |
| 1 ea | MC0523800-6 | Aileron Upper Inbd LH | 05-03373 | . |
| 1 ea | MC0523800-7 | Aileron Upper Inbd RH | 05-03374 | . |
| 1 ea | MC0523800-8 | Aileron Upper Otbd LH | 05-03375 | . |
| 1 ea | MC0523800-9 | Aileron Upper Otbd RH | 05-03376 | . |
| 1 ea | MC0523800-10 | Aileron Lower Inbd LH | 05-03377 | . |
| 1 ea | MC0523800-11 | Aileron Lower Inbd RH | 05-03378 | . |
| 1 ea | MC0523800-12 | Aileron Lower Otbd LH | 05-03379 | . |
| 1 ea | MC0523800-13 | Aileron Lower Otbd RH | 05-03380 | . |

| Qty | MFG P/N | Description | P/N | Price |
|------|--------------|-----------------------|----------|-------|
| KIT | SKN-KT-AIL2 | Skin Kit | 05-04141 | . |
| 1 ea | MC1624001-5 | Aileron Upper Inbd LH | 05-04145 | . |
| 1 ea | MC1624001-6 | Aileron Upper Inbd RH | 05-04146 | . |
| 1 ea | MC1624001-9 | Aileron Upper Otbd LH | 05-04149 | . |
| 1 ea | MC1624001-10 | Aileron Upper Otbd RH | 05-04150 | . |
| 1 ea | MC1624001-3 | Aileron Lower Inbd LH | 05-04143 | . |
| 1 ea | MC1624001-4 | Aileron Lower Inbd RH | 05-04144 | . |
| 1 ea | MC1624001-7 | Aileron Lower Otbd LH | 05-04147 | . |
| 1 ea | MC1624001-8 | Aileron Lower Otbd R | 05-04148 | . |

| Qty | MFG P/N | Description | P/N | Price |
|------|--------------|------------------|----------|-------|
| KIT | SKN-KT-AIL3 | Skin Kit | 05-04142 | . |
| 1 ea | MC1220085-11 | Aileron Upper LH | 05-04126 | . |
| 1 ea | MC1220085-12 | Aileron Upper RH | 05-04127 | . |
| 1 ea | MC1220085-13 | Aileron Upper LH | 05-04128 | . |
| 1 ea | MC1220085-14 | Aileron Upper RH | 05-04129 | . |



REPLACEMENT CESSNA PARTS

CESSNA STEERING RODS



These Cessna Steering Rods are better than the originals. Replace old, weak steering rods with these stainless steel, FAA-PMA approved steering rods and save up to \$100 each.

| Cessna Series | Serial Number | Part Number | Replaces Cessna P/N | Price Each |
|--|--|-------------|---------------------|------------|
| 150 | ALL | 05-00273 | 0543022-3; L | . |
| 152 | ALL | 05-00274 | 0543022-4; R | . |
| 172,172A | 28000 to 17247746 | 05-00275 | 0543022-1; L | . |
| | | 05-00276 | 0543022-2; R | . |
| 172B,C | 17247747 to 17249544 | 05-00589 | 0743008-1; L | . |
| | | 05-00590 | 0743008-2; R | . |
| 172D, E, F, G, H, I, K, L, M, R172K | 17247747 to 17249544 R1722000 to R1723454 | 05-00275 | 0543022-1; L | . |
| F172D, E, F, G, H, K, L, M, N, P FP172 ER172E, F, G, H, J, K | F1720001 to F17202254 FP1720001 to FP1720003 FR1720001 to FP17200675 | 05-00276 | 0543022-2; R | . |
| 175,175A/B/C | 55001 to 17557119 | 05-00589 | 0743008-1; L | . |
| | | 05-00590 | 0743008-2; R | . |
| 182,182A/B/C/D | 33000 to 53007 18253008 to 18253598 | 05-00589 | 0743008-1; L | . |
| | | 05-00590 | 0743008-2; R | . |

NOSE GEAR TORQUE LINK REPAIR KIT FOR CESSNA AIRCRAFT



This convenient kit includes all commonly replaced torque link parts. * FAA approved and certified standard hardware * Fits most single engine Cessna aircraft Please visit our website for kit components. P/N 05-04427

CESSNA STEERING ROD BOOTS



Keep the exhaust and cold out of the cabin with these Kevlar/Fiberglass FAA/PMA approved Steering Rod Boots. These will last much longer & are less expensive than original Cessna boots.

FAA/PMA approved Steering Rod Boot application chart for Cessna Model Series 150, 152, 172, 175, and 182 Aircraft.

| Model | Serial No. | Part No. | Price/ |
|---|--|----------|--------|
| 150 150A,B,C,D,E, F,G,H,J,K,L,M A150K, L, M F150F,G,H,J,K,L,M FA150K, L FRA150L,M | 17001 - 59018 15059019 - 15079405 A1500001 - A1500734 F1500001 - F15001428 FA1500001 - F1500120 FRA1500121 - FRA1500336 | 05-00277 | . |
| 152 A152 F152 FA152 | 15279406 - 15286033 A1520735 - A1521049 F15201429 - F15201980 FA1520337 - FA1520425 | 05-00277 | . |
| 172 172A,B,C,D,E,F, G,H,I,K,L,M,N,P F172D,E,F,G,H, K,L,M,N,P FP172 FR172E,F,G,H,J,K | 28000 - 46754 46755 - 17276673 F1720001 - F17202254 FP1720001 - FP1720003 FR17200001 - FR17200675 | 05-00279 | . |
| 175 175A, B, C | 55001 - 56238 56239 - 17557119 | 05-00279 | . |
| 182 182A, B, C, D | 33000 - 53007 18253008 - 18253598 | 05-00279 | . |

INTAKE HEAT SHIELD DEFLECTOR



This part replaces Cessna part number 0750121. This intake Heat Shield Deflector is vibration dampened to prevent cracking! It is made of polished stainless steel for better heat control. FAA approved.

P/N 05-02361

| Eligibility List | |
|--|---|
| Aircraft Models | Serial Numbers |
| 175*, A,B,C P172 | 56083 thru 17557118 P17257120 thru P17257188 |
| 180, A,B,C,D,E,F,G,H,J,K | 30000 thru 18053203 |
| 182, A,B,C,D,E,F,G,H,J,K,L,M,N,P,Q,R F182P,Q | 33000 thru 18268615 F18200001 thru F18200169 |
| A182J,K,L,M,N T182 | A182-0001 thru A182-0148 18267716 thru 18268615 |
| 185, A,B,C,D,E/A185E,F 185.A/B/A188,A,B T188C | 185-0001 thru 18504448 188-0001 thru 18803968T T18803297T thru T18803968T |
| 205,A 206 | 205-0001 thru 205-0577 206-0001 thru 206-0275 |
| U206, A,B,C,D,E,F,G P206, A,B,C,D,E/TP206A,B,C,D,E TU206A,B,C,D,E,F,G | U206-0276 thru U20607020 P206-0001 thru P20600647 U206-0438 thru U20607020 |
| 207, A/T207,A 210, A,B,C,D,E,F,G,H,J,K,L,M,N,R/ T210K,LM,N,R P210N,R T210G,H,J | 20700001 thru 20700788 57001 thru 21065009 P21000001 thru P21000874 T210-0198 thru T210-0454 |

CESSNA BRASS SHIM TORQUE LINK

FAA-PMA APPROVED - Eliminates undampened torque link motion to prevent shimmy.



| Part No. | Cessna Part No. | Thickness | Price ea |
|----------|-----------------|-----------|----------|
| 05-00429 | S1450-6B14-010 | .010" | . |
| 05-00430 | S1450-6B14-007 | .007" | . |
| 05-00431 | S1450-6B14-005 | .005" | . |

CESSNA FUEL SCREEN STANDPIPE



This FAA-PMA approved stainless steel Cessna Fuel Screen Standpipe is the last one you will need to buy. Improved design eliminates corrosion pits and stripped threads. 1963 and on.
P/N AS0756011-1

CESSNA FUEL QUANTITY TRANSMITTERS



These fuel quantity transmitters are direct replacements for the fuel quantity transmitter installed by the manufacturer when the aircraft was new. This saves hundreds of dollars in labor and kits and eliminates replacement of fuel quantity gages and wiring when not required. These fuel quantity transmitters are engineered to be compatible with the original fuel quantity gage and wiring which uses time proven technology and reliability. Our fuel quantity transmitter gaskets are made from dupont viton. Viton is the premier elastomer of the aerospace industry, offering flexibility and fuel resistance at all temperature extremes. Viton gaskets will not dry out or shrink like cork gaskets and do not harden with age like gaskets made from other elastomers. Our screw/seal assemblies have been engineered to eliminate chronic problems associated with fuel quantity transmitter hardware. Hex drive head screws made from stainless steel eliminate the corrosion process. The hex drive promotes ease of installation and eliminates the necessity for destructive down pressure during transmitter screw removal and installation. The stainless steel viton seal used on the hex drive screw provides a modern solution to leak prevention not available with the originally installed cork washer.

| Part No. | Description | Price Ea. |
|-------------|----------------------------|-----------|
| AS0426517-1 | Fuel Transmitter | . |
| AS0523557-1 | Fuel Transmitter | . |
| AS0726110-1 | Fuel Transmitter | . |
| ASS1588-1 | Gasket (Viton Fuel Trans.) | . |
| ASS1588-2 | Gasket (Viton Fuel Trans.) | . |
| ASS35010R10 | Screw/Seal Fuel Trans. | . |
| ASS35010R14 | Screw/Seal Fuel Trans. | . |

FUEL SELECTOR PLATE FOR CESSNAS



Before



After

This new fuel selector plate is billet machined and anodized, with the text engraved on the plate. It is an efficient one piece design which is easy to install & factory guaranteed. FAA-PMA approved.

| | | |
|---------------------------|-------------------|---|
| Cessna 172 - 37 Gals..... | P/N 05-00227..... | . |
| Cessna 170 - 37 Gals..... | P/N 05-00899..... | . |
| Cessna 172 - 36 Gals..... | P/N 05-00901..... | . |
| Cessna 180 - 55 Gals..... | P/N 05-00902..... | . |
| Cessna 180 - 60 Gals..... | P/N 05-00903..... | . |
| Cessna 180 - 79 Gals..... | P/N 05-00904..... | . |
| Cessna 172 - 84 Gals..... | P/N 05-00905..... | . |
| Cessna 182 - 55 Gals..... | P/N 05-00906..... | . |

CESSNA OIL ACCESS DOORS



This oil access door is equivalent to Cessna P/N 0752000-56 and fits Cessna 180s through 210s. More affordable than other replacement doors!!! Applicable to: 180-180G S/N 30000-18051445, 182-182G S/N 33000-1825844, 185-185C S/N 185-0001-185-0776, 205-205A S/N 205-0001-205-0577, 206-U206 S/N 206-0001-U206-0437, P206 S/N P206-0001-P206-0160, 210-210E S/N 210-57001-21058715
P/N 05-00451

SEAT RAIL WEAR GAUGE FOR CESSNA AIRCRAFT



For checking seat rail wear limits as per FAA A.D. 87-20-03, Effective 09/24-/1990 Seat Rail Directive The gauge is to be used for inspection of the Cessna seat rail wear. This gauge is designed to measure the actual radius wear near the seat stop holes. Notice the different sized steps in each corner.
P/N 05-04428

AP

REPLACEMENT PARTS FOR CESSNA

SEAT RAILS FOR CESSNA AIRCRAFT



McFarlane seat rails have only pilot holes drilled in the rail base allowing the installer to exactly match

the aircraft floor rivet pattern. McFarlane discovered while installing and developing our replacement seat rails that the seat rail attachment hole pattern was not consistent from aircraft to aircraft. Even small inconsistencies in the hole locations in the aircraft floor make installation of new seat rails very difficult. For this reason, all McFarlane seat rails have only a few smaller pilot attachment holes drilled at the factory. This allows the installer to precisely locate the attachment holes to match the holes in the aircraft floor. All special sized or machined attachment holes are factory machined to finish dimensions. It is necessary to install all required fasteners when seat rails are installed.

After studying countless worn and failed seat rails McFarlane's rails were designed with 15% more metal in critical areas. The result is more crack resistant, durability, strength and longer life.

Installation Tip: The aircraft floor is subject to corrosion from moisture under the seat rails, be sure to remove and treat any corrosion before installing the new seat rails.

| Description | Part No. | Price | Description | Part No. | Price |
|--------------|----------|-------|-------------|----------|-------|
| AS0411545-2 | 05-00346 | . | AS0511293-3 | 05-00367 | . |
| AS0411545-1 | 05-00345 | . | AS0511293-4 | 05-00368 | . |
| AS0411545-3 | 05-00347 | . | AS0511293-2 | 05-00366 | . |
| AS0411545-4 | 05-00348 | . | AS0511240-4 | 05-00354 | . |
| AS0410219-2 | 05-00328 | . | AS0511240-2 | 05-00352 | . |
| AS0410219-1 | 05-00327 | . | AS0511240-3 | 05-00353 | . |
| AS0410230-2 | 05-00329 | . | AS0511240-6 | 05-00356 | . |
| AS0410230-3 | 05-00341 | . | AS0511240-7 | 05-00357 | . |
| AS0410235-6 | 05-00344 | . | AS0511240-8 | 05-00358 | . |
| AS0410235-1 | 05-00342 | . | AS0511240-9 | 05-00359 | . |
| AS0410235-2 | 05-00343 | . | AS0511243-4 | 05-00362 | . |
| AS0511000-14 | 05-00331 | . | AS0511243-5 | 05-00363 | . |
| AS0511000-15 | 05-00332 | . | AS0511243-6 | 05-00364 | . |
| AS0511293-1 | 05-00365 | . | AS2414002-1 | 05-00414 | . |
| | | | AS2414002-2 | 05-00415 | . |

RUDDER PEDALS FOR CESSNA AIRCRAFT

COMPLETELY NEW RUDDER PEDAL -



- * Less money and longer life!
- * Bronze bushings at the pivot points resist wear and vibration for longer pedal life.
- * Precision cast heat treated aluminum alloy

- * Power coat finish for durability and corrosion protection.
- * FAA-PMA direct replacement for Cessna (Part #1460320-1)

Model AP2000-01 PN 05-04165.....

RE-BUSHED RUDDER PEDAL -

Model Numbers: 0760678-1, 0760678-2 and 1460320-1

- * FAA approved repair for magnesium rudder pedals.
- * Worn and elongated pedal holes are reamed and fitted with bushings for a longer life

- * Bronze bushings resist vibration and corrosion wear longer than the magnesium casting.
- * Fits most single engine Cessnas from 1963-1981, except for model 188

Model 0760678-1-RPN 05-04166 **Core**

Model 0760678-2-RPN 05-04167 **Core**

Model 1460320-1-RPN 05-04168 **Core**

Exchange your pedals before they are worn beyond repairable limits!

Max Large Hole Diameter - 0-0.405 inches

Max Small Hole Diameter < 0.275 inches

Receive Full Core Credit

Max Large Hole Diameter - 0.405 - 0.465 inches

Max Small Hole Diameter < 0.275 inches

Receive 50% Core Credit

Pedals worn beyond these limits are not eligible for core credit. Re-bushed pedals may be returned for core credit but must follow the same criteria.

150/152 SEAT RAIL SCREW KIT SR150-SCREW-KIT



This is screw kit specifically for the Cessna 150/152 seat rails. This #10 Structural Screw Kit contains all screws and nuts required to install four seat rails.

Kit Contains:

- 40 MS27039-1-08 Screw 10-32 x .531
- 2 MS27039-1-09 Screw 10-32 x .594
- 2 MS27039-1-17 Screw 10-32 x 1.094
- 40 MS21044N3 Nut, Nylon Lock

P/N 05-04107

UNIVERSAL SAFETY-FOOT



Having your seat slide backwards on take-off or landing is a moment of terror not soon forgotten. We are pleased to announce the new generation universal safety-foot, secondary seat stop, for both pilot and co-pilot seats.

The universal safety-foot prevents this from happening when the pins are not engaged in the seat rails.

The new universal safety-foot meets the requirements of the mandatory compliance, cessna issued, owned advisory SEBO7-5A dated 05/14/2007. This advisory requires all early model single engine Cessna's to have a secondary seat lock installed within 24 month from date of advisory.

The universal safety-foot was issued a "NO HAZARD INSTALLATION APPROVAL" by the FAA on 04/27/2006.

This approval allows the installation of the universal safety-foot by the owner/operator.

Due to the simple and unique design, the universal safety-foot can be installed in approximately 45 minutes, and in most cases, the seat do not have to be removed for the installation.

The universal safety-foot comes with clearly written instructions supplemented by installation pictures. P/N 05-04104.....

FUEL STRAINER KIT FOR CESSNA AIRCRAFT

FUEL STRAINER SEAL KIT. - Kit contains: Gasket and 3 O-Rings Approved for Cessna models: 180H*, J, K
P/N 05-01705.....

FS-KT-2 FUEL BOWL KIT (FAA-PMA) - Kit contains: 1 MC0756009-8 Gasket 1 MC0756008-1 Fuel bowl 1 MCM83248/1-010 O-ring 1 MCM83248/1-111 O-ring 1 MCM83248/1-138 O-ring 1 MC0756015-1 Washer 1 MCS1573-3 Nut
P/N 05-04425.....

FS-KT-3 FUEL STRAINER REBUILD KITS - Kit contains: (1) FS-KT-1 Gasket kit (1) MC0756008-1 Fuel bowl (1) MC0756015-1 Washer (1) MCS1573-3 Nut (1) MC0756010-11 Plunger (1) MC0756011-1 Standpipe (2) MCS145027 A7-032 Washer (1) 0756012-1 Spring
P/N 05-04426.....

FUEL STRAINER PLUNGER - MC0756010-11 * Special electro polished shaft for longer o-ring life.
* McFarlane's blue Viton rubber tip will outlast the original in any fuel!
P/N 05-04424.....

FUEL STRAINER ASSEMBLY - Kit contains: Gasket Kit, Fuel Bowl, 2Washers, Nut, Plunger, Standpipe, Spring, and Top Assembly. Approved for Cessna models: 182H*, J, K, L, M, N, P, Q, R
P/N 05-04111.....

FUEL STRAINER AND CABLE KIT - Kit contains: Gasket Kit, Fuel Bowl, 2 Washers, Nut, Plunger, Standpipe, Spring, Top Assembly, Filter, and Strainer Drain Cable Approved for Cessna models: F182P, Q
P/N 05-04112.....

FUEL STRAINER PARTS FOR CESSNA AIRCRAFT

FUEL STRAINER BOWL - Engineered to last! Manufactured using improved materials for added strength and gold anodized for corrosion resistance. Computer machined (not die cast).
P/N 05-01704.....

FUEL STRAINER STANDPIPE - The last one you will buy! Stainless steel, No more corrosion pits or stripped threads, Costs less!
P/N 05-00281.....

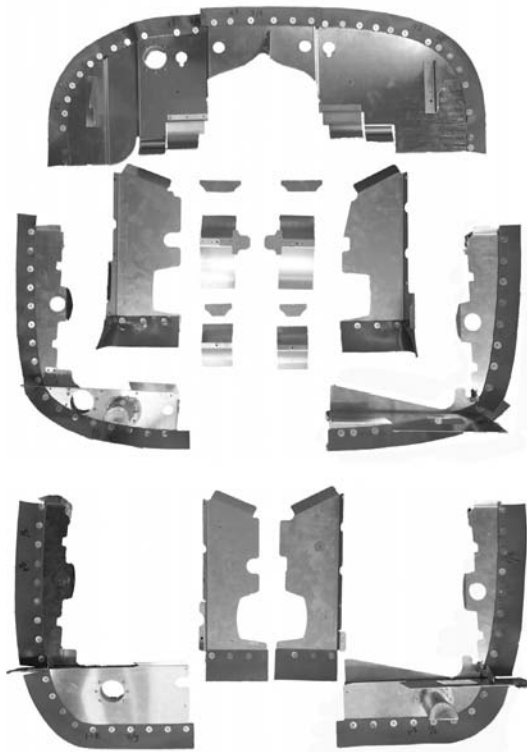
CESSNA MOTOR MOUNT BLOCK LOCK WASHER



The already improved motor mount lock washer is now even better. One side is embossed with a surface texture for improved locking strength and to make sure the washer does not slip while tightening. This helps prevent the lock tab from deforming or shearing during installation. It also helps keep the lock tab centered in the lock hole to minimize slack instead of allowing it to rotate to one side during installation. Features: * Up to four times the locking power for less! * FAA approved using stronger material than the original, allowing the standard washer to be eliminated. * Designed with six tabs instead of two. * Easier to use! * Cessna 180, 182, 185, 188, 205, 206, 207, 210, 310, 320, 411, and 414 model aircraft
P/N 05-01742.....

AP

CESSNA ENGINE BAFFLES



150 BAFFLES

| Baffle Number | Part No. | Price |
|-----------------------|-----------------|-------|
| AF0455000-4 | 05-03078 | |
| AF0450502-22 | 05-03079 | |
| AF0455000-11 | 05-03080 | |
| AF0450502-23 | 05-03081 | |
| AF0450502-42 | 05-01482 | |
| AF0450502-16 | 05-01483 | |
| AF0450322-2 | 05-01484 | |
| AF0455001-2 | 05-01485 | |
| AF0450210 | 05-01486 | |
| AF0450209 Seal | 05-01487 | |
| AF0450171 | 05-01488 | |
| AF0450502-19 | 05-01489 | |
| AF0450322-3 | 05-01490 | |
| AF5001-3 | 05-01491 | |
| 150 Baffle Set | 05-03270 | |

152 BAFFLES

| Baffle Number | Part No. | Price |
|-----------------------|-----------------|-------|
| AF0455012-7 | 05-03099 | |
| AF0455012-10 | 05-03101 | |
| AF0455012-11 | 05-03102 | |
| AF0455006-5 | 05-03103 | |
| AF0455018-21 | 05-03106 | |
| AF0455013-171 | 05-03107 | |
| AF0455018-27 | 05-03108 | |
| AF0455018-25 | 05-03109 | |
| AF0455018-19 | 05-03110 | |
| AF0455018-22 | 05-03111 | |
| AF0455021-1 | 05-03112 | |
| AF0455007-1 | 05-03113 | |
| AF0455015-1 | 05-03114 | |
| AF0455015-2 | 05-03115 | |
| AF0455013-23 | 05-03116 | |
| AF0455013-17 | 05-03117 | |
| AF0455013-19 | 05-03118 | |
| AF0455013-14 | 05-03119 | |
| AF0455012-1 | 05-03120 | |
| 152 Baffle Set | 05-03273 | |

170B, 172 EARLY MODEL BAFFLES

| Baffle Number | Part No. | Price |
|---------------|----------|-------|
| AF0550163 | 05-01492 | |
| AF0550164-8 | 05-01493 | |
| AF0450322-3 | 05-01494 | |
| AF0550164-10 | 05-01495 | |

170B, 172 EARLY MODEL Baffles Cont.

| | | |
|---|-----------------|--|
| AF0450209 | 05-01496 | |
| AF0550165-2 | 05-01505 | |
| AF0550111-7 | 05-01506 | |
| AF0450210 | 05-01507 | |
| AF0550164-7 | 05-01508 | |
| AF0450322-2 | 05-01509 | |
| AF0450171 | 05-01510 | |
| AF0550164-11 | 05-01511 | |
| AF0550165-6 | 05-01512 | |
| AF0550117 | 05-01508 | |
| AF0550111-4 | 05-03062 | |
| 170B, 172 Early Model Baffle Set | 05-03266 | |

172 I, K, L BAFFLES

| Baffle Number | Part No. | Price |
|-------------------------------|-----------------|-------|
| AF0555206-1 | 05-03082 | |
| AF0555204-1 | 05-03083 | |
| AF0555203-1 | 05-03084 | |
| AF0555199-2 | 05-03085 | |
| AF0555199-1 | 05-03087 | |
| AF0555205-1 | 05-03088 | |
| AF0555202-1 | 05-03089 | |
| AF0555207-1 | 05-03090 | |
| 172 I, K, L Baffle Set | 05-03271 | |

172M BAFFLES

| Baffle Number | Part No. | Price |
|------------------------|-----------------|-------|
| AF0555206-12 | 05-03091 | |
| AF0555204-5 | 05-03092 | |
| AF0555211-7 | 05-03094 | |
| AF0555216-202 | 05-03095 | |
| AF0555212-1 | 05-03096 | |
| AF0555217-1 | 05-03097 | |
| AF0555213-5 | 05-03038 | |
| AF0555214-7 | 05-03041 | |
| 172M Baffle Set | 05-03272 | |

172N BAFFLES

| Baffle Number | Part No. | Price |
|------------------------|-----------------|-------|
| AF0555298-3 | 05-03121 | |
| AF0555233-1 | 05-03122 | |
| AF0555235-1 | 05-03123 | |
| AF055524-1 | 05-03124 | |
| AF0555259-1 | 05-03125 | |
| AF0555213-5 | 05-03038 | |
| AF0555250-9 | 05-03039 | |
| AF0555214-7 | 05-03041 | |
| AF0555259-14 | 05-03043 | |
| 172N Baffle Set | 05-03274 | |

172P BAFFLES

| Baffle Number | Part No. | Price |
|------------------------|-----------------|-------|
| AF0555309-1 | 05-03035 | |
| AF0555318-1 | 05-03037 | |
| AF0555213-5 | 05-03038 | |
| AF0555250-9 | 05-03039 | |
| AF0555211-9 | 05-03040 | |
| AF0555214-7 | 05-03041 | |
| AF0555307-1 | 05-03042 | |
| AF0555259-14 | 05-03043 | |
| AF0555215-4 | 05-03126 | |
| 172P Baffle Set | 05-03275 | |

172R BAFFLES

| Baffle Number | Part No. | Price |
|---------------|----------|-------|
| AF1557147-17 | 05-03238 | |
| AF1557173-1 | 05-03239 | |
| AF055271-1 | 05-03240 | |
| AF1557147-15 | 05-03241 | |
| AF1457018-22 | 05-03242 | |
| AF1457018-18 | 05-03243 | |
| AF1457012-1 | 05-03244 | |
| AF0555272K201 | 05-03245 | |
| AF1557012-10 | 05-03246 | |
| AF1557011-3 | 05-03247 | |
| AF1557011-4 | 05-03248 | |
| AF1557012-11 | 05-03249 | |
| AF1457146-12 | 05-03250 | |
| AF1457119-1 | 05-03251 | |
| AF1557140-6 | 05-03252 | |
| AF1557101-11 | 05-03253 | |
| AF0555228-4 | 05-03254 | |
| AF0555228-2 | 05-03255 | |
| AF0555228-6 | 05-03256 | |

AP

CESSNA ENGINE BAFFLES

172R Baffles Cont.

| | |
|-----------------------------|-----------------|
| AF0555228-5..... | 05-03257 |
| AF0555228-3..... | 05-03258 |
| AF1557101-13..... | 05-03259 |
| AF1557146-11..... | 05-03260 |
| AF0555272K200..... | 05-03261 |
| AF1557012-14..... | 05-03262 |
| AF1557012-11..... | 05-03263 |
| AF1557101-11..... | 05-03264 |
| AF1557149-7..... | 05-03265 |
| 172R Baffle Set..... | 05-03286 |

177 BAFFLES

| Baffle Number | Part No. | Price |
|----------------------------|-----------------|-------|
| AF1755004-1..... | 05-03147 | |
| AF1755007-1..... | 05-03148 | |
| AF1755009-1..... | 05-03149 | |
| AF1755005-2..... | 05-03150 | |
| AF1755010-1..... | 05-03151 | |
| AF1755005-1..... | 05-03152 | |
| AF1755008-1..... | 05-03153 | |
| AF1755003-1..... | 05-03154 | |
| 177 Baffle Set..... | 05-03279 | |

180-182 BAFFLES

| Baffle Number | Part No. | Price |
|--------------------------------|-----------------|-------|
| AF0750128-20..... | 05-01528 | |
| AF0750128-19..... | 05-01530 | |
| AF0750128-21..... | 05-01531 | |
| AF0750128-23..... | 05-01532 | |
| AF0750128-22..... | 05-01533 | |
| AF0750128..... | 05-01550 | |
| AF0750117-30..... | 05-01552 | |
| AF0750135-4..... | 05-01561 | |
| AF0750135-1..... | 05-01563 | |
| AF0851700-96..... | 05-01574 | |
| AF0750135-3..... | 05-01585 | |
| 180-182 Baffle Set..... | 05-03278 | |

180 SERIES OIL COOLER BAFFLES

| Baffle Number | Part No. | Price |
|-------------------|----------|-------|
| AF075052-1..... | 05-01541 | |
| AF0755050-10..... | 05-01542 | |
| AF0755050-11..... | 05-01543 | |
| AF0750148-1..... | 05-01544 | |
| AF0755002-3..... | 05-01546 | |
| AF0755002-31..... | 05-01547 | |
| AF0750152-3..... | 05-01590 | |
| AF0750152-2..... | 05-01592 | |

182 LATE MODEL BAFFLES

| Baffle Number | Part No. | Price |
|---------------------------------------|-----------------|-------|
| AF0755001-39..... | 05-03155 | |
| AF0755004-6..... | 05-03156 | |
| AF07550404-4..... | 05-03157 | |
| AF0755040-2..... | 05-03158 | |
| AF0755004-9..... | 05-03159 | |
| AF0755004-2..... | 05-03160 | |
| AF0755004-3..... | 05-03161 | |
| AF0755040-3..... | 05-03162 | |
| AF0755007-1..... | 05-03163 | |
| AF0755040-1..... | 05-03164 | |
| AF1250961-5..... | 05-03165 | |
| AF1250961-6..... | 05-03166 | |
| AF1250961-7..... | 05-03167 | |
| AF0755005-9..... | 05-03168 | |
| AF0750135-4..... | 05-01561 | |
| AF0750135-1..... | 05-01563 | |
| AF0750135-3..... | 05-01585 | |
| 182 Late Model Baffle Set..... | 05-03277 | |

182 LATE MODEL OIL COOLER BAFFLES

| Baffle Number | Part No. | Price |
|-------------------|----------|-------|
| AF0755011-1..... | 05-03169 | |
| AF0755001-30..... | 05-03170 | |
| AF0755012-2..... | 05-03171 | |
| AF0750152-1..... | 05-03172 | |
| AF0755010-1..... | 05-03173 | |
| AF0755001-24..... | 05-03174 | |
| AF0755009-1..... | 05-03175 | |
| AF0750152-2..... | 05-01592 | |

185 BAFFLES

| Baffle Number | Part No. | Price |
|-------------------|----------|-------|
| AF0750128-66..... | 05-01427 | |
| AF0750128-97..... | 05-01529 | |
| AF0750128-19..... | 05-01530 | |

185 Baffles Cont.

| | |
|----------------------------|-----------------|
| AF0750128-21..... | 05-01531 |
| AF0750128-23..... | 05-01532 |
| AF0851700-96..... | 05-01574 |
| AF0750117-31..... | 05-01582 |
| AF07501282-2..... | 05-01592 |
| AF0750135-4..... | 05-01561 |
| AF0750135-3..... | 05-03177 |
| AF0750117-30..... | 05-01552 |
| AF1250134-2..... | 05-03179 |
| AF0755050-15..... | 05-03180 |
| AF0755002-2..... | 05-03181 |
| AF050128-76..... | 05-03182 |
| 185 Baffle Set..... | 05-03276 |

C-200 EARLY MODEL OIL COOLER BAFFLES

| Baffle Number | Part No. | Price |
|------------------|----------|-------|
| AF0750152-3..... | 05-01554 | |
| AF0750152-2..... | 05-01556 | |

206 EARLY MODEL BAFFLES

| Baffle Number | Part No. | Price |
|--|-----------------|-------|
| AF0750135-4..... | 05-01561 | |
| AF0750135-1..... | 05-01563 | |
| AF0750117-31..... | 05-01582 | |
| AF1250105-1..... | 05-03183 | |
| AF1250100-18..... | 05-03418 | |
| AF1250100-8..... | 05-03185 | |
| AF0851700-96..... | 05-01538 | |
| AF1250135-3..... | 05-03187 | |
| AF1250137-1..... | 05-03188 | |
| AF1250927-1..... | 05-03190 | |
| AF1250100-15..... | 05-03191 | |
| AF1250100-41..... | 05-03192 | |
| AF1250100-12..... | 05-03193 | |
| AF1250105-2..... | 05-03194 | |
| 206 Early Model Baffle Set..... | 05-03280 | |

206 LATE MODEL BAFFLES

| Baffle Number | Part No. | Price |
|---------------------------------------|-----------------|-------|
| AF1255008-22..... | 05-01560 | |
| AF0750135-4..... | 05-01561 | |
| AF750135-1..... | 05-01563 | |
| AF1255032-4..... | 05-01572 | |
| AF0851700-96..... | 05-01574 | |
| AF1255032-2..... | 05-01575 | |
| AF1255025-1..... | 05-01576 | |
| AF1255010-10..... | 05-01577 | |
| AF1255028-1..... | 05-01578 | |
| AF1255011-5..... | 05-01579 | |
| AF1255008-12..... | 05-01580 | |
| AF1255008-20..... | 05-01581 | |
| AF0750117-31..... | 05-01582 | |
| AF1255032-3..... | 05-01584 | |
| AF0750135-3..... | 05-01585 | |
| AF1255032-1..... | 05-01587 | |
| AF1255009-8..... | 05-01588 | |
| AF1250966-1..... | 05-01589 | |
| AF0750152-3..... | 05-01590 | |
| AF1255011-51..... | 05-03232 | |
| AF1255020-1..... | 05-03233 | |
| AF1250134-2..... | 05-03234 | |
| AF1255026-1..... | 05-03235 | |
| AF1250966-3..... | 05-03236 | |
| AF1250961-5..... | 05-03237 | |
| 206 Late Model Baffle Set..... | 05-03285 | |

207 EARLY MODEL BAFFLES

| Baffle Number | Part No. | Price |
|--|-----------------|-------|
| AF0750135-3..... | 05-01540 | |
| AF0750135-4..... | 05-01561 | |
| AF0750135-1..... | 05-01563 | |
| AF0851700-96..... | 05-01574 | |
| AF0750117-31..... | 05-01582 | |
| AF1250105-2..... | 05-03195 | |
| AF1250100-12..... | 05-03196 | |
| AF1250100-41..... | 05-03197 | |
| AF1250100-15..... | 05-03198 | |
| AF1250927-1..... | 05-03199 | |
| AF1250137-1..... | 05-03201 | |
| AF1250135-3..... | 05-03202 | |
| AF1250100-8..... | 05-03203 | |
| AF1250100-18..... | 05-03418 | |
| AF1250105-1..... | 05-03205 | |
| 207 Early Model Baffle Set..... | 05-03281 | |

All baffles are bare 6061-T6 aluminum unless the powder coating option is chosen. The powder coating finish is a black and grey hammertone.

AP

CESSNA INTERCYLINDER BAFFLES

CESSNA ENGINE BAFFLES CONT.

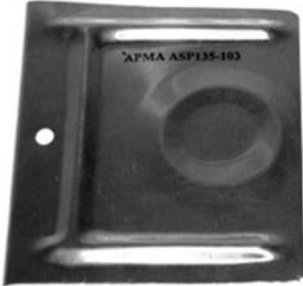
210 EARLY MODEL BAFFLES

| Baffle Number | Part No. | Price |
|----------------------------|----------|-------|
| AF0750135-4 | 05-01561 | |
| AF0750135-1 | 05-01563 | |
| AF0851700-96 | 05-01574 | |
| AF0750117-31 | 05-01582 | |
| AF0750135-3 | 05-01585 | |
| AF1250105-1 | 05-03068 | |
| AF1250719-1 | 05-03069 | |
| AF1250100-23 | 05-03070 | |
| AF1250100-8 | 05-03071 | |
| AF1250135-3 | 05-03072 | |
| AF1250100-15 | 05-03073 | |
| AF1250100-41 | 05-03075 | |
| AF1250100-12 | 05-03076 | |
| AF1250105-2 | 05-03077 | |
| 210 Early Model Baffle Set | 05-03269 | |


206, 207, 210 TURBO EARLY MODEL BAFFLES


| Baffle Number | Part No. | Price |
|------------------------------|----------|-------|
| AF0750117-31 | 05-01534 | |
| AF0851700-96 | 05-01538 | |
| AF0750152-3 | 05-01590 | |
| AF1250105-1 | 05-03206 | |
| AF1250829-12 | 05-03207 | |
| AF1250881-7 | 05-03208 | |
| AF1250135-3 | 05-03209 | |
| AF1250829-11 | 05-03210 | |
| AF1250105-2 | 05-03211 | |
| AF1250829-13 | 05-03212 | |
| AF1250870 | 05-03213 | |
| AF1250828-1 | 05-03214 | |
| AF1250828-2 | 05-03215 | |
| AF1250868-1 | 05-03216 | |
| 206,207,210 Turbo Baffle Set | 05-03282 | |


INTERCYLINDER BAFFLES FOR TELEDYNE SIX CYLINDER ENGINES

| Ref. No. | Replaces Cessna P/N | Model | Serial Number | Qty Per A/C | | |
|---|---------------------|---------------------------------|----------------------------|-------------|--|--|
| ASP135-103 | 750135-3 | 180,A,B,C,D,E | 32151 thru 18051183 | 2 | | |
| | | 180F,G,H,J,K,L | 18051184 thru 18053203 | 3 | | |
|  | | 182E | 33000 thru 18254423 | 2 | | |
| | | 182F,G,H,J,K,L,M,N,P* | 18254424 thru 18262465 | 1 | | |
| | | 182P*,Q,R | 18262466 thru 18268615 | 2 | | |
| | | 188,A,B | 188-0001 thru 18802348 | 2 | | |
| | | A188,A,B | 188-0001 thru 18803968T | 2 | | |
| | | T188C | T18803297T thru T18803968T | 2 | | |
| | | 205,A | 205-0001 thru 205-0577 | 1 | | |
| | | 206 | 206-0001 thru 206-0275 | 2 | | |
| | | U206,A,B,C,D,E,F,G | U206-0276 thru U20607020 | 2 | | |
| | | P206,A,B,C,D,E | P206-0001 thru P20600647 | 2 | | |
| | | 207,A | 20700001 thru 20700788 | 2 | | |
| | | 210,A,B,C,D,E,F,G,H,J,K,L,M,N,R | 57001 thru 21065009 | 2 | | |
| | | 310,B,C,D,E,F,G,H,I,J,K,L,N | 35000 thru 310N0198 | 2 | | |
| | | 320,A,B,C | 320-0001 thru 320C0073 | 2 | | |
| | | P/N 05-02135 | | | | |

AP

| Ref. No. | Replaces Cessna P/N | Model | Serial Number | Qty Per A/C | | |
|---|----------------------|---------------------------------|----------------------------|-------------|--|--|
| ASP135-104 | 0750135-4, 0750135-8 | 180* | 32151 thru 32661 | 2 | | |
| | | 180A,B,C,D,E | 32662 thru 18051183 | 1 | | |
|  | | 180F,G,H,I,K | 18051184 thru 18053203 | 2 | | |
| | | 182 | 33060 thru 33482 | 2 | | |
| | | 182A,B,C,D,E,F,G,H,J,K,L,M,N,P* | 33483 thru 18262465 | 1 | | |
| | | 182P*,Q,R | 18262466 thru 18268615 | 2 | | |
| | | 188,A,B | 188-0001 thru 18802348 | 2 | | |
| | | A188,A,B | 188-0001 thru 18803968T | 2 | | |
| | | T188C | T18803297T thru T18803968T | 2 | | |
| | | 205,A | 205-0001 thru 205-0577 | 2 | | |
| | | 206 | 206-0001 thru 206-0275 | 2 | | |
| | | U206,A,B,C,D,E,F,G | U206-0276 thru U20607020 | 2 | | |
| | | P206,A,B,C,D,E | P206-0001 thru P20600647 | 2 | | |
| | | 207,A | 20700001 thru 20700788 | 2 | | |
| | | 210,A,B,C,D,E,F,G,H,J,K,L,M,N,R | 57001 thru 21065009 | 2 | | |
| | | 310,B,C,D,E,F,G,H,I,J,K,L,N | 35000 thru 310N0198 | 2 | | |
| | | P/N 05-02136 | | | | |

| Ref. No. | Replaces Cessna P/N | Model | Serial Number | Qty Per A/C | | |
|---|---------------------|---------------------|------------------------|-------------|--|--|
| ASP834-101 | 0851834-1 | 310P,Q,R/T310,P,Q,R | 310P0001 thru 310R2140 | 6 | | |
| | | 320D,E,F | 320D0001 thru 320F0045 | 6 | | |
|  | | 335 | 335-0001 thru 335-0065 | 6 | | |
| | | 340,A | 340-0001 thru 340A1817 | 6 | | |
| | | 401,A,B | 401-0001 thru 401B0300 | 6 | | |
| | | 402,A,B,C | 402-0001 and On | 6 | | |
| | | 414,A | 414-0001 and On | 6 | | |
| | | P/N 05-02137 | | | | |

| Ref. No. | Replaces Cessna P/N | Model | Serial Number | Qty Per A/C | | |
|---|---------------------|---------------------|------------------------|-------------|--|--|
| ASP834-102 | 0851834-2 | 310P,Q,R/T310,P,Q,R | 310P0001 thru 310R2140 | 2 | | |
| | | 320D,E,F | 320D0001 thru 320F0045 | 2 | | |
|  | | 335 | 335-0001 thru 335-0065 | 2 | | |
| | | 340,A | 340-0001 thru 340A1817 | 2 | | |
| | | 401,A,B | 401-0001 thru 401B0300 | 2 | | |
| | | 402,A,B,C | 402-0001 and On | 2 | | |
| | | 414,A | 414-0001 and On | 2 | | |
| | | P/N 05-02138 | | | | |

CESSNA FIBERGLASS REPLACEMENT PARTS

CESSNA 105/152

What Makes These Composite Parts Such An Excellent Value?

- * Stronger than factory originals with no weight increase.
- * Easily repaired with locally available fiberglass kits if ever damaged.
- * Exact replacements of original equipment means easy installation.
- * Money back guarantee if not completely satisfied!




STRUT CUFFS

Here's an unbeatable item for renovating your Cessna; a set of replacement strut cuffs. Order just one cuff to replace a damaged original, or get a set of four for a complete replacement.

| Photo | Description | Part No. | Price |
|--|--|----------|-------|
|  | 150/152 Strut Cuff Upper RH (SA-0522150-4) | 05-03703 | . |
|  | 150/152 Strut Cuff Upper LH (SA-0522150-3) | 05-03702 | . |
|  | 150/152 Strut Cuff Lower RH (SA-0421002-2) | 05-03701 | . |
| ---- | 150/152 Strut Cuff Lower LH (SA-0421002-1) | 05-03699 | . |
|  | 150/152 Aerobat Strut Cuff Upper RH (SA-0421002-3) | 05-03706 | . |
|  | 150/152 Aerobat Strut Cuff Upper LH (SA-0421002-4) | 05-03707 | . |
|  | 150/152 Aerobat Strut Cuff Lower RH (SA-0522150-6) | 05-03704 | . |
|  | 150/152 Aerobat Strut Cuff Lower LH (SA-0522150-7) | 05-03705 | . |

ELEVATORS & STABILIZERS

Here are some of our most popular items. These tips take a good deal of stress in just normal flying circumstances. They're also frequent victims of ramp rash. The original plastic simply can't stand up to the task as well as fiberglass replacements from Stene Aviation. Plus, if these parts ever do withstand damage, they're easily repaired with readily available fiberglass repair kits from your local automotive parts store.

| Photo | Description | Part No. | Price |
|---|--|----------|-------|
|  | 150 Horizontal Stabilizer Tip 1959-'63 (SA-0430004-6) | 05-03710 | . |
|  | 150/152 Horizontal Stabilizer Tip 1964&on (SA-0430004-11) | 05-03711 | . |
|  | 150/152 Elevator Tips (left/right) 1964&on (SA-0430004-10) | 05-03709 | . |
| ---- | 150/152 Elevator Tips (left/right) 1959-'63 (SA-0430004-5) | 05-03708 | . |

GEAR LEG AND BRAKE FAIRINGS


These are excellent items for replacing worn plastic originals. Your fiberglass replacements will be more durable with an improved finish over the original plastics.

Photo

| Photo | Description | Part No. | Price |
|---|--|----------|-------|
|  | 150/152 Upper Gear Leg 1971&on RH (SA-0441217-14) | 05-03731 | . |
|  | 150/152 Upper Gear Leg 1971&on LH (SA-0441217-15) | 05-03732 | . |
| ---- | 150/152 Right Brake Fairing 1974&on (SA-0441227-2) | 05-03734 | . |
| ---- | 150/152 Left Brake Fairing 1974&on (SA-0441227-1) | 05-03733 | . |



RUDDER & VERTICAL FIN CAPS

These parts are a snap to replace on most planes. Please note, indicate if you have a straight tail or a swept tail. It is also important to let us know if your fin cap needs to accommodate a strobe or beacon, and if so, if the light is front-mounted or center-mounted.

| Photo | Description | Part No. | Price |
|---|--|----------|-------|
|  | 150 Vertical Fin Cap 1964-1965 (SA-0430004-9) | 05-03713 | . |
|  | 150 Vertical Fin Cap (no beacon) 1966-'74 (SA-0431013-3) | 05-03715 | . |
| ---- | 150 Vertical Fin Cap (small beacon) 1966-'74 (SA-0431017-1) | 05-03714 | . |
|  | 150/152 Vertical Fin Cap (small beacon) 1975&on (SA-0430011-1) | 05-03716 | . |
| ---- | 150 Rudder Top 1959-1963 (SA-0430004-2) | 05-03717 | . |
| ---- | 150 Rudder Top 1964-1965 (SA-0430004-8) | 05-03718 | . |
|  | 150/152 Rudder Top 1966-1974 (SA-0431013-1) | 05-03719 | . |
|  | 150 Rudder Top 1975&on (SA-0430011-2) | 05-03720 | . |
| ---- | 150 Rudder Bottom 1959-1965 (SA-0430004-1) | 05-03721 | . |
|  | 150 Rudder Bottom 1966&on (SA-0431005-1) | 05-03722 | . |




WING & DORSAL TIPS

Wing tips are a common victim of hanger and ramp rash. Maybe you thought the plane was going to clear those doors as you wheeled it back into the hanger...the first indication that you were wrong was that grating sound as the wing-tip met metal. Here's the solution: replacement fiberglass wing-tips from Stene Aviation.

| Photo | Description | Part No. | Price |
|---|---|----------|-------|
|  | 150/152 Wing-Tip (small droop) LH (SA-0523565-29) | 05-03726 | . |
|  | 150/152 Wing-Tip (small droop) RH (SA-0523565-30) | 05-03727 | . |
| ---- | 150/152 Std. Small Wing Tip (SA-0430008-3) | 05-03725 | . |
|  | 150 Dorsal Fin 1959-'65 (SA-0430004-4) | 05-03723 | . |
| ---- | 150/152 Dorsal Tip 1966&on (SA-0431024-1) | 05-03724 | . |

WHEEL PANTS

Replace your original plastic wheel pants with high quality and durable fiberglass replacements. All wheel pants come with a 2" access plug for checking tire pressure. Original hardware is required for mounting.

| Photo | Description | Part No. | Price |
|---|--|----------|-------|
|  | 150/152 Wheel Pant 1971-'74 RH (SA-0541223-16) | 05-03728 | . |
|  | 150/152 Wheel Pant 1971-'74 LH (SA-0541223-17) | 05-03729 | . |
|  | 150/152 Nose Wheel Pant 1974&on (SA-0543079-3) | 05-03730 | . |

AP

CESSNA FIBERGLASS REPLACEMENT PARTS

CESSNA 170/172/175





ELEVATORS & STABILIZERS

Here are some of our most popular items. These tips take a good deal of stress in just normal flying circumstances. They're also frequent victims of ramp rash. The original high impact plastic simply can't stand up to the task as well as fiberglass replacements from Stene Aviation. Plus, if these parts ever do withstand damage, they're easily repaired with readily available fiberglass repair kits from you local automotive parts store.

| Photo | Description | Part No. | Price |
|---|--|----------|-------|
| ---- | 170/172/175 Stabilator Tip (All) (SA-0532001-93) | 05-03744 | . |
|  | 172/175 Horizontal Tip Straight Tail (SA-0532001-61) | 05-03743 | . |
|  | 172 Elevator Tip 1963&on LH (SA-0532001-94) | 05-03742 | . |
|  | 172 Elevator Tip 1963&on RH (SA-0532001-100) | 05-03741 | . |
|  | 172/175 Elevator Tip Straight Tail (SA-0532001-62) | 05-03740 | . |





STRUT CUFFS

Here's an unbeatable item for renovating your Cessna; a set of replacement strut cuffs. Order just one cuff to replace a damaged original, or get a set of four for a complete replacement.

| Photo | Description | Part No. | Price |
|---|---|----------|-------|
|  | 172 Strut Cuff Upper 1973&on RH (SA-0523047-2) | 05-03739 | . |
|  | 172 Strut Cuff Upper 1973&on LH (SA-0523047-1) | 05-03738 | . |
|  | 172 Strut Cuff Lower (all models) RH (SA-0522150-2) | 05-03736 | . |
|  | 172 Strut Cuff Lower (all models) LH (SA-0522150-1) | 05-03735 | . |




GEAR LEG AND BRAKE FAIRINGS

These are excellent items for replacing worn plastic originals. Your fiberglass replacements will be more durable with an improved finish over the original plastics.

| Photo | Description | Part No. | Price |
|---|--|----------|-------|
|  | 172 Upper Gear Leg 1971&on RH (SA-1741005-240) | 05-03767 | . |
|  | 172 Upper Gear Leg 1971&on LH (SA-1741005-239) | 05-03766 | . |
|  | 172 Brake Fairing 1974&on RH (SA-0541224-1) | 05-03768 | . |
|  | 172 Brake Fairing 1974&on LH (SA-0541224-2) | 05-03769 | . |





WHEEL PANTS

Replace your original plastic wheel pants with high quality and durable fiberglass replacements. All wheel pants come with a 2" access plug for checking tire pressure. Original hardware is required for mounting.

| Photo | Description | Part No. | Price |
|---|--|----------|-------|
|  | 172 Wheel Pant 1974&on RH (SA-0541223-16) | 05-03728 | . |
|  | 172 Wheel Pant 1974&on LH (SA-0541223-17) | 05-03729 | . |
|  | 172 Nose Wheel Pant 1974&on (SA-0543079-3) | 05-03730 | . |

RUDDER & VERTICAL FIN CAPS

These parts are a snap to replace on most planes. Please note, indicate if you have a straight tail or a swept tail. It is also important to let us know if your fin cap needs to accommodate a strobe or beacon, and if so, if the light is front-mounted or center-mounted.

| Photo | Description | Part No. | Price |
|---|---|----------|-------|
| ---- | 172 Vertical Fin (no beacon) 1956-'59 (SA-0531001-36) | 05-03745 | . |
| ---- | 172 Vertical Fin (large beacon) 1956-'59 (SA-0531004-3) | 05-03746 | . |
|  | 172 Vertical Fin (no beacon) 1960-'68 (SA-0531006-33) | 05-03747 | . |
| ---- | 172 Vertical Fin (small beacon) 1960-'68 (SA-0533009-1) | 05-03752 | . |
|  | 172 Vertical Fin (small beacon) 1960-'68 (SA-0531009-1) | 05-03748 | . |
| ---- | 172 Vertical Fin (small beacon) 1969-'75 (SA-0531013-1) | 05-03749 | . |
| ---- | 172 Rudder Top 1976-'85 (SA-0531006-112) | 05-03753 | . |
| ---- | 172 Rudder Top 1997&on (SA-0533155-2) | 05-03754 | . |
|  | 172 Vertical Fin (small beacon) 1976&on (SA-0531003-1) | 05-03750 | . |
|  | 172 Rudder Top 1960-'68 (SA-0531006-34) | 05-03751 | . |
|  | 172 Rudder Bottom 1960-'68 (SA-0531006-35) | 05-03756 | . |
| ---- | 172/175 Rudder Bottom Straight Tail (SA-0531104) | 05-03755 | . |
| ---- | 172 Rudder Bottom 1969-'80 (SA-0531006-80) | 05-03757 | . |

WING & DORSAL TIPS

Wing tips are a common victim of hanger and ramp rash. Maybe you thought the plane was going to clear those doors as you wheeled it back into the hanger...the first indication that you were wrong was that grating sound as the wing tip met metal. Here's the solution: replacement fiberglass wing tips from Stene Aviation.

| Photo | Description | Part No. | Price |
|---|--|----------|-------|
|  | 172 Wing Tip (small droop) 1968-'72 LH (SA-0523565-29) | 05-03726 | . |
|  | 172 Wing Tip (small droop) 1968-'72 RH (SA-0523565-30) | 05-03727 | . |
|  | 172 Wing Tip (small droop) 1973&on LH (SA-0723200-5) | 05-03762 | . |
|  | 172 Wing Tip (small droop) 1973&on RH (SA-0723200-6) | 05-03764 | . |
|  | 172 Mid-Dorsal (SA-0531012-2) | 05-03759 | . |
|  | 172 Dorsal Tip 1972&on (SA-0531020-1) | 05-03760 | . |
|  | Cable Covers (SA-0530011-2) | 05-03770 | . |



CESSNA FIBERGLASS REPLACEMENT PARTS

CESSNA 177/180/185/188

CESSNA FIBERGLASS REPLACEMENT PARTS FOR 177

What Makes These Composite Parts Such An Excellent Value?

- * Stronger than factory originals with no weight increase.
- * Easily repaired with locally available fiberglass kits if ever damaged.
- * Exact replacements of original equipment means easy installation.
- * Money back guarantee if not completely satisfied!

STABILATOR TIPS







Here are some of our most popular items. These tips take a good deal of stress in just normal flying circumstances. They're also frequent victims of ramp rash. The original plastic simply can't stand up to the task as well as fiberglass replacements from Stene Aviation. Plus, if these parts ever do withstand damage, they're easily repaired with readily available fiberglass repair kits from your local automotive parts store.

| Photo | Description | Part No. | Price |
|-------|---|----------|-------|
| ---- | 177 Stabilator Tip (All) (SA-1732024-1) | 05-03744 | . |

RUDDER & VERTICAL TOPS

| Photo | Description | Part No. | Price |
|-------|---------------------------------------|----------|-------|
| ---- | 177 Rudder Top (All) (SA-1733009-2) | 05-03841 | . |
| ---- | 177 Vertical Top (All) (SA-1731009-4) | 05-03840 | . |

GEAR LEG FAIRINGS

| Photo | Description | Part No. | Price |
|---|--|----------|-------|
|  | 177 Upper Gear Leg (All) RH (SA-1741005-44) | 05-03846 | . |
|  | 177 Upper Gear Leg (All) LH (SA-1741005-43) | 05-03845 | . |
|  | 177 Brake Fairings 1972-'74 RH (SA-0741634-14) | 05-03848 | . |
|  | 177 Brake Fairings 1972-'74 LH (SA-0741634-13) | 05-03847 | . |
|  | 177 Brake Fairings 1975&on RH (SA-0741641-10) | 05-03849 | . |
|  | 177 Brake Fairings 1975&on LH (SA-0741641-11) | 05-03850 | . |

WHEEL PANTS


Replace your original plastic wheel pants with high quality and durable fiberglass replacements. All wheel pants come with a 2" access plug for checking tire pressure. Original hardware is required for mounting.

| Photo | Description | Part No. | Price |
|---|--|----------|-------|
|  | 177 Wheel Pant 1975&on RH (SA-0541223-16) | 05-03728 | . |
|  | 177 Wheel Pant 1975&on LH (SA-0541223-17) | 05-03729 | . |
|  | 177 Nose Wheel Pant 1975&on (SA-0543079-3) | 05-03730 | . |

CESSNA FIBERGLASS REPLACEMENT PARTS FOR 180/185

ELEVATORS & STABILIZERS



Here are some of our most popular items. These tips take a good deal of stress in just normal flying circumstances. They're also frequent victims of ramp rash. The original plastic simply can't stand up to the task as well as fiberglass replacements from Stene Aviation. Plus, if these parts ever do withstand damage, they're easily repaired with readily available fiberglass repair kits from your local automotive parts store.

| Photo | Description | Part No. | Price |
|---|--|----------|-------|
|  | 180&185(all) Horizontal Tip (SA-0732613-1) | 05-03779 | . |

180/185 CONT.


STRUT CUFFS

Here's an unbeatable item for renovating your Cessna; a set of replacement strut cuffs. Order just one cuff to replace a damaged original, or get a set of four for a complete replacement.

| Photo | Description | Part No. | Price |
|---|--|----------|-------|
|  | 180 Strut Cuff Upper RH (SA-0723605-4) | 05-03774 | . |
|  | 180 Strut Cuff Upper LH (SA-0723605-3) | 05-03773 | . |
| ---- | 180 Strut Cuff Lower RH (SA-0723605-2) | 05-03772 | . |
| ---- | 180 Strut Cuff Lower LH (SA-0723605-1) | 05-03771 | . |

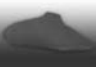

RUDDER & VERTICAL FIN CAPS

These parts are a snap to replace on most planes. Please note, indicate if you have a straight tail or a swept tail. It is also important to let us know if your fin cap needs to accommodate a strobe or beacon, and if so, if the light is front-mounted or center-mounted.

| Photo | Description | Part No. | Price |
|--|---|----------|-------|
| ---- | 180 (all) Vertical Fin (no beacon) (SA-0731000-200) | 05-03781 | . |
| ---- | 180 (all) Vertical Fin (small beacon) (SA-0731019-1) | 05-03782 | . |
| ---- | 180 (large tail)/185 (all) Vertical Fin (sm. beacon) (SA-0731019-2) | 05-03787 | . |
| ---- | 185 Vertical Fin (no beacon) (SA-0742025-1) | 05-03788 | . |
| ---- | 180 (all) Vertical Fin (large beacon) (SA-0700031-2) | 05-03789 | . |
|  | 185 (all) Vertical Fin (large beacon) (SA-0731015-1) | 05-03790 | . |



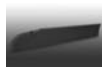

GEAR LEG AND BRAKE FAIRINGS

These are excellent items for replacing worn plastic originals. Your fiberglass replacements will be more durable with an improved finish over the original plastics.

| Photo | Description | Part No. | Price |
|---|--|----------|-------|
|  | 180/185 & oversize Brake Fairing RH (SA-0741059-2) | 05-03804 | . |
|  | 180/185 & oversize Brake Fairing LH (SA-0741059-1) | 05-03805 | . |

WING & DORSAL TIPS

Wing tips are a common victim of hanger and ramp rash. Maybe you thought the plane was going to clear those doors as you wheeled it back into the hanger...the first indication that you were wrong was that grating sound as the wing tip met metal. Here's the solution: replacement fiberglass wing tips from Stene Aviation.

| Photo | Description | Part No. | Price |
|---|--|----------|-------|
| ---- | 180 Wing Tip (straight tip)- 1955-'67 (SA-0723615-200) | 05-03797 | . |
|  | 180/185 Wing Tip (small droop) 1969-'72 LH (SA-0523565-29) | 05-03726 | . |
|  | 180/185 Wing Tip (small droop) 1969-'72 RH (SA-0523565-30) | 05-03727 | . |
| ---- | 180/185 Large Wing Tip 1962-'69 LH (SA-1223000-7) | 05-03795 | . |
| ---- | 180/185 Large Wing Tip 1962-'69 RH (SA-1223000-8) | 05-03796 | . |
|  | 180/185 Wing Tip (small droop) 1973&on LH (SA-0723200-5) | 05-03762 | . |
|  | 180/185 Wing Tip (small droop) 1973&on RH (SA-0723200-6) | 05-03761 | . |

CESSNA FIBERGLASS REPLACEMENT PARTS

CESSNA 182

What Makes These Composite Parts Such An Excellent Value?

- * Stronger than factory originals with no weight increase.
- * Easily repaired with locally available fiberglass kits if ever damaged.
- * Exact replacements of original equipment means easy installation.
- * Money back guarantee if not completely satisfied!

ELEVATORS & STABILIZERS

Here are some of our most popular items. These tips take a good deal of stress in just normal flying circumstances. They're also frequent victims of ramp rash. The original plastic simply can't stand up to the task as well as fiberglass replacements from Stene Aviation. Plus, if these parts ever do withstand damage, they're easily repaired with readily available fiberglass repair kits from you local automotive parts store.

| Photo | Description | Part No. | Price |
|-------|--|----------|-------|
| | 182 Elevator Tip 1965&on LH (SA-1234608-3) | 05-03777 | . |
| | 182 Elevator Tip 1965&on RH (SA-1234608-4) | 05-03778 | . |
| | 182 Horizontal Tip 1956-'59 (SA-0732613-1) | 05-03779 | . |
| | 182 Horizontal Tip 1965&on (SA-1232604-1) | 05-03780 | . |

STRUT CUFFS

Here's an unbeatable item for renovating your Cessna; a set of replacement strut cuffs. Order just one cuff to replace a damaged original, or get a set of four for a complete replacement.

| Photo | Description | Part No. | Price |
|-------|--|----------|-------|
| | 182 Strut Cuff Upper RH (SA-0723605-4) | 05-03774 | . |
| | 182 Strut Cuff Upper LH (SA-0723605-3) | 05-03773 | . |
| | 182 Strut Cuff Lower 1962&on RH (SA-0723612-4) | 05-03776 | . |
| | 182 Strut Cuff Lower 1962&on LH (SA-0723612-3) | 05-03775 | . |

RUDDER & VERTICAL FIN CAPS

These parts are a snap to replace on most planes. Please note, indicate if you have a straight tail or a swept tail. It is also important to let us know if your fin cap needs to accommodate a strobe or beacon, and if so, if the light is front-mounted or center-mounted.

| Photo | Description | Part No. | Price |
|-------|---|----------|-------|
| | 182 Vertical Fin (small beacon) 1960-'66 and 1976&on (SA-1231064-1) | 05-03784 | . |
| | 182 Vertical Fin (small beacon) 1967-'75 (SA-0731606-3) | 05-03785 | . |
| ---- | 182 Rudder Top 1960-'66 and 1976&on (SA-0731606-9) | 05-03793 | . |
| | 182 Rudder Top 1967-'75 (SA-0731606-6) | 05-03792 | . |

TAILCONE

Replace your wore and cracked tailcone with a stronger than factory original fiberglass tailcone from Stene Aviation.

| Photo | Description | Part No. | Price |
|-------|--------------------------------------|----------|-------|
| | 182 TailCone 1962&on (SA-1212010-15) | 05-03794 | . |

GEAR LEG AND BRAKE FAIRINGS

These are excellent items for replacing worn plastic originals. Your fiberglass replacements will be more durable with an improved finish over the original plastics.

| Photo | Description | Part No. | Price |
|-------|---|----------|-------|
| | 182 Upper Gear Leg 1972-'75 RH (SA-1741005-200) | 05-03799 | . |
| | 182 Upper Gear Leg 1972-'75 LH (SA-1741005-201) | 05-03801 | . |
| ---- | 182 Upper Gear Leg 1976&on RH (SA-1741052-200) | 05-03802 | . |
| | 182 Upper Gear Leg 1976&on LH (SA-1741052-201) | 05-03803 | . |
| | 182 Brake Fairing 1972-'74 RH (SA-0741634-18) | 05-03806 | . |
| | 182 Brake Fairing 1972-'74 LH (SA-0741634-19) | 05-03807 | . |
| ---- | 182 Brake Fairing 1975-'78 RH (SA-0741634-10) | 05-03808 | . |
| | 182 Brake Fairing 1975-'78 LH (SA-0741634-11) | 05-03809 | . |

WING & DORSAL TIPS

Wing tips are a common victim of hanger and ramp rash. Maybe you thought the plane was going to clear those doors as you wheeled it back into the hanger...the first indication that you were wrong was that grating sound as the wing tip met metal. Here's the solution: replacement fiberglass wing tips from Stene Aviation.

| Photo | Description | Part No. | Price |
|-------|--|----------|-------|
| | 182 Wing Tip (small droop) 1969-'72 LH (SA-0523565-29) | 05-03726 | . |
| | 182 Wing Tip (small droop) 1969-'72 RH (SA-0523565-30) | 05-03727 | . |
| | 182 Wing Tip (small droop) 1973&on LH (SA-0723200-5) | 05-03762 | . |
| | 182 Wing Tip (small droop) 1973&on RH (SA-0723200-6) | 05-03764 | . |
| ---- | 182 Wing Tip (straight tip)-1955-'67 (SA-0723615-200) | 05-03797 | . |

WHEEL PANTS

Replace your original plastic wheel pants with high quality and durable fiberglass replacements. All wheel pants come with a 2" access plug for checking tire pressure. Original hardware is required for mounting.

| Photo | Description | Part No. | Price |
|-------|--|----------|-------|
| | 182 Wheel Pant 1975&on RH (SA-0541223-16) | 05-03728 | . |
| | 182 Wheel Pant 1975&on LH (SA-0541223-17) | 05-03729 | . |
| | 182 Nose Wheel Pant 1975&on (SA-0543079-3) | 05-03730 | . |



CESSNA FIBERGLASS REPLACEMENT PARTS

CESSNA 205/206/207/210

What Makes These Composite Parts Such An Excellent Value?

- * Stronger than factory originals with no weight increase.
- * Easily repaired with locally available fiberglass kits if ever damaged.
- * Exact replacements of original equipment means easy installation.
- * Money back guarantee if not completely satisfied!






ELEVATORS & STABILIZERS

Here are some of our most popular items. These tips take a good deal of stress in just normal flying circumstances. They're also frequent victims of ramp rash. The original plastic simply can't stand up to the task as well as fiberglass replacements from Stene Aviation. Plus, if these parts ever do withstand damage, they're easily repaired with readily available fiberglass repair kits from your local automotive parts store.

| Image | Description | Part No. | Price |
|---|--|----------|-------|
|  | 206/207 Elevator Tips 1965-'67 LH (SA-1234608-3) | 05-03777 | . |
|  | 206/207 Elevator Tips 1965-'67 RH (SA-1234608-4) | 05-03778 | . |
|  | 206/207 Horizontal Tip 1967 & on (SA-1232012-1) | 05-03833 | . |
|  | 206/207 Horizontal Tip 1965-1967 (SA-1232604-1) | 05-03780 | . |
|  | 210 (1967 & on) Elevator Tips LH(SA-1234640-1 left hand) | 05-03831 | . |
|  | 210 (1967 & on) Elevator Tips RH (SA-1234640-2 right hand) | 05-03832 | . |
|  | 210 (1967 & on) Horizontal Tip (SA-1232012-1) | 05-03833 | . |





STRUT CUFFS

Here's an unbeatable item for renovating your Cessna; a set of replacement strut cuffs. Order just one cuff to replace a damaged original, or get a set of four for a complete replacement.

| Image | Description | Part No. | Price |
|---|--|----------|-------|
| ---- | 210 Strut Cuff Upper Right 1960-'63(SA-1227002-4) | 05-03817 | . |
| ---- | 210 Strut Cuff Upper Left 1960-'63(SA-1227002-5) | 05-03818 | . |
| ---- | 206/207 Strut Cuff Upper Right 1964-'71(SA-1227002-10) | 05-03821 | . |
| ---- | 206/207 Strut Cuff Upper Left 1964-'71(SA-1227002-11) | 05-03822 | . |
| ---- | 206/207 Strut Cuff Upper Right 1972&on(SA-1227005-6) | 05-03826 | . |
| ---- | 206/207 Strut Cuff Upper Left 1972&on(SA-1227005-5) | 05-03825 | . |
| ---- | 210 Strut Cuff Lower Right 1960&'61(SA-1227002-2) | 05-03815 | . |
| ---- | 210 Strut Cuff Lower Right 1962&'63(SA-1227402-6) | 05-03820 | . |
| ---- | 210 Strut Cuff Lower Left 1962&'63(SA-1227402-5) | 05-03819 | . |
| ---- | 205 Strut Cuff Lower Right 1963&'64(SA-1227401-4) | 05-03829 | . |
| ---- | 205 Strut Cuff Lower Left 1963&'64(SA-1227401-5) | 05-03830 | . |
|  | 206 Strut Cuff Lower Right 1964-'71(SA-1227402-4) | 05-03824 | . |
| ---- | 206 Strut Cuff Lower Left 1964-'71(SA-1227402-3) | 05-03823 | . |
|  | 206/207 Strut Cuff Lower Right 1972&on(SA-1227010-2) | 05-03828 | . |
|  | 206/207 Strut Cuff Lower Left 1972&on(SA-1227010-1) | 05-03827 | . |
|  | 210 Strut Cuff Upper 1960-'63 RH(SA-1227002-4) | 05-03817 | . |
|  | 210 Strut Cuff Upper 1960-'63 LH(SA-1227002-5) | 05-03818 | . |
| ---- | 210 Strut Cuff Lower 1960&'61 RH(SA-1227002-2) | 05-03815 | . |


RUDDER & VERTICAL FIN CAPS

These parts are a snap to replace on most planes. Please note, indicate if you have a straight tail or a swept tail. It is also important to let us know if your fin cap needs to accommodate a strobe or beacon, and if so, if the light is front-mounted or center-mounted.

| Image | Description | Part No. | Price |
|---|---|----------|-------|
|  | 205/206/207 Vertical Fin (small beacon) 1964-'67 and 1976&on (SA-1231064-3) | 05-03786 | . |
|  | 206/207 Vertical Fin (small beacon) 1967-'75 (SA-0731606-3) | 05-03785 | . |
|  | 206/207 Rudder Top 1967-'75 (SA-0731606-6) | 05-03792 | . |
|  | 205/206/207 Rudder Top 1964-'66 and 1976&on (SA-0731606-9) | 05-03793 | . |





GEAR LEG AND BRAKE FAIRINGS

These are excellent items for replacing worn plastic originals. Your fiberglass replacements will be more durable with an improved finish over the original plastics.

| Image | Description | Part No. | Price |
|--|--|----------|-------|
| ---- | 207 Right Upper Gear Leg 1969&on(SA-1241217-2) | 05-03813 | . |
|  | 207 Left Upper Gear Leg 1969&on(SA-1241217-1) | 05-03812 | . |
|  | 206 Right Brake Fairing (Heavy Duty)(SA-1241232-2) | 05-03837 | . |
|  | 206 Left Brake Fairing (Heavy Duty) (SA-1241232-1) | 05-03836 | . |




WING TIPS

Wing tips are a common victim of hanger and ramp rash. Maybe you thought the plane was going to clear those doors as you wheeled it back into the hanger...the first indication that you were wrong was that grating sound as the wing tip met metal. Here's the solution: replacement fiberglass wing tips from Stene Aviation.

| Image | Description | Part No. | Price |
|---|--|----------|-------|
|  | 206 Wing Tip (small droop) 1969-'72 LH (SA-0523565-29) | 05-03726 | . |
|  | 207 Wing Tip (small droop) 1969&on LH (SA-0523565-29) | 05-03726 | . |
|  | 206 Wing Tip (small droop) 1973&on LH (SA-0723200-5) | 05-03762 | . |
|  | 206 Wing Tip (small droop) 1973&on RH(SA-0723200-6) | 05-03764 | . |
| ---- | 210 Wing Tip 1971&on LH(SA-1221111-203) | 05-03835 | . |
| ---- | 210 Wing Tip 1971&on RH(SA-1221111-202) | 05-03834 | . |

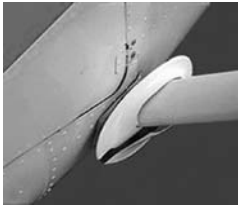
WHEEL PANTS

Replace your original plastic wheel pants with high quality and durable fiberglass replacements. All wheel pants come with a 2" access plug for checking tire pressure. Original hardware is required for mounting.

| Image | Description | Part No. | Price |
|---|--|----------|-------|
|  | 206 Wheel Pant 1975&on RH (SA-0541223-16) | 05-03728 | . |
|  | 206 Wheel Pant 1975&on LH (SA-0541223-17) | 05-03729 | . |
|  | 206 Nose Wheel Pant 1975&on (SA-0543079-3) | 05-03730 | . |

AP

CESSNA LIFT STRUT FAIRINGS



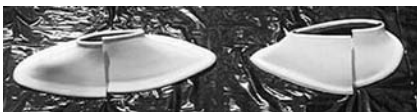
CESSNA LIFT STRUT FAIRINGS

These fairing kits consist of four wing strut fairings that slip over the lift struts. These fairings are better than those manufactured by Cessna because they are made of fiberglass rather than a royalite type material, that bends and cracks after a short time on the aircraft. Fiberglass has the following advantages over a royalite type material, it is approximately 6 times stronger and 12 times stiffer, it resists ultra violet light and weathers better, and it keeps its chemical composition intact much longer. With all these advantages, these will probably be the last lift strut fairings that will ever have to be installed on the aircraft. And even should these fairings be damaged through some unforeseen circumstances, being made of fiberglass, they will be easily repairable. These fairings are all split so they slip over the lift strut thus eliminating the need to disconnect the lift strut to install the fairing. With the average price of these lift strut fairings, it is the same as getting a 75% discount off equivalent Cessna lift strut fairings. We recommend, as with all plastics, they be painted for better UV protection. These kits are FAA STC'd and manufactured under a FAA/PMA authority.

Top Number is Aircraft Spruce Part Number. Second number is the Cessna part number.

| CESSNA MODELS | RH WING | LH WING | RH FUSELAGE | LH FUSELAGE | KIT |
|--|----------------------------|----------------------------|---------------------------|---------------------------|---------------|
| 150 and 152 | 05-01557 0522150-4 | 05-01558 0522150-3 | 05-01564 0421002-2-791 | 05-01565 0421002-1-791 | 05-01598 |
| 170A & B | 05-01557 0522150-4 | 05-01558 0522150-3 | 05-01559 0522150-2 | 05-01562 0522150-1 | 05-01599 |
| 172 to 172L | 05-01557 0522150-4 | 05-01558 0522150-3 | 05-01559 0522150-2 | 05-01562 0522150-1 | 05-01599 |
| 172M to 172S & SP P172D, 172RG, R172K (172XP) | 05-01583 0523047-2 | 05-01586 0523047-1 | 05-01559 0522150-2 | 05-01562 0522150-1 | 05-01601 |
| 175 | 05-01557 0522150-4 | 05-01558 0522150-3 | 05-01559 0522150-2 | 05-01562 0522150-1 | 05-01599 |
| 180 | 05-01566 0723605-4-791 | 05-01567 0723605-3-791 | 05-01568 0723605-2-791 | 05-02489 0723605-1-791 | 05-01602 |
| 182 to 182D | 05-01566 0723605-4-791 | 05-01567 0723605-3-791 | 05-01568 0723605-2-791 | 05-02489 0723605-1-791 | 05-01602 |
| 182E to 182S R182, T182, TR182 | 05-01566 0723605-4-791 | 05-01567 0723605-3-791 | 05-01569 0723612-4-791 | 05-01570 0723612-3-791 | 05-01603 |
| 185 to 185E A185E, A185F | 05-01566 0723605-4-791 | 05-01567 0723605-3-791 | 05-01568 0723605-2-791 | 05-02489 0723605-1-791 | 05-01602 |
| 205 , 205A | 05-01571 1227002-10-791 | 05-01573 1227002-11-791 | Not Available | Not Available | Not Available |
| 206, P206, TP206, U206, TU206, all to E | 05-01571 1227002-10-791 | 05-01573 1227002-11-791 | 05-01594 1227402-4-791 | 05-01595 1227402-3-791 | 05-01604 |
| U206F, TU206F, all to SN 206-02200 to 1986 | Not Available | Not Available | 05-01596 1227010-2 | 05-01597 1227010-1 | Not Available |
| U206, TU206, from SN U206-2576 to 1986 | 05-01591 1227005-6 | 05-01593 1227005-5 | 05-01596 1227010-2 | 05-01597 1227010-1 | 05-01605 |
| 207, 207A, T207, T207A, From S/N 207-00255 to 1984 | 05-01591 127005-6 | 05-01593 127005-5 | 05-01596 1227010-2 | 05-01597 1227010-1 | 05-01605 |
| 207, 207A, T207, T207A From S/N 207-00001 to 1984 | Not Available | Not Available | 05-01596 1227010-2 | 05-01597 1227010-1 | Not Available |
| 210F to K, T210F to K S/N 21058716/58818 & T21001/0197 | 05-01571 1227002-10-791 | 05-01573 1227002-11-791 | 05-01594 1227402-4-791 | 05-01595 1227402-3-791 | 05-01604 |

AP



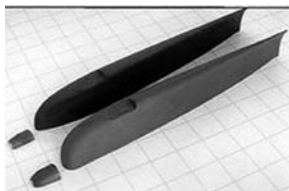
CESSNA LANDING GEAR STRUT FAIRINGS

These fuselage landing gear strut fairings that slip over the landing gear struts are better than those manufactured by Cessna because they are made of fiberglass rather than a royalite type material, that bends and cracks after a short time on the aircraft. Fiberglass has the following advantages over a royalite type material, it is approximately six times stronger and 12 times stiffer, it resists ultra violet light and weathers better, and it keeps its chemical composition intact much longer. With all these

advantages these will probably be the last landing gear strut fairings that will ever have to be installed on the aircraft. And even should these fairings be damaged through some unforeseen circumstances, being made of fiberglass, they will be easily repairable. They are all split so they slip over the landing gear strut. These kits are manufactured under a FAA PMA authority. Top line is Cessna part number. Middle line is Aircraft Spruce part number. Bottom line is price.

| Cessna Model | LH Fuselage | RH Fuselage |
|---|----------------------------|---|
| 150L, 150M, A150L, A150M, 152, A152 | 0441217-215 PN 05-03495 | 0441217-214 PN 05-03501 |
| 172L thru 172R, R172K (172XP), 172SP | 1741005-239 PN 05-03496 | 1741005-240 PN 05-03502 \$130.00 |
| 182P S/N18260826 to 18263475 AND 182P S/N18263476 to 18264295 | 1741005-201 PN 05-03497 | 1741005-200 PN 05-03503 |
| 182P From S/N18264296, 182Q, 182R, 182S, T182R | 0741052-201 PN 05-03499 | 0741052-200 PN 05-03505 |

CESSNA WING TIPS - EMPENNAGE TIPS



CESSNA WING TIPS

These wing tip kits consist of a left and right hand drooped fiberglass wing tip. These wing tips are better than those manufactured by Cessna because they are made of fiberglass rather than a royalite type material, that bends and cracks after a short time on the aircraft. The superior epoxy rather than polyester fiberglass is used. Epoxy fiberglass has major advantages over a royalite type material; It is approximately six times stronger and twelve times stiffer, it resists ultraviolet light and weathers better, and it keeps its chemical composition intact much longer. With all these advantages, they will probably be the last wingtips that will ever have to be installed on the aircraft. Should these wing tips be damaged through some unforeseen circumstances, they are easily repairable due to their fiberglass construction. These kits are FAA STC'd and manufactured under a FAA PMA authority. The STC allows you to install these modern drooped wing tips, even if your aircraft was not originally manufactured with this newer, more aerodynamically efficient wingtip. ***Does not include the Plate lens. Plate lens must be purchased separately. **Kits includes the left hand wing tip, right hand wing tip, hardware, and the plate lens**

modern drooped wing tips, even if your aircraft was not originally manufactured with this newer, more aerodynamically efficient wingtip. ***Does not include the Plate lens. Plate lens must be purchased separately. **Kits includes the left hand wing tip, right hand wing tip, hardware, and the plate lens**

| Cessna Models | Kit No.** | Price Per Kit |
|--|-----------------------|---------------|
| All 150, A150, 152, A152, 170A & B, P172, 175, 205 & L19, 172, 180, 185 for model year up through 1972.182, 206 for model year up through 1971, 207 from 1970 and up | 05-01526 (219-100) | . |
| 172, R172K(172XP), 172RG, 180, 185 for model year 1973 and up, 182, 206 for model year 1972 and up. | 05-01545 (219-200) | . |



EMPENNAGE TIPS

All parts made of fiberglass and FAA/PMA approved. Top line is Aircraft Spruce part number, middle line is Cessna part number. Bottom line is price.

| Cessna Models | Tip Vertical Fin | Tip Upper Rudder | Tip Lower Rudder |
|--------------------------------------|---------------------------------|--------------------------------|---------------------------------|
| 150F and up, A150, 152, A152 | | | 05-01518 0431005-1-791 . |
| 150F to 150L, A150K, A150L No Beacon | 05-01519 0431013-3-791 . | | |
| 150M and up, A150M and up, 152, A152 | 05-01520 0430011-1 . | 05-01521 0430011-2 . | |
| 172K and p, 172RG, R172K(172XP) | | | 05-01522 0531006-80-791 . |
| 172 1976 and up, 172RG, R172K(172XP) | | 05-01523 0531006-112 . | |
| 172A to 172I No Beacon | 05-01524 0531006-33-791 . | 05-03508 053100634-791 . | |

| Cessna Models | Tip Horizontal Fin L/H | Tip Horizontal Fin R/H | Tip Elev. L/H | Tip Elev. R/H |
|--|---------------------------------|---------------------------------|---------------------------------|----------------------------------|
| 150D, and up, A150, 152, A152 | 05-01513 0430004-11-791 . | 05-01513 0430004-11-791 . | 05-01514 0430004-10-791 . | 05-01514 0430004-10-791 . |
| 172D and up, P172, R172K (172XP) 172RG | 05-01515 0532001-93-791 . | 05-01515 0532001-93-791 . | 05-01517 0532001-94-791 . | 05-01516 0532001-100-791 . |

CESSNA FLAP GAP-SPEED KIT

Cessna flap gap speed kit consists of a gap seal on the lower flap gap that is an extension of the lower wing skin from the rear spar to the leading edge of the flap. The seal eliminate a high drag area plus reduce the amount of air leaking from the high pressure underside of the wing to the low pressure top side of the wing. The reduction in air leakage allows the wing to fly at a lower angle of attack for the same amount of lift, thus reducing drag. Please note Aircraft Development does not recommend installing a flap gap kit on those aircraft with wet wings because of the difficulty of resealing the wings to a gas leak free condition. This flap gap-kit is FAA STC'd and manufactured under a FAA PMA authority. Also available is a hardware kit 114H containing enough hardware to install the flap gap kit.

| Cessna Models | Flap Gap Kit No. | Price | Hardware Kit No. | Price |
|---|-----------------------|-------|--------------------|-------|
| 170B, 172, 172A, 172B, 172C, 172D, 172E, 172F, (USAF T-41A) 172G, 172H, (USAF T-41A), 172I, 172K, 172L, 172M, 172N, 172P, 172Q, 175, 175A, 175B, 175C, P172D, R172E (USAF T-41B), (USAF T-41C & D), R172F (USAF T-41D), R172G (USAF T-41C or D), R172H (USAF T-41D), R172J, R172K Known as 172XP, 172RG, 180, 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, 180J, 180K, 182, 182A, 182B, 182C, 182D, 182E, 182F, 182G, 182H, 182J, 182K, 182L, 182M, 182N, 182P, 182Q, 182R, R182, T182, T182R, TR182, 185, 185A, 185B, 185C, 185D, 185E, A185E, A185F, 210-5 (205), 210-5A (205A), 210, 210A, 210B, 210C | 05-01620 (114-100) | . | 05-01621 (114H) | . |
| 150, 150A, 150B, 150C, 150D, 150E, 150F, 150G, 150H, 150J, 150K, A150K, 150L, A150L, 150M, A150M, 152, A152 | 05-01622 (114-200) | . | 05-01621 (114H) | . |

115-100 CESSNA AILERON GAP KIT

Cessna aileron gap kit tconsists of gap seals on the lower and upper aileron gaps that is an extension of the lower and upper wing skin from the rear spar to the leading edge of the aileron. The seals eliminate a high drag area plus reduce the amount of air leaking from the high pressure underside of the wing to the low pressure top side of the wing. The reduction in air leakage allows the wing to fly at a lower angle of attack for the same amount of lift, thus reducing drag. This aileron gap-speed kit is FAA STC'd and manufactured under a FAA PMA authority. Also available is a hardware kit 115H containing enough rivets to install the aileron gap kit.

| Cessna Models | Aileron Gap Kit No. | Price | Hardware Kit | Price |
|--|-----------------------|-------|--------------------|-------|
| 150, A150, 152, A152, 170B, 172, 175, 180, 182, 185, 205, 210 through 210C | 05-01623 (115-100) | . | 05-01624 (115H) | . |

PIPER PARTS

(FAA/PMA APPROVED)

PIPER NOSE COWLING (ALL METAL)



PA 20-22



PA 18

J-3 & PA-11

| Description | P/N | Price |
|---|----------|-------|
| PA-11, For cowls using screws | 05-07295 | |
| PA-11, For cowls using Lion fasteners | 05-07305 | |
| J-3 Eyebrow baffle LH | 05-00061 | |
| J-3 Eyebrow baffle RH | 05-00062 | |
| Front piece for Top cowl | 05-00063 | |
| Top cowl for J-3 | 05-00064 | |
| Bottom cowl for Continental powered J-3 | 05-00065 | |
| Front piece for bottom cowl | 05-00066 | |
| Fuselage cowl | 05-00067 | |
| Top cowl for PA-11 | 05-00068 | |
| Bottom cowl for PA-11 | 05-00069 | |
| Side cowl for PA-11LH | 05-00071 | |
| Side cowl for PA-11 RH | 05-00072 | |

PA-12

| | | |
|-----------------|----------|--|
| Bottom cowl | 05-00078 | |
| Top cowl | 05-00079 | |
| Fuselage cowl | 05-00081 | |
| Left side cowl | 05-00082 | |
| Right side cowl | 05-00083 | |

PA-12 & 14

| | | |
|----------------------------------|----------|--|
| Nose cowl for all serial numbers | 05-07310 | |
|----------------------------------|----------|--|

PA-18 (95 HP)

| | | |
|--|----------|--|
| PA-18, For cowls using screws | 05-07295 | |
| PA-18, For cowls using Lion fasteners | 05-07305 | |
| Left side cowl, used w/shielded ignition lead | 05-00073 | |
| Right side cowl, used w/shielded ignition lead | 05-00074 | |
| Top cowl | 05-00075 | |
| Bottom cowl | 05-00076 | |
| Bottom cowl, installed w/machine screws | 05-00077 | |

PA-18 - 105, 125, 135, 150 HP

| | | |
|--|----------|--|
| Fuselage cowl, S/N 2168-5938,105,125,135HP | 05-00089 | |
| Fuselage cowl, S/N 5939-8019, 135, 150 HP | 05-00091 | |
| Fuselage cowl, S/N 8020 and up, 150 HP | 05-00092 | |
| PA-18-105 thru 125 HP, no starter hole | 05-07315 | |
| PA-18-105 thru 125 HP, with starter hole | 05-07320 | |
| PA-18-135 & 150 HP, w/starter hole & oil scoop | 05-07325 | |
| PA-18-135 & 150 HP, w/oil scoop, no starter hole | 05-07330 | |
| Top cowl, 105 HP | 05-00093 | |
| Top cowl, 125, 135, 150 HP | 05-00094 | |
| Left side cowl, 105 HP | 05-00095 | |
| Right side cowl, 105 HP | 05-00096 | |
| Left side cowl, 125, 135, 150 HP | 05-00097 | |
| Right side cowl, 125, 135, 150 HP | 05-00098 | |
| Lower cowl ass'y, 135 HP, S/N 3014 thru 4617 | 05-00099 | |
| Lower cowl ass'y, 150 HP, S/N 3771 thru 6963 | 05-00101 | |
| Lower cowl ass'y, 150 HP, S/N 6964 and up | 05-00102 | |

PA-20 & PA-22

| | | |
|---|----------|--|
| PA-22-108, S/N 8000 & up, w/o oil scoop | 05-07345 | |
| PA-20 Nose cowl, 115 HP | 05-07335 | |
| PA-22 Nose cowl, S/N 1 thru 533 | 05-07335 | |
| PA-20 Nose cowl, 135 HP | 05-07340 | |
| PA-20 Bottom cowl, 125 HP | 05-00049 | |
| PA-20 Bottom cowl, 135 HP | 05-00051 | |
| PA-22 Bottom cowl, 125 HP, S/N 1 - 353 | 05-00052 | |
| PA-22 Bottom cowl, 125 HP, S/N 354 - 533 | 05-00053 | |
| PA-22 Bottom cowl, 125 HP, S/N 534 - 1759 | 05-00054 | |
| PA-22 Bottom cowl, 135-160HP, S/N 1760-7630 | 05-00055 | |
| PA-22(Colt) Bottom cowl, 108HP, S/N 8000 & up | 05-00056 | |
| PA-22 Left side cowl | 05-00057 | |
| PA-22 Right side cowl | 05-00058 | |
| PA-20/22 Top center cowl | 05-00059 | |
| PA-25 Pawnee Nose cowl, 150 HP | 05-07340 | |

ONE PIECE STAMPED ALUMINUM RIBS (STC APPROVED)



These durable ribs are direct replacements for the original style "Truss" type ribs originally used by Piper. These ribs are designed for the various modes of Piper including J-3 and PA-18 with metal spars. The ribs listed are the more commonly requested ribs for this series.

| Description | Part No. | Replaces | Price |
|-------------------------|----------|-----------|-------|
| Nose Rib | 05-07365 | 12662-002 | |
| Nose Rib, Tip L/H | 05-07370 | 16192-000 | |
| Nose Rib, Tip R/H | 05-07375 | 16192-001 | |
| Full Rib | 05-07380 | 13052-002 | |
| Full Butt Rib, L/H | 05-07385 | 10634-000 | |
| Full Butt Rib, R/H | 05-07390 | 10634-008 | |
| Full Tank Bay Rib, L/H | 05-07395 | 10653-000 | |
| Full Tank Bay Rib, R/H | 05-07405 | 10653-006 | |
| Full I.B. Ail. Bay, L/H | 05-07410 | 13042-000 | |
| Full I.B. Ail. Bay, R/H | 05-07415 | 13042-001 | |
| Full O.B. Ail. Bay, L/H | 05-07420 | 12902-000 | |
| Full O.B. Ail. Bay, R/H | 05-07425 | 12902-001 | |
| 3/4 Rib | 05-07430 | 13022-002 | |
| 3/4 Butt Rib, L/H | 05-07435 | 10634-005 | |
| 3/4 Butt Rib, R/H | 05-07440 | 10634-007 | |
| 3/4 Tank Bay Rib | 05-02397 | 10635-002 | |

STABILIZER LINER TUBE



Link Assembly Liner Tube (upper tube in picture)
(80132-11).....P/N 05-07450

Rear Liner Tube (lower tube in picture)
(80132-10).....P/N 05-07455



WING NAVIGATION LIGHT BRACKET

For use with Grimes Model "E" Type Light or equivalent.....P/N 05-07460

ENGINE MOUNTS

| | |
|-----------------------|--------------|
| J-3 Continental Mount | P/N 05-00873 |
| PA-11 Mount | P/N 05-00874 |



STABILIZER YOKE & ADJUSTMENT SCREW

Yoke.....P/N 05-07465

Adjustment Screw.....P/N 05-07470



J-3, PA-11, PA-18

Left Gear, uncovered..... P/N 05-07350

Right Gear, uncovered..... P/N 05-07355

PIPER PA28/32/34 GLARESHIELDS



These beautiful new Glareshields are designed for the Piper models PA28, PA32 and PA34. The new Glareshield is made of FAA approved temperature stable Lexan covered with sound proofing foam and a new non-glare vinyl that looks like leather. With a 3 inch eyebrow over the instrument panel, it not only adds beauty to your plane but also improves forward visibility. The new Glareshield is easy to install and comes with

all hardware and detailed instructions.

(PIPER PA28)..... P/N 05-02221

(PIPER PA32 & 34)..... P/N 05-02222

(PIPER C MODEL)..... P/N 05-02223



PIPER HEATER TEMPERATURE CONTROL LOCK

For years Piper PA28 and PA32 owners have been plagued with a Heater Temperature Control that will not stay positioned. With cold weather upon us, this situation can make winter flying very uncomfortable. This Heater Temperature Control Lock that can be installed in minutes and provides a positive adjustable lock for the Heater Control Lever.....P/N 08-04939

AP

PIPER PARTS

(FAA/PMA APPROVED)

SPINNER ASSEMBLIES & COMPONENTS



Short Spinner Assembly for Piper

Models PA-12, PA-16, PA-18, PA-20 & PA-22 with O-235 or O-290 engines with AM series Sensenich propellers.

| | |
|-------------------------|--------------------|
| Spinner Dome | P/N 05-07670 |
| Front Plate | P/N 05-07675 |
| Back Plate | P/N 05-07680 |
| Complete Assembly | P/N 05-07685 |

PA-25 Spinner Components

Assembly for Fixed Pitch Propellers serial numbers 2986-3691

| | |
|-------------------------|--------------------|
| Dome Only | P/N 05-07690 |
| Back Plate | P/N 05-07695 |
| Front Plate | P/N 05-07705 |
| Complete Assembly | P/N 05-07710 |

Spinner Components for 235 hp. with FA8452 McCauley Propeller.

| | |
|---|--------------------|
| Dome Only | P/N 05-07715 |
| Back Plate | P/N 05-07720 |
| Front Plate | P/N 05-07725 |
| Spinner Assembly for PA-18/18A, 150 hp. | |
| Spinner Dome | P/N 05-07730 |
| Front Plate | P/N 05-07735 |



Back Plate P/N 05-07740

Complete Assembly P/N 05-07745

RIB KITS FOR PIPERS

| Description | P/N | Price |
|-----------------------|----------|-------|
| J3 RIB KIT (LH) | 05-02373 | . |
| J3 RIB KIT (RH) | 05-02374 | . |
| PA18-150 RIB KIT (LH) | 05-02375 | . |
| PA18-150 RIB KIT (RH) | 05-02376 | . |

INDIVIDUAL RIBS FOR PIPERS

J-3

| Piper# | Our P/N | Description | Price | # Per Wing |
|-----------|----------|----------------------------------|-------|------------|
| 10742-002 | 05-02407 | Tip Rib, LH #13 | . | 1 |
| 10742-003 | 05-02394 | Tip Rib, RH #13 | . | 1 |
| 12662-002 | 05-02389 | Nose Rib | . | 10 |
| 12902-000 | 05-02387 | Outboard Aileron Bay Rib, LH #12 | . | 1 |
| 12902-001 | 05-02393 | Outboard Aileron Bay Rib, RH #12 | . | 1 |
| 13022-002 | 05-02386 | 3/4 Rib, #10 and #11 | . | 2 |
| 13022-002 | 05-02383 | 3/4 Rib, LH or RH #7 | . | 1 |
| 13022-002 | 05-02384 | 3/4 Rib, LH or RH #8 | . | 1 |
| 13022-005 | 05-02382 | 3/4 Rib, LH or RH #6 | . | 1 |
| 13022-006 | 05-02385 | 3/4 Rib, #9 at strut point | . | 1 |
| 13042-000 | 05-02381 | Inboard Aileron Bay Rib, LH #5 | . | 1 |
| 13042-001 | 05-02392 | Inboard Aileron Bay Rib, RH #5 | . | 1 |
| 13052-002 | 05-02379 | Full Rib, LH or RH #2 | . | 1 |
| 13052-002 | 05-02380 | Full Rib, #3 and #4 | . | 2 |
| 13052-004 | 05-02378 | Butt Rib, LH #1 | . | 1 |
| 13052-004 | 05-02391 | Butt Rib, RH #1 | . | 1 |
| 15712-000 | 05-02390 | Nose Rib at strut point | . | 1 |
| 16192-000 | 05-02377 | Tip Nose Rib, LH | . | 1 |
| 16192-001 | 05-02395 | Tip Nose Rib, RH | . | 1 |

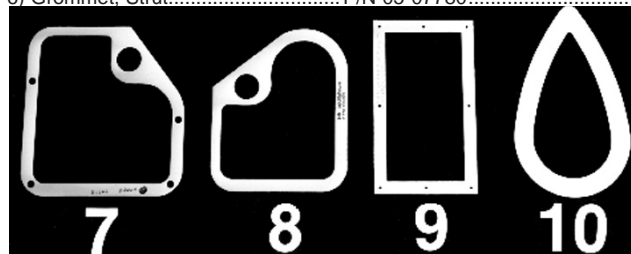
PA-18 150 HP.

| Piper# | Our P/N | Description | Price | # Per Wing |
|-----------|----------|----------------------------------|-------|------------|
| 10634-005 | 05-02396 | Butt Rib, LH #1 | . | 1 |
| 10634-007 | 05-02404 | Butt Rib, RH #1 | . | 1 |
| 10635-002 | 05-02397 | Tank Bay Rib, #2 and #3 | . | 2 |
| 10653-002 | 05-02398 | 3/4 Rib, LH #4 | . | 1 |
| 10653-005 | 05-02405 | 3/4 Rib, RH #4 | . | 1 |
| 10742-002 | 05-02388 | Tip Rib, LH #16 | . | 1 |
| 10742-003 | 05-02394 | Tip Rib, RH #16 | . | 1 |
| 12662-002 | 05-02389 | Nose Rib | . | 10 |
| 12902-000 | 05-02387 | Outboard Aileron Bay Rib, LH #15 | . | 1 |
| 12902-001 | 05-02393 | Outboard Aileron Bay Rib, RH #15 | . | 1 |
| 13022-002 | 05-02386 | 3/4 Rib, #10, #13 and #14 | . | 3 |
| 13022-009 | 05-02385 | 3/4 Rib, LH or RH, #11 | . | 1 |
| 13022-010 | 05-02403 | 3/4 Rib, LH or RH, #8 | . | 1 |
| 13022-011 | 05-02386 | 3/4 Rib, LH or RH, #9 and #12 | . | 2 |
| 13042-002 | 05-02402 | 3/4 Rib, LH #7 | . | 1 |
| 13042-003 | 05-02407 | 3/4 Rib, RH #7 | . | 1 |
| 13052-007 | 05-02399 | 3/4 Rib, LH or RH, #5 | . | 1 |
| 13052-009 | 05-02406 | 3/4 Rib, RH #6 | . | 1 |
| 13052-010 | 05-02401 | 3/4 Rib, LH #6 | . | 1 |
| 15712-000 | 05-02390 | Nose Rib at strut point | . | 1 |
| 16192-000 | 05-02377 | Tip Nose Rib, LH | . | 1 |
| 16192-001 | 05-02393 | Tip Nose Rib, RH | . | 1 |

COMMON PIPER GROMMETS



- 1) Grommet, Tail P/N 05-07750
- 2) Grommet P/N 05-07755
- 3) Grommet P/N 05-07765
- 4) Grommet P/N 05-07770
- 5) Grommet, Inspection Plate (original Piper type: 80122-49) P/N 05-07775
- 6) Grommet, Strut P/N 05-07780



- 7) Grommet, Tail (used on PA-25 and later PA-18's) P/N 05-07785
- 8) Grommet, Tail P/N 05-07790
- 9) Grommet, Cover P/N 05-07795
- 10) Grommet, Pulley Cover P/N 05-07800

PIPER FABRIC REINFORCEMENTS



PN 05-07625 PN 05-07635 PN 05-07630 PN 05-07620

| Model | Deminsion | Part No. | Price |
|------------|---------------|----------|-------|
| U60863-005 | 2"W x 4-1/2"L | 05-07625 | |
| U60863-003 | 2"W x 4-1/2"L | 05-07635 | |
| U60863-002 | 2"W x 4-1/2"L | 05-07630 | |
| U60481-000 | 2"W x 4-1/2"L | 05-07620 | |
| U60863-009 | 2"W x 2-1/2"L | 05-07640 | |



J-3 FUEL VALVE

This J-3 fuel valve includes a steel handle for use with the original pushpull shut off control. This valve is a significant improvement over the original brass style fuel valve. The new valve has a stainless steel ball seated in an inert composite seat. This improved design eliminates the stiff operation and leaking around the shaft that the original design was prone to. PMA approved. P/N 05-00848



J-3/PA-11 THROTTLE CONTROL

FAA approved replacement throttle control.

P/N 05-03397

FLEXIBLE RUBBER BRAKE LINE



From brake master cylinder to copper lines on gear vee.

P/N 05-07530



OIL PRESSURE HOSE

P/N 05-07360



WING TIP BOWS

Preformed wooden wing tip bows for use in all Piper Aircraft Models J-3 to PA-22. It is recommended to soak the wing tip bows in water before

installation to avoid breakage.

P/N 02-18500/ea.

Note: Wing tip bows can be shipped via UPS with an oversized package rate equal to the 30 Lb. rate.



PIPER PARTS

HEAVY DUTY MUFFLER

Heavy Duty Muffler STC/PMA
P/N 05-03475



PRE-HEAT SHROUD PA-18

Pre-heat shroud PA-18 STC/PMA
P/N 05-03457.....

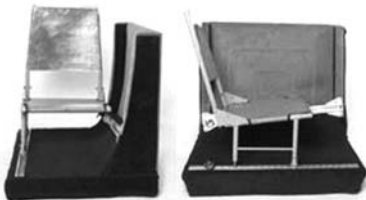


HEADER TANKS

Front: 05-03468 Rear: 05-03469 PA-18, PA-19 STC
Heater Tanks - Front ...05-03468

Heater tanks - Rear05-03469

FOLDING JUMP SEATS



Folding Jump Seats - 170, 172, 172S, 175, 180, 180K, 182, 182R, 185, A185F STC/PMA

| Description | Part No. | Price |
|--------------------------------------|----------|-------|
| Folding Jump Seats - Right hand Pair | 05-03470 | . |
| Folding Jump Seats left Hand Pair | 05-03472 | . |
| Description | Part No. | Price |
| Folding Jump Seat Right Hand Single | 05-03471 | . |
| Folding Jump Seats Left Hand Single | 05-03473 | . |

FOLDING FRONT SEAT KIT

Folding Front Seat Kit STC
P/N 05-03474.....



SEAT TRACK TIE DOWN

Seat Track Tie Downs - Aircraft equipped with Cessna or McFarlane Seat rails.
P/N 05-03467.....

BUSHING WITH RETAINING RING FOR PIPER AIRCRAFT



COWL BUSHING R-RING MC69790-00 - Material that outlasts the original nylon or glass filled teflon materials. Used on most Piper Cherokee models. Includes the retaining ring (snap ring). P/N 05-01764

COWL PLATE ASSEMBLY MC69791-000 - Stainless steel mounting plate with MC69790-00 teflon glass bushing and MC484-840 retaining ring. Upper cowl retaining part for most Piper Cherokee models.
P/N 05-04476.....

with MC69790-00 teflon glass bushing and MC484-840 retaining ring. Upper cowl retaining part for most Piper Cherokee models.
P/N 05-04476.....

VENTED FUEL CAPS

Vented Fuel Caps J3 thru PA-22 STC .
P/N 05-03459



180HP FUEL CAP

180 Fuel Cap PA-12 thru PA-18 with 180HP Engine.
P/N 05-03458



UNDER SEAT BATTERY RACK

Under Seat Battery Rack PA 18 STC
P/N 05-03460



REFUELING STEPS

Refueling Steps J3 thru PA-22 STC P/N 05-03462



MAIN LANDING GEAR LONG STEP

Main landing gear Long Step J3 thru PA-19 STC
P/N 05-03461



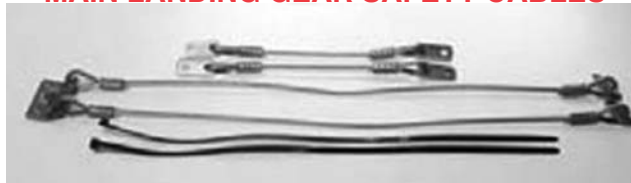
WELD ON AIRCRAFT FLOAT FITTINGS

Weld on aircraft float fittings PA-12, -14, PN 05-03476 PA-18 PN 05-03477 STC



Float Fittings PA-12/14
P/N 05-03476.....
Float Fittings PA-18
P/N 05-03477

MAIN LANDING GEAR SAFETY CABLES



Main Landing Gear Safety Cables (All STC) Standard Gear J-3, PA-11, PA-18, PA-19..... PN 05-03463

3" Extension Gear..... PN 05-03464

Standard Gear PA-12, PA-14..... PN 05-03465

3" Extended Gear PA-12, PA-14..... PN 05-03466

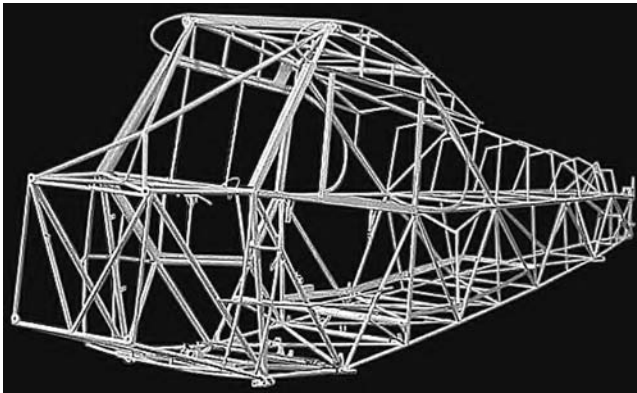
AILERON HINGE FOR PIPER

Piper Eligibility PA-28-140,-150, -160, -180, -235; PA-28R-180,-200,-201,-201T; PA-28-181, -236, -201T; PA-28-181,-236, -201T; PA-32-260, -300; PA-32R-300; PA-32-RT-300, -300T; PA-34-200 P/N 05-04197 ea.



AP

PIPER SUPERCUB PARTS



COMPLETE SUPERCUB FUSELAGE

Replacement fuselage for the PA 18 Supercub incorporating the latest improvements and mods. The fuselage tubes and fittings are all 4130 steel and the standard mods are: "X" reinforcement in the top deck, extended baggage with "dog leg" bulkhead reversed, standard baggage area increased to 180 lbs. capacity, removable rear seat bar, reinforcement sleeves under stabilizer attach bracket, modernized tabs and attach brackets. Completely FAA approved under PMA and STC. Excellent workmanship.

P/N 05-00466.....



PA18 UPPER DOOR

Constructed using all square tubing. FAA approved.
P/N 05-00459



PA18 LOWER DOOR

Latching mechanism greatly improved over original. Utilizes push rods instead of wires. Powder coated.
P/N 05-00460



PA18 STABILIZER

Bushings installed, powder coated and ready to cover. FAA-PMA approved.
P/N 05-00461



PA18 ELEVATOR

Bushings installed, powder coated and ready to cover. FAA-PMA approved.
P/N 05-00462



PA18 RUDDER

Bushings installed, powder coated and ready to cover. FAA-PMA approved.
P/N 05-00463



PA18 VERTICAL FIN

Bushings installed, powder coated and ready to cover. FAA-PMA approved.
P/N 05-00464

\$10 crate charge for all items above



PA18 TAILPOST

Bushings installed, powder coated and ready to cover. FAA-PMA approved.
P/N 05-00465



FLAP HINGE-OUTBOARD

For fabric wing piper models, powder coated. FAA-PMA approved.
P/N 05-00480



PA 18 FUSELAGE HANDLE

Oversized lifting handle can be used with winter gloves, 8" long with 2" clearance. Weld on, FAA-PMA approved.
P/N 05-00477



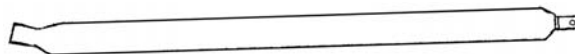
AILERON HINGE

For fabric wing piper models. Powder coated. FAA-PMA approved.
P/N 05-00478

PA-18 8.5' SPAR BLANK

P/N 05-03596

SEALED LIFETIME STRUTS WITH HEAVY DUTY FORKS



FAA-PMA - complies with all A.D.'s - high strength struts will not fail under wind or snow loads. \$20 CRATE CHARGE FOR LIFT STRUTS

| Description | Part Number | Price |
|--|-------------|-------|
| PA 18 Front Lift Strut | 05-00485 | . |
| PA 18 Heavy Duty Rear Lift Strut | 05-00486 | . |
| PA 12-14 Front Lift Strut | 05-00487 | . |
| PA 12-14 High Strength Rear Lift Strut | 05-00488 | . |
| PA18 Rear Lift Strut | 05-03868 | . |



PA18 ARCHES FOR FABRIC FORMERS

Complete set of 6 "turtle deck" arches precut to correct size, weld on as is. FAA-PMA
P/N 04-00469 **per set .**



PA 18 WING FITTINGS

Weld on, FAA-PMA approved.
Front left side.....P/N 05-00470



PA 18 REAR GEAR FITTING

Weld on, FAA-PMA approved.
Left side.....P/N 05-00474



PA 18 FRONT GEAR FITTING

Weld on, FAA-PMA approved. Fits right or left side.
P/N 05-00476



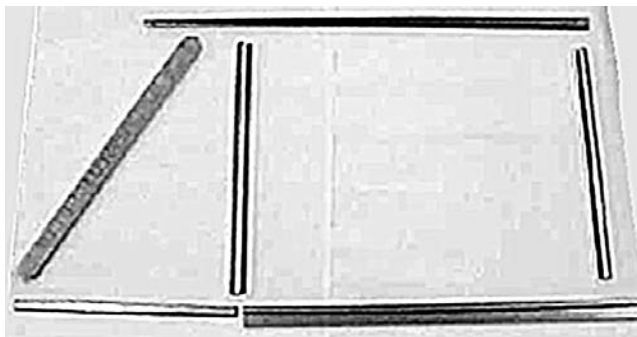
WELD-ON FLOAT FITTING

Weld-on float fitting for all models Piper Supercub, PA18. FAA approved by STC. Weighs less than similar fittings. \$475.00 for a pair.

P/N 05-02529.....

AP

PIPER SUPERCUB PARTS



FRONT LOWER WINDOW CHANNEL

Left Side FAA-PMA..... P/N 05-00491

AFT LOWER WINDOW CHANNEL

Left Side FAA-PMA..... P/N 05-00492

FRONT WINDOW CHANNEL

Left Side FAA-PMA..... P/N 05-00493

UPPER WINDOW FORMER

Left Side FAA-PMA..... P/N 05-00494

FORWARD VERTICAL WINDOW CHANNEL

Left Side FAA-PMA..... P/N 05-00495

AFT VERTICAL WINDOW CHANNEL

Left Side FAA-PMA..... P/N 05-00496

ADDITIONAL FAA-PMA PARTS FOR PA18 SUPERCUB

| Description | Part No. | Price |
|---|----------|-------|
| Lower Stabilizer brace wire attach. | 05-00509 | . |
| Piper hinge - half | 05-00510 | . |
| Interior tab | 05-00511 | . |
| Pulley bracket | 05-00512 | . |
| Pulley bracket | 05-00513 | . |
| Forward elevator pulley half | 05-00514 | . |
| Flap lever hinge - weld on fuselage or seat | 05-00516 | . |
| Flap pulley bracket | 05-00517 | . |
| Shock strut | 05-00518 | . |
| Trim cable pulley bracket | 05-00519 | . |
| fuel selector bracket | 05-00520 | . |
| Tailspring bracket | 05-00521 | . |
| Tailspring mount pad - forward | 05-00522 | . |
| Aileron pulley bracket | 05-00523 | . |
| Floorboard tabs | 05-00524 | . |
| Floorboard tabs | 05-00525 | . |
| Cabane Vee | 05-00526 | . |
| Elevator horn | 05-00530 | . |
| Rudder horn | 05-00531 | . |
| RH rudder pedal assy. | 05-00532 | . |
| LH rudder pedal assy. | 05-00533 | . |
| RH brake pedal assy. | 05-00534 | . |
| LH brake pedal assy. | 05-00535 | . |
| 3/8 Piper "U" channel - 4' lengths | 05-00537 | . |
| 5/8 barrel assy. - weld in lift strut ends | 05-00538 | . |
| Elevator ribs - full set for one | 05-00539 | . |
| Exhaust stack front - PA18 150 hp | 05-00542 | . |
| Exhaust stack rear - PA18 150 hp | 05-00543 | . |
| Muffler assy. - PA18 150 hp | 05-00544 | . |



PA18 LANDING GEAR

Specify right or left side.
 11/4 axle, heavy duty; FAA-PMA
 P/N 05-00489

11/2 axle, heavy duty; FAA-PMA
 P/N 05-00490

EXTENDED LANDING GEAR AVAILABLE - CALL FOR QUOTE!



REAR TORQUE TUBE SUPPORT & BEARING

Weld on; FAA-PMA P/N 05-00497



FRONT TORQUE TUBE SUPPORT & BEARING

Weld on; FAA-PMA P/N 05-00498



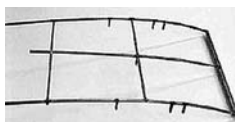
REAR STABILIZER ATTACH BRACKET

Tack welded; FAA-PMA P/N 05-00499



HEAVY DUTY 5/8 LIFT STRUT FORK

Rolled threads, stainless, heat treated.
 P/N 05-00501



TOP DECK SUPERSTRUCTURE

P/N 05-00502



JACK SCREW TOWER

P/N 05-00503



MUFFLER BAIL U452-093

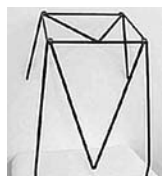
Muffler Bail Welded inside muffler out let to guard against Flame Tube failure and obstruction of exhaust outlet.
 P/N 05-02150



TAIL REPAIR SECTION - 4'

Without Jack screw tower.
 P/N 05-00504

With Jack screw tower
 P/N 05-00505



FIREWALL BULKHEAD REPAIR SECTION

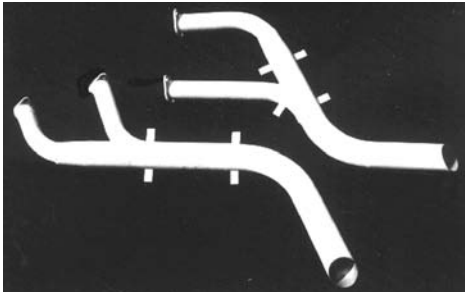
P/N 05-00506

AP

LUSCOMBE PARTS

(FAA/PMA APPROVED)

LUSCOMBE 8E & 8F EXHAUST STACKS



Left Hand Exhaust Stack.....P/N 05-07805.....
 Right Hand Exhaust Stack.....P/N 05-07810.....

LUSCOMBE CABIN HEAT SHROUD



8E & 8F AND 8A-2pc Stacks P/N 05-07820.....

CARBURETOR & CABIN HEAT SHROUD

For Luscombe 8A..... P/N 05-08115.....

RUDDER & ELEVATOR HINGE PIN & BRACKET



Hinge Pin.....P/N 05-07825.....
 Hinge Pin BracketP/N 05-07830.....

GAS CAP & LANDING LIGHT LENS



Luscombe Gas Cap.....P/N 05-07835.....
 Landing Light Lens.....P/N 05-07840.....
 Landing Light Lens.....P/N 05-07845.....

VERTICAL FIN FRONT ATTACH



Fitting P/N 05-07985.....

Note: This fitting is welded 4130 steel and complies with all provisions of A.D. 79-25-05. This fitting is required only on those Luscombes with the "round tip" vertical stabilizer.

TAILWHEEL LEAF SPRINGS



Complete AssemblyP/N 06-14600.....
 Main Leaf Only.....P/N 06-14700.....



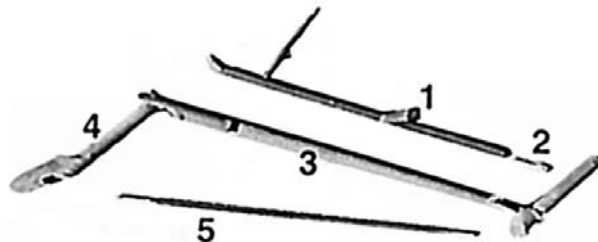
ALL-ALUMINUM LANDING GEAR FAIRING FOR STANDARD GEAR

Left.....P/N 05-07865.....
 Right.....P/N 05-07870.....

For Silflex Gear

Left.....P/N 05-07875.....
 Right.....P/N 05-07880.....

FAA/PMA LANDING GEAR PARTS (FOR STANDARD GEARS)



Left Hand Jack Strut (1)..... P/N 05-07885.....
 Right Hand Jack Strut (1)..... P/N 05-07890.....
 Fork End (S-9) (2)..... P/N 05-07895.....
 Left Hand Lower Leg (3)..... P/N 05-07900.....
 Right Hand Lower Leg (3)..... P/N 05-07905.....
 Left Hand Upper Arm (4)..... P/N 05-07910.....
 Right Hand Upper Arm (4)..... P/N 05-07915.....
 Tie Rod without fittings, 36 1/4" long (5) P/N 05-07920.....
 Left Hand Jack Strut (Silflex)..... P/N 05-07930.....
 Right Hand Gear Fairing P/N 05-07935.....

FAA/PMA WING PARTS

Left hand aileron..... P/N 05-00452.....
 Right hand aileron P/N 05-00453.....
 Left hand lift strut (metal wing)..... P/N 05-00454.....
 Right hand lift strut (metal wing) P/N 05-00455.....
 Carry-thru spar (front or rear)..... P/N 05-00456.....

FAA/PMA TAIL SECTION PARTS

Fin, square tip..... P/N 05-07940.....
 Rudder, square tip..... P/N 05-07945.....
 Rudder Horn for square tip rudder P/N 05-07950.....
 Tailwheel Leaf Spring Assembly P/N 06-14600.....
 Main Leaf only..... P/N 06-14700.....
 Rudder & Elevator Hinge Pin P/N 05-07970.....
 Rudder & Elevator Hinge Pin Bracket P/N 05-07975.....

AP

LUSCOMBE PARTS

(FAA/PMA APPROVED)

ALL ALUMINUM COWLING



- Nose Cowl P/N 05-07990.....
- Bottom Cowl P/N 05-07995.....
- Top Cowl P/N 05-08000.....
- L/H Cowl P/N 05-08005.....
- R/H Cowl P/N 05-08010.....

Note: Cowling is trimmed oversize requiring a finish trim for each individual airplane.

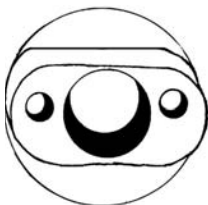
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FIREWALL DISHPAN

Used on Luscombe with an electrical system.

P/N 05-08015.....



FIREWALL TO ENGINE MOUNT RUBBER BUSHING

6 ea. required per aircraft.

P/N 05-08020.....



LUSCOMBE ENGINE MOUNT

For all Continental powered Luscombe, A-65 thru C-90

P/N 05-08025.....



MANUALS

- 8A Owner's Manual P/N 13-00230.....
- 8E Owner's Manual P/N 13-00235.....
- 8 Series Master Parts List, illustrated P/N 13-00240.....
- Service Manual, early fabric wings P/N 13-00245.....

BLANK INSTRUMENT PANEL



P/N 05-08030.....

CONTROL CABLES (GALVANIZED)



- Brake Cable Assembly P/N 05-08035.....
- Elevator Cable, SN 1-4199 P/N 05-08040.....
- Elevator Cable, SN 4200 and up P/N 05-08045.....
- Left Hand Rudder Cable P/N 05-08050.....
- Right Hand Rudder Cable P/N 05-08055.....
- Stick to Aileron Cable P/N 05-08065.....
- Left Hand or Right Hand Aileron Balance Cable, 16 ft., 7/8 in. P/N 05-08070.....
- Left Hand or Right Hand Aileron Balance Cable, 15 ft., 10-3/4 in. P/N 05-08075.....
- Forward Trim Cable P/N 05-08080.....
- Aft Trim Cable Assembly (2 req'd) P/N 05-08085.....

8A EXHAUST COMPONENTS FITS ALL A-65 CONTINENTAL ENGINES



- Rear Crossover P/N 05-08090.....
- Left Hand Stack P/N 05-08095.....
- Right Hand Stack P/N 05-08100.....
- Exhaust Clamp P/N 05-08105.....
- Complete Assembly (includes 2 exhaust clamps) P/N 05-08110.....

LUSCOMBE 8A CARBURETOR & CABIN HEAT SHROUD

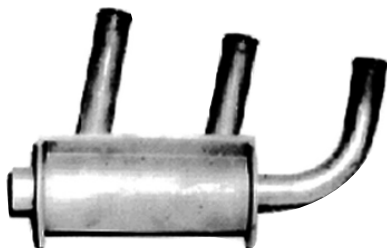


Fits on U8627-5 Stack..... P/N 05-08115.....

STINSON PARTS

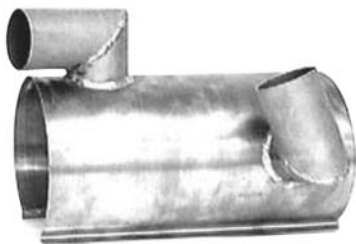
(TYPE CERTIFICATE APPROVED)

EXHAUST SYSTEM



- Muffler**
 SN 1-3109 P/N 05-08120.....
 SN 3110 and up P/N 05-08125.....
- Perforated Tube**
 SN 1-3109 P/N 05-08130.....
- Perforated Tube**
 SN 3110 and up P/N 05-08135.....
- Tailpipe, Left Hand**
 SN 112-3109 P/N 05-08140.....
 SN 3110 and up P/N 05-08145.....
- Tailpipe, Right Hand**
 SN 112-3109 P/N 05-08150.....
 SN 3110 and up P/N 05-08155.....

HEAT SHROUDS



- Carb. Heat Shroud P/N 05-08165.....
 Cabin Heat Shroud, For SN 744 & up P/N 05-08170.....
 Shroud Clip P/N 05-08175.....

COMPLETE SPINNER ASSEMBLIES

READY FOR INSTALLATION FOR STINSON WITH WOOD OR METAL PROPELLERS.



- Wood Propeller Spinner Assembly P/N 05-08180.....
 Metal Propeller Spinner Assembly P/N 05-08185.....

CUFF AIR INDUCT

- For 108, 108-1, 108-2, 150 hp. (SN 1-2249)
 P/N 05-08190.....
- For 108-2, 108-3, 165 hp. (SN 1-2249)
 P/N 05-08195.....

FUEL GAUGE & SENDER

DIRECT REPLACEMENT FOR ORIGINAL AC GAUGE AND SENDER

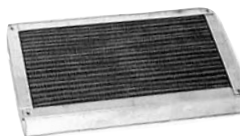


- Gauge P/N 05-08200.....
 Sender P/N 05-08205.....



RUDDER ARM

- P/N 05-08210.....



CARBURETOR AIR FILTER

- For Franklin 150-165 hp. Stinson 108 Series P/N 05-08215.....
- Leading Edge Slat for all 108 Series P/N 05-08220.....
 Leading Light Lens P/N 05-08225.....

STINSON MANUALS

- OWNER'S OPERATING MANUAL
Stinson
 108-1
 Voyager 150
- 108 Series Parts Catalog
 P/N 05-08230.....
- General Service Manual
 P/N 05-08235.....
- Service Bulletins and Letters
 P/N 05-08240.....
- Stinson Specs, ADs and STCs
 P/N 05-08245.....
- 108 CAA Operating Limits
 P/N 05-08250.....
- 108-1 CAA Operating Limits
 P/N 05-08255.....
- 108-2 CAA Operating Limits
 P/N 05-08265.....
- 108-3 CAA Operating Limits P/N 05-08270.....
- 108-1 Owner's Manual P/N 05-08275.....
- 108-2 Owner's Manual P/N 05-08280.....
- 108-3 Owner's Manual P/N 05-08285.....
- 108-1 Seaplane Operating Limits P/N 05-08290.....
- 108-2 Seaplane Operating Limits P/N 05-08295.....
- 108-3 Seaplane Operating Limits P/N 05-08300.....
- 108 Ski-Plane Supplement P/N 05-08305.....
- 108-1 Ski-Plane Supplement P/N 05-08310.....
- Appendix A Supplement P/N 05-08315.....
- Stinson Story of Aircraft Progress P/N 05-08320.....
- Stinson Time-Speed-Distance Computer P/N 05-08325.....
- Stinson Computer Instructions P/N 05-08330.....



STINSON PARTS

(TYPE CERTIFICATE APPROVED)

ALUMINUM NOSE COWL



Applicable to 108 through 108-3 series Stinsons.

- Nose Cowl P/N 05-08335
- Bottom Cowl P/N 05-00086
- Left side Cowl P/N 05-00087
- Right side Cowl..... P/N 05-00088

AP



LANDING GEAR FAIRINGS

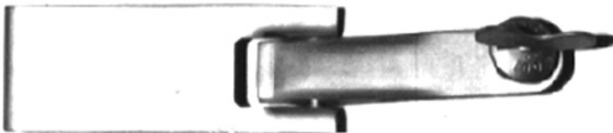
- Left Fairing..... P/N 05-08340.....
- Right Fairing P/N 05-08345.....



FUSELAGE TO LANDING GEAR FILLETS

- Left..... P/N 05-08350
- Right P/N 05-08355

ENGINE COWL LEVER ASSEMBLY

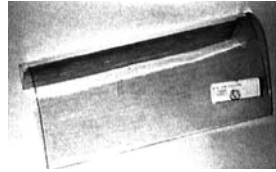


- Cowl Fastener Assembly..... P/N 05-08365
- Cowl Fastener Pin..... P/N 05-08370
- Cowl Fastener Receptacle..... P/N 05-08375
- Receptacle Cup..... P/N 05-08380

WING LIFT STRUTS



- Front Strut P/N 05-08385
- Rear Strut P/N 05-08390



LANDING LIGHT LENS

P/N 05-08225

PITOT TUBE



P/N 05-08395



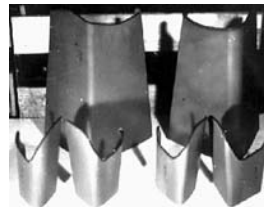
CONTROL SURFACE BEARING

P/N 05-08400

CONTROL CABLES

| Description | No. Req'd | P/N | Price |
|--|-----------|--------------------|-------|
| Aileron Idler Cable..... | 2..... | P/N 05-08405 | |
| Aileron Control Cable | 2..... | P/N 05-08410 | |
| Flap Control Cable | 2..... | P/N 05-08415 | |
| Rudder Cable—1946, 1947..... | 2..... | P/N 05-08420 | |
| Rudder Cable, 1948..... | 2..... | P/N 05-08425 | |
| Aileron Idler Cable (in fuselage)..... | 1..... | P/N 05-08430 | |
| Control Column Cable, Left Half | 1..... | P/N 05-08435 | |
| Control Column Cable, Right Half | 1..... | P/N 05-08440 | |
| “Up” Elevator Cable..... | 1..... | P/N 05-08445 | |
| “Down” Elevator Cable | 1..... | P/N 05-08450 | |
| Upper Flap Control Cable (in fuselage) | 1..... | P/N 05-08455..... | |
| Elevator Tab Control Cable, SN 1 thru 2249 | 1..... | P/N 05-08465..... | |
| Elevator Tab Control Cable, SN 2250 and up | 1..... | P/N 05-08470..... | |
| Rudder Trim Cable, SN 2250 and up | 2..... | P/N 05-08475..... | |
| Rudder Trim Driver Cable, SN 2250 and up | 1..... | P/N 05-08480..... | |

STRUT FILLETS



- Rear Lift Strut Upper Fillet
 - Left P/N 05-08485..... ea.
 - Right P/N 05-08490..... ea.
- Forward Lift Strut Upper Fillet
 - Left P/N 05-08495..... ea.
 - Right P/N 05-08500..... ea.
- Lift Strut, Lower Fillet, left.
 - P/N 05-08505..... ea.
- Lift Strut, Lower Fillet, right
 - P/N 05-08510..... ea.

AERONCA – CHAMPION – CITABRIA PARTS

(FAA/PMA APPROVED)

WING LIFT STRUTS NEW, IMPROVED STEEL STRUTS—SEALED AND OILED TO PREVENT INTERNAL CORROSION. (Except Decathlon aluminum front struts)



| | |
|------------------------------------|--------------------|
| 7AC Front Strut | P/N 05-08515 |
| 7AC Rear Strut | P/N 05-08520 |
| 11AC Front Strut | P/N 05-08525 |
| 11AC Rear Strut | P/N 05-08530 |
| Citabria Front Strut | P/N 05-08535 |
| Citabria Rear Strut | P/N 05-08540 |
| Decathlon Front Strut, Left | P/N 05-08545 |
| Decathlon Front Strut, Right | P/N 05-08550 |
| Decathlon Rear Strut | P/N 05-08555 |
| Scout Front Strut | P/N 05-08565 |
| Scout Rear Strut | P/N 05-08570 |

WING LIFT STRUT FORK



P/N 05-08575

7AC CONTROL CABLES (GALVANIZED STEEL)



| | |
|--|--------------------|
| Short Aileron Cable (2 req'd) | P/N 05-08580 |
| Rudder Cable, Long (2 req'd) | P/N 05-08585 |
| Rudder Cable, Short (2 req'd) | P/N 05-08590 |
| Aileron Control Cable (4 req'd) | P/N 05-08595 |
| Brake Cable and Housing Assembly (2 req'd), (PMA App.) | P/N 05-08600 |
| Brake Cable Only (2 req'd) | P/N 05-08605 |
| Down Elevator Cable (1 req'd) | P/N 05-08610 |
| Aeronca Cown Elevator Cable | P/N 05-08615 |
| Trim Cable (2 req'd) | P/N 05-08620 |
| Up Elevator Cable (1 req'd) | P/N 05-08625 |

CITABRIA AIR INDUCTION TUBE



P/N 05-08630

CITABRIA FUEL GAUGE COVER



P/N 05-08635

TAILBRACE WIRE LUG



P/N 05-08640

EXHAUST SYSTEM FOR 7AC / 11AC



| | |
|-----------------|--------------------|
| LH Stack | P/N 05-08705 |
| RH Stack | P/N 05-08710 |
| Heat Muff | P/N 05-08715 |

CITABRIA FUEL VENT DEFLECTOR



P/N 05-08655

STAINLESS STEEL TAILBRACE WIRE



7AC, 7EC, 7FC—UPPER & LOWER

| | |
|---|--------------------|
| Citabria, Decathlon, Scout—Lower | |
| 1. Wire Only | P/N 05-08665 |
| 3. Assembly | P/N 05-08670 |
| Citabria, Decathlon, Scout—Upper | |
| 2. Wire Only | P/N 05-08675 |
| 4. Assembly | P/N 05-08680 |

ALL ALUMINUM COWLING



| | |
|--------------------------|--------------------|
| Nose Cowl | P/N 05-08685 |
| Fuselage Cowl (7AC only) | P/N 05-08690 |
| Top Cowl | P/N 05-08695 |
| Bottom Cowl | P/N 05-08700 |

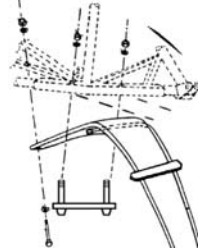
LANDING GEAR U-BOLTS



| | |
|--------------------------|--------------------|
| Citabria/Decathlon | P/N 05-08645 |
| Scout (new style) | P/N 05-08650 |

(Hardware required—see below)

LANDING GEAR ATTACH HARDWARE FOR CITABRIA, DECATHLON, SCOUT



For Citabria and Decathlon

| | |
|---------------------------|--------------------|
| Nut (6 required) | P/N 05-08720 |
| Bolt (2 required) | P/N 05-08725 |
| Cupped Washer (2 req.) | P/N 05-08730 |
| Washer (6 required) | P/N 05-08735 |

For Scout

| | |
|---------------------------|--------------------|
| Nut (6 required) | P/N 05-08720 |
| Bolt (2 required) | P/N 05-08745 |
| Cupped Washer (2 req.) | P/N 05-08730 |
| Washer (6 required) | P/N 05-08735 |

OLEO SHOCK STRUT

Fits 7ECA, 7GCAA and 7GCBC:



| | |
|------------------------------------|--------------------|
| with High Energy Taxi Spring | P/N 05-08740 |
| with Standard Spring | P/N 05-08750 |
| Fits 7AC and 11AC | P/N 05-08755 |
| 7AC and 11AC Spring Only | P/N 05-08760 |

LANDING GEAR OLEO CASE FRAME



Oleo Case Frame (Uncovered)

| | |
|----------------------|--------------------|
| 7AC & 11AC Series .. | P/N 05-08765 |
| Early Citabria | P/N 05-08770 |

TAILWHEEL LEAF SPRINGS – COMPLETE SETS



| | |
|----------------------------|--------------------|
| Citabria/Decathlon (short) | P/N 05-08780 |
| Scout (long) | P/N 05-08785 |

LANDING GEAR AXLE ASS'Y. FOR AERONCA & CITABRIA



| | |
|---------------------------------|--------------------|
| Early Citabria Axle Strut | P/N 05-08790 |
| Aeronca Axle Strut | P/N 05-08795 |

AP

ERCOUPE – FORNEY – ALON – MOONEY PARTS

(TYPE CERTIFICATE APPROVED)

ALL ALUMINUM COWLING



NOSE COWL ASSEMBLIES

With no cold air intake hole
P/N 05-08800.....

With cold air intake hole
P/N 05-08805.....

SIDE COWL ASSEMBLIES

DZUS Fasteners..... P/N 05-08810
CAMLOC Fasteners..... P/N 05-08815

BOTTOM COWLS

P/N 05-08820

SPARK PLUG FAIRINGS



Mooney Fairing (top in photo, approx. 17 inches long)
P/N 05-08825

Ercoupe Fairing (bottom in photo, approx. 14-3/4 inches long)
P/N 05-08830



ERCOUPE ENGINE MOUNT

P/N 05-08835.....



FILLER NECK GROMMET

P/N 05-08840



NOSE GEAR STEERING BALL

This is the original type steering ball as used on Ercoupe, Forney and Alon.

P/N 05-08845



IMPROVED STEERING JOINT BALL KIT

This kit consists of rod-end bearing and all necessary hardware. It is FAA approved for all Ercoupe, Forney, Alon and M-10. For use with the part number 52035 push-rod that has the male threaded stud. (Steering Collar not included)

P/N 05-08905

Push Rod..... P/N 05-08910

EXHAUST SYSTEM FOR ERCOUPE 415 SERIES & EARLY FORNEY



Left Hand Stack (stainless).....

P/N 05-08920

Right Hand Stack (Stainless).....

P/N 05-08930

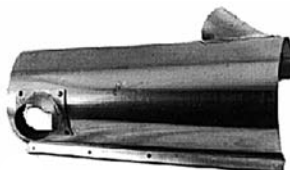
Muffler..... P/N 05-08935.....

Carburetor Heat Shroud.....

P/N 05-08940

Cabin Heat Shroud.....

P/N 05-08945



CABIN HEAT SHROUD ASSEMBLY FOR ALL ERCOUPE MODELS AFTER 1945

P/N 05-08945



ERCOUPE WINDOW WELTS

Two required per plane. (Priced each).

P/N 05-08950



LANDING GEAR SHOCK PADS

This material has superior weathering qualities. This unaffected by hydraulic fluid and has greater resistance to static load.

Pads (8 required per plane)
P/N 05-08850.....

Washer (SN 813 and up) (14 required per plane)
P/N 05-08855.....

6 GALLON FUSELAGE TANKS



For Ercoupe, welded alum., SN 2623 & up
P/N 05-08865.....

For Forney, Alon
P/N 05-08870

For M-10
P/N 05-08875.....

WELDED 9-GALLON WING TANK



For Forney, Alon and M-10 Models with gauge in left hand tank.

Left Hand Tank (48147)
P/N 05-08885

Right Hand Tank
P/N 05-08890



CARBURETOR HEAT SHROUD FOR ALL ERCOUPE MODELS

P/N 05-08895.....

BLANK INSTRUMENT PANEL



Lay out your instrument and radio arrangement using this blank Ercoupe Panel which has locating holes only for the two control columns. FAA field approval required..... P/N 05-08900.....

AP

NAVION – TAYLORCRAFT PARTS

(FAA/PMA APPROVED)

NAVION PARTS



Aircraft Spruce is a factory authorized distributor for these Navion parts manufactured under FAA/PMA approval. These parts are eligible for installation on all Navion models unless otherwise noted.

| Description | Navion P/N | Part No. | Price |
|--|--------------------|----------|-------|
| Navion Fuel Level Transmitter Gasket (6 hole) | 145-48237 | 05-01299 | . |
| Fuel Selector Valve Main-off | 147-30013-201 | 05-04271 | . |
| Fuel Selector Valve Main-Auxoff | 147-30013-202 | 05-04272 | . |
| Fuel Selector Valve Left-Main-RGT-O | 147-30013-203 | 05-04273 | . |
| Digital fuel qty gauge Main | 147-40002-1001 | 05-04274 | . |
| Digital fuel qty gauge MN/AUX | 147-40002-1002 | 05-04275 | . |
| Digital fuel qty gauge L/R | 147-40002-1003 | 05-04276 | . |
| Fuel level Transmitter 5 hole | 173-70010-20 | 05-04277 | . |
| Fuel level Transmitter 6 hole | 173-70010-10 | 05-04278 | . |
| Fuel level Transmitter AUX TNK | 145-51071-4 | 05-04279 | . |
| Fuel level Transmitter TIP TNK | 161.30015.67 | 05-04280 | . |
| Flush Fuel Cap | 147-30012-150 | 05-04281 | . |
| Gear Switches Main - Nose | 147-40002-10 | 05-04282 | . |
| Mixture Cable-Vernier | 205-30001-1002 | 05-04283 | . |
| Propeller Cable-Vernier | 205-30001-1003 | 05-04284 | . |
| Baggage Door | -- | 05-04285 | . |
| Overhead Panel | 147-40002-136-1 | 05-04286 | . |
| Cable Roller Assembly Set of 4 | 145-52301-3 | 05-04287 | . |
| Primary Monitor - CHT, EGT, and more | 147-40002-1007 | 05-04288 | . |
| Pilot & Co-Pilot Sholder Restraints | 173-53001 | 05-04289 | . |
| Nose Gear Seal Kits | 145-S145-34102-900 | 05-04290 | . |
| Main Gear Seal Kit | 145S33102-900 | 05-04291 | . |
| Aft. Equipment rack | 147-40005 | 05-04292 | . |
| Texas Patch LH | 161-31023-1 | 05-04293 | . |
| Texas Patch RH | 161-31023-2 | 05-04294 | . |
| Canopy Felt with Inst Letter 28 | -- | 05-04295 | . |
| Heated Pitot Tube Mast | 161-51002-11 | 05-04296 | . |
| Sloped Windshield | 162-31801 | 05-04297 | . |
| Fuel Valve Left/Right/Off FMA PMA C120 AND C140 | SHA200F202-120 | 05-04298 | . |
| Fuel Valve Left/Right/Both/off FMA PMA C120 AND C140 | SHA200F204-140 | 05-04299 | . |

(FAA/PMA APPROVED)

TAYLORCRAFT ENGINE MOUNT

For 65 hp. Continental P/N 05-08955.....
For 85 hp. Continental P/N 05-08960.....

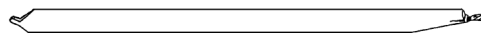


TAYLORCRAFT EXHAUST SYSTEM

For all 65 hp. Continental engines in B series through BC 12 series.
P/N 05-08965.....



TAYLORCRAFT B, BC, & LIFT STRUTS (OILED AND SEALED)



TaylorCraft Front Lift Strut..... P/N 05-08970.....
TaylorCraft Rear strut..... P/N 05-08975.....

Note: all post WWII will not work on a Taylor A/C F/L2M

TAYLORCRAFT LEADING EDGE SKINS



Outboard Leading Edge (54 1/4") P/N 05-08980.....
Center Leading Edge (57 1/4")..... P/N 05-08985.....
Inboard Leading Edge (64") P/N 05-08990.....

Note: all post WWII will not work on a Taylor A/C F/L2M

TAYLORCRAFT HEAT SHROUD

P/N 05-08995



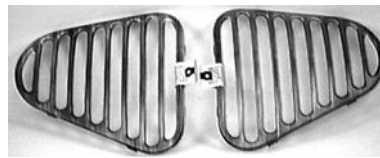
TAYLORCRAFT ALUMINUM NOSE COWL

Applicable to B series and BC12D Continental powered Taylorcraft (cowl grills not included)

P/N 05-09005.....



TAYLORCRAFT NOSE COWL GRILLS



Stamped aluminum grills with natural aluminum finish. For all standard Taylorcraft nose cowls.

Left Grill..... P/N 05-09010.....
Right Grill..... P/N 05-09015.....

TAYLORCRAFT TAILWHEEL SPRING SET

P/N 05-09020



AP

CLEVELAND WHEELS & BRAKES



CLEVELAND WHEELS & BRAKES FOR HOMEBUILTS

Wheels with matching hydraulic disc brakes are made from magnesium alloy castings to give a lightweight, durable unit. Wheels complete with bearings and wheel covers. Brake assembly has linings installed. Sold in pairs only.

500 x 5, Wt. 5.75 Lbs. Each (Wheel P/N 40-78B, Brake P/N 30-9)
 Kit P/N 199-102 (Std. Disc)..... /Pr
 Kit P/N 199-102C (Chrome Disc)..... /Pr
 Use Lining P/N 66-106. Fits 1-1/4" dia. axles.

600 x 6, Wt. 7-3/4 Lbs. Each (Wheel P/N 40-59A, Brake P/N 30-59A)
 Kit P/N 199-104 (Std. Disc)..... /Pr
 Kit P/N 199-104C (Chrome Disc)..... /Pr
 Use Lining P/N 66-112. Fits 1-1/2" dia. axles.

600 x 6, with Master Cylinders for Defiant
 Special set consists of (2) P/N 40-75B wheels, (2) P/N 30-52 brake assemblies and (2) P/N 10-34 master cylinders.
 P/N 199-133X

500 x 5 NOSE WHEEL - Magnesium, with bearings.
 For 1-1/4" dia. axle..... P/N 40-77C

600 x 6 NOSE WHEEL - Anodized aluminum, with bearings.
 For 1-1/2" dia. axle..... P/N 40-56



HEAVY-DUTY CLEVELAND WHEELS & BRAKES FOR HOMEBUILTS

The heavier-duty brake discs, linings and hardware in these kits will increase braking capacity for the heavier, faster-landing aircraft now being designed & built.

#199-93 UPGRADE KIT - For #199-102 standard wheels and brakes. Upgrades current 40-78B/ 30-9 to new 40-230/30-181 specs. Consists of #66-106 linings, discs, shims, bolts, rivets and nameplates for 2 wheels & brakes.
 P/N 199-93

#199-156 KIT FOR VARIEZE (AIRCRAFT TO 1500 LBS) - Kit consists of two 40-230 wheel assemblies and two 30-181 brake assemblies. Uses #66-106 linings. Fits 1-1/4" dia. axles.
 P/N 199-156

#199-152 KIT FOR LONG-EZ & COZY (AIRCRAFT TO 2200 LBS) - Kit contains two 40-151 wheel assemblies and two 30-133 brake assemblies. Uses #66-55 linings. Fits 1-1/4" dia. axles.
 P/N 199-152



CLEVELAND WHEELS & BRAKES FOR AMPHIBIANS

Although magnesium wheels and brakes are considerably lighter, magnesium is subject to corrosion and should not be used for amphibious operation. Only organic linings should be used on all brakes. All parts of the 500 x 5 size wheels and brakes for amphibians are constructed of anodized aluminum for water resistance. Although a special 40-74 series of 600 x 6 wheels and brakes are manufactured for amphibious use, with chrome plated bearings and brake disc and water drainage holes, they are too costly for use on homebuilt aircraft.

The use of standard Cleveland aluminum wheels with standard bearings on amphibian aircraft is suggested. If bearings are kept well greased, reasonable service can be expected, but earlier bearing replacement should be anticipated.

500 x 5 (Anodized Aluminum)
 Kit P/N 199-103 (Std. Disc) Pr
 Kit P/N 199-103C (Chrome Disc) Pr

600 x 6 (Anodized Aluminum)
 Kit P/N 199-105 (Std. Disc) Pr
 Kit P/N 199-105C (Chrome Disc) Pr

500 X 5 ALUMINUM NOSE WHEEL, P/N 40-87C

AEROSHELL GREASE FOR WHEEL BEARINGS

Aeroshell #22 grease is recommended for lubrication of Cleveland wheel bearings and is also applicable to other similar wheel bearings. Meets Mil-G-81322.
 14 oz. tube P/N 08-05490

CLEVELAND HOMEBUILDERS SPECIAL WHEEL & BRAKE SET PACKAGES



PACKAGE NO. 1 - Includes 2 Cleveland 5.00-5 magnesium wheels & brakes plus (2) 6 ply tires & tubes. (Wt. approx. 28 lbs.)

A w/McCreary Air Trac Tires & Tubes P/N 06-00100
 B w/Goodyear Flight Custom II Tires (Goodyear's latest design) P/N 06-00200

C w/Lamb Tires & Tubes (11.400 x 5) P/N 06-00300

PACKAGE NO. 2 - Package No. 1 plus 2 Cleveland #10-35 master cylinders. (Wt. approx. 30 lbs.)

A w/McCreary Air Trac Tires & Tubes..... P/N 06-00400

B w/G.Year Flight Custom II Tires & Tubes.. P/N 06-00500

C w/Lamb Tires & Tubes (11.400x5) P/N 06-00600

PACKAGE NO. 3 - Includes 2 Cleveland 6.00-6 magnesium wheels and brakes plus two 4 ply tires and tubes. (Wt. approx. 32 lbs.)

A w/McCreary Air Trac Tires & Tubes..... P/N 06-00700

B w/G.Year Flight Custom II Tires & Tubes.. P/N 06-00800

PACKAGE NO. 4 - Package No. 3 plus 2 Cleveland #10-35 master cylinders. (Wt. approx. 34 lbs.)

A w/McCreary Air Trac Tires & Tubes..... P/N 06-00900

B w/G.Year Flight Custom II Tires & Tubes.. P/N 06-01000

PACKAGE NO. 5 - Includes 2 Cleveland 6.00-6 magnesium wheels & brakes plus two low-profile lightweight 6-ply 15x6.00-6 tires & tubes. (Wt. approx. 32 lbs.)

A w/McCreary Air Trac Tires & Tubes..... P/N 06-01100

B w/G.Year Flight Custom II Tires & Tubes.. P/N 06-01200

PACKAGE NO. 6 - Package No. 5 plus 2 Cleveland #10-35 master cylinders. (Wt. approx. 34 lbs.)

A w/McCreary Air Trac Tires & Tubes..... P/N 06-01300

B w/G.Year Flight Custom II Tires & Tubes.. P/N 06-01400

PACKAGE NO. 7 FOR DEFIANT - Includes 2 Cleveland 6.00-6 magnesium wheels & brakes (P/N 199-133X) plus (2) 6.00-6 McCreary 6 ply tires & tubes plus 2 master cylinders..... P/N 06-01500

HEGAR WHEEL KITS



Spun aluminum wheel kit includes aluminum wheel halves, hubs, 5/8 bearings, valve, tubeless kit and all necessary hardware. Compatible with Hegar brakes.

Note: Order tires separately.

4X6 Offset rim..... P/N 06-00318

4X6 Symmetrical (Quicksilver®)..... P/N 06-00319

5X6 Offset rim P/N 06-00320

5X6 Symmetrical (Quicksilver®) P/N 06-00321

6X6 Offset rim P/N 06-00322

6X6 Symmetrical (Quicksilver®)..... P/N 06-00323

The following Hegar wheels are designed to fit Quicksilver® nose gear allowing clearance for the steering fork.

3.5X5 MX(L) Nose Wheel P/N 06-00324

3.5X6 MX(L) Nose Wheel P/N 06-00325

HEGAR SPUN AND BILLET ALUMINUM WHEELS WITH BRAKES



6" SPUN ALUMINUM WHEEL - Includes. 2 - 6" spun aluminum wheels. 2 - 5" calipers and 4-1/2" rotors. all lines and fittings. axles included 5/8" or 3/4". 5/8" precision ball bearings are 800 GVW. 3/4" precision ball bearings are 1100 GVW. Note: To be run tubeless, but tubes may be used. 3-3/4 lbs. per side wheel and brake.

6S X 4 - 4" Wide Wheel X 6" Diameter..... P/N 06-01268

6S X 5 - 5" Wide Wheel X 6" Diameter..... P/N 06-01269

6S X 6 - 6" Wide Wheel X 6" Diameter..... P/N 06-01270

6" BILLET ALUMINUM WHEEL - 6B X 5 W/ 5" Brake Assembly. kit includes. 2 - 6" billet aluminum wheels. 2 - calipers and 4-1/2" rotors. all lines and fittings. 3/4" axles included. 3/4" precision all bearings 1500 GVW. Note: Uses tube with 90° valve stem.... P/N 06-01271

6" BILLET ALUMINUM WHEEL - 6B X 5 W/ 6-3/8" Brake Assembly. kit includes. 2 - 6" billet aluminum wheels. 2 - calipers and 6-3/4" rotors. all lines and fittings. 1-1/4" precision ball bearings 1800 GVW per set. 3/4" precision ball bearings 1500 GVW per set. Note: Retro fits Cleveland brakes. Uses tubes with 90° valve stem. P/N 06-01272

5" BILLET ALUMINUM WHEEL - 5B X 5 W/ 6-3/8" Brake Assembly. kit includes. 2 - 5" billet aluminum wheels. 2 - calipers and 6-3/8" rotors. all lines and fittings. 1-1/4" precision ball bearings 1800 GVW per set. 3/4" precision ball bearings 1500 GVW per set. Note: Retro fits Cleveland brakes. Uses a tube with 90° valve stem P/N 06-01273

HEGAR EXTERNAL DISC BRAKES

Heavy duty hydraulic external disk brakes for use with all Hegar wheels. Black anodized billet aluminum, 1/8" thick steel disk. Set includes 15 feet of high pressure nylon brake line, fluid with bleeder kit, and fittings. Axles and master cylinders must be ordered separately. Specify 5/8" or 3/4" bearings.
 P/N 06-00326

LG

MATCO WHEELS & BRAKES

NOTE: Our prices include 2 wheels and 2 brakes (set)

W51LT/LXT



The W51LT/LXT is a 5" wheel with a 4.775" width with an additional 1.23 inch caliper spacing. Bearing spacing is 3.084" and axle spacing is 1.00". The total weight of this wheel and brake assembly is 9.2 Lbs. The bearing axle diameter is 1.25". Torque rating is 4266 in-lb for the W51LT and is 6143 in-lb for the W51LXT. W51LT is recommended for Cozy Mark IV and the W51LXT is used on the Glasair.

| | |
|----------------------|--------------------|
| W51LT | P/N 06-00079 |
| W51LT w/axles | P/N 06-00568 |
| W51LXT | P/N 06-00412 |
| W51LXT w/axles | P/N 06-00569 |

WE51



The WE51 is a 5" wheel with 4.3" width with an additional 1.39" caliper spacing. Bearing spacing is 3.27" and axle spacing is 0.945". The total weight of this wheel and brake assembly is 7.5 lbs. The bearing axle diameter is 1.25". Torque Rating (@450 PSI): 2085 inlb. Any 500X5 tire and tube combination can be used with this tire.

| | |
|--------------------|--------------------|
| WE51 | P/N 06-00445 |
| WE51 w/axles | P/N 06-00570 |

W51L



MATCO mfg produces a superior 5" wheel and brake assembly for use with aircraft requiring less than 1420 lbs per wheel. This model uses 1.25" TAPER/ROLL bearings. The W51L is a 5" wheel with 4.6" width with an additional 1.23" caliper spacing. Bearing spacing is 3.084" and axle spacing is 1.285". The total weight of this wheel and brake assembly is 6.6 lbs. The bearing axle diameter is 1.25".

| | |
|------------|--------------------|
| W51L | P/N 06-01710 |
|------------|--------------------|

W50CC



The W50CC is a 5" wheel with a 3.7" width with an additional 1.75" caliper spacing. Bearing Spacing is 3.0" and axle spacing is 2.5". The total weight of this wheel and brake assembly is 4.5 lbs. excluding the axle assembly. This wheel uses a "Lamb" type tire which is 11x400x5 and requires a tube with a 90 degree valve stem. Torque Rating (@450 PSI): 1540 in-lb.

| | |
|-------------|--------------------|
| W50CC | P/N 06-00470 |
|-------------|--------------------|

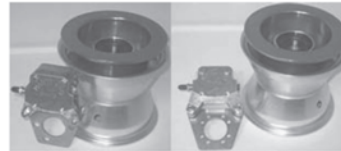


W60CC .625

Matco mfg produces a superior inch wheel and brake assembly for use with aircraft requiring less than lbs per wheel. This model uses inch bearings.

This is a W60CCD .625 is a 6" inch wheel. The bearing axle diameter is .625 inches.
P/N 06-00938.....

MMHE6B



MHE6B-SC MHE6B

The MHE6B E SERIES is a 6" wheel with 5.375" width with an additional 1.39 inch caliper spacing. Bearing spacing is 2.71" and axle spacing is 0.68". The total weight of this wheel and brake assembly is 5.8 lbs. The bearing axle diameter is 1.25". Use on various light support aircraft. Torque Rating (@450 PSI): 2085 in-lb. Order axles separately.

| | |
|--------------|--------------------|
| MHE6B..... | P/N 06-00444 |
| MHE6BSC..... | P/N 06-00443 |

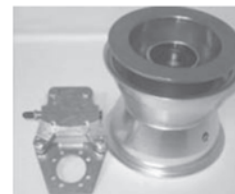
W600XT



The W600XT is a 6" wheel with 6.3125" width with an additional 1.37" caliper spacing. Bearing spacing is 3.42" and axle spacing is 1.78". The total weight of this wheel and brake assembly is 11.9 lbs. The bearing axle diameter is 1.50". Torque Rating (@450 PSI): 6441 inlb. Static Capacity: 1860 lbs. Load Limit: 5580 lbs. Order axles separately.

| | |
|--------------|--------------------|
| W600XT | P/N 06-00413 |
|--------------|--------------------|

MH6B



The MH6B is a 6" wheel with 5.375" width with an additional 1.24" caliper spacing. Bearing spacing is 2" and axle spacing is 2". The total weight of this wheel and brake assembly is 4.4 lbs. The bearing axle diameter is 0.625". The NEW MH6B is now produced as a CNC spun wheel with a Tenzalloy hub center and a NEW higher torque caliper. Torque Rating (@450 PSI):1540 in-lb. StaticCapacity:660 lbs.

| | |
|--------------|--------------------|
| MH6B | P/N 06-16810 |
| MH6B-S | P/N 06-00447 |

W60



MATCO mfg produces a superior 6" wheel and brake assembly for use with aircraft requiring less than 1420 lbs per wheel. This model uses 1.25" TAPER/ROLL bearings. The W60 is a 6" wheel with 4.375" width with an additional 1.23" caliper spacing. Bearing spacing is 2.5" and axle spacing is 1.25". The total weight of this wheel and brake assembly is 7.1 lbs. The bearing axle diameter is 1.25".

| | |
|----------|--------------------|
| W60..... | P/N 06-02160 |
|----------|--------------------|

W60CC .75



Matco mfg produces a superior 6" inch wheel and brake assembly for use with aircraft requiring less than 660 lbs per wheel. This model uses 0.75 inch BALL bearings. (Check the product comparison table for other bearing and caliper configurations).

The W60CCD.75 is a 6" inch wheel with 4.38 inch width with an additional 1.75 inch caliper spacing. Bearing spacing is 3 inches and axle spacing is 1 inches. The total weight of this

wheel and brake assembly is 5.55 pounds. The bearing axle diameter is 0.75 inches.
P/N 06-00939



MATCO WHEELS & BRAKES

NOTE: Our prices include 2 wheels and 2 brakes (set)

| Matco Part No | Aircraft Spruce | Bearing Axle Dia. BB=Ball TRB=Taper Roll | Load Limit (lbs.) | Static Capacity (lbs.) | Brake Reline Kit | Weight (lbs.) | Tire Size | Tire Type | Price |
|--|-----------------|--|-------------------|------------------------|------------------|---------------|-----------|--------------|-------|
| CNC SPUN WHEELS: INTERNAL CALIPER | | | | | | | | | |
| MH6B | 06-16810 | 0.625BB | 2000 | 660 | BRL-2 | 4.4 | 6" | any 6" | . |
| MH6B-S | 06-00447 | 0.625BB | 2000 | 660 | BRL-2 | 4.4 | 6" | any 6" | . |
| MH6B.62D | 06-00448 | 0.625BB | 2000 | 660 | BRL-3 | 4.65 | 6" | any 6" | . |
| MH6B.62D-S | 06-00449 | 0.625BB | 2000 | 660 | BRL-3 | 4.65 | 6" | any 6" | . |
| MH6B.75 | 06-00450 | 0.75BB | 2000 | 660 | BRL-2 | 4.4 | 6" | any 6" | . |
| MH6B.75-S | 06-00453 | 0.75BB | 2000 | 660 | BRL-2 | 4.4 | 6" | any 6" | . |
| MH6B.75D | 06-00451 | 0.75BB | 2000 | 660 | BRL-3 | 4.65 | 6" | any 6" | . |
| MH6B.75D-S | 06-00452 | 0.75BB | 2000 | 660 | BRL-3 | 4.65 | 6" | any 6" | . |
| MH6BD.62 | 06-00454 | 0.625BB | 2000 | 660 | 2BRL-2 | 5.18 | 6" | any 6" | . |
| MH6BD.62-S | 06-00455 | 0.625BB | 2000 | 660 | 2BRL-2 | 5.18 | 6" | any 6" | . |
| MH6BD.75 | 06-00456 | 0.75BB | 2000 | 660 | 2BRL-2 | 5.18 | 6" | any 6" | . |
| MH6BD.75-S | 06-00457 | 0.75BB | 2000 | 660 | 2BRL-2 | 5.18 | 6" | any 6" | . |
| CNC SPUN WHEELS: EXTERNAL CALIPER | | | | | | | | | |
| MHE6B1.25 | 06-00444 | 1.25TRB | 2700 | 900 | BRL-1 | 5.8 | 6" | up to 6.00-6 | . |
| MHE6B1.25-C | 06-00443 | 1.25TRB | 2700 | 900 | BRL-1 | 5.8 | 6" | up to 6.00-6 | . |
| CENTRIFUGALLY CAST WHEELS: INTERNAL CALIPER | | | | | | | | | |
| W40B | 06-00458 | 0.625BB | 2000 | 660 | BRL-2 | 4.05 | 4" | any 4" | . |
| W40-BDXT | 06-00459 | 0.75BB | 3560 | 1185 | BRL-2 | 3.8 | 4" | 2.80/2.50x4 | . |
| W40R | 06-02210 | 0.75BB | 3560 | 1185 | BRL-2 | 4.05 | 4" | any 4" | . |
| W50L | 06-01860 | 0.625BB | 2000 | 660 | BRL-1 | 6.6 | 5" | 11.0x4.05 | . |
| W50L.75 | 06-00833 | 0.75BB | 2000 | 660 | BRL-1 | 6.6 | 5" | 11.0x4.05 | . |
| W50LD | 06-00411 | 1.25BB | 4260 | 1420 | 2BRL-1 | 8.9 | 5" | 11.0x4.05 | . |
| W50LT | 06-00461 | 1.25BB | 4260 | 1420 | BRL-6 | 9.2 | 5" | 11.0x4.05 | . |
| W50LXT | 06-00462 | 1.25BB | 1420 | 4260 | BRL-6 | 9.2 | 5" | 11.0x4.05 | . |
| W50S1.25 | 06-01660 | 1.25BB | 4260 | 1420 | BRL-1 | 6.6 | 5" | 11.0x4.05 | . |
| W50S.75 | 06-00463 | 0.75BB | 4260 | 1185 | BRL-1 | 6.6 | 5" | 11.0x4.05 | . |
| W51L | 06-01710 | 1.25BB | 4260 | 1420 | BRL-1 | 6.6 | 5" | 5.00x5 | . |
| W51LD | 06-00464 | 1.25BB | 4260 | 1420 | 2BRL-1 | 8.9 | 5" | 5.00x5 | . |
| W51LT | 06-00079 | 1.25BB | 4260 | 1420 | BRL-6 | 9.2 | 5" | 5.00x5 | . |
| W51LXT | 06-00412 | 1.25BB | 4260 | 1420 | BRL-6 | 9.2 | 5" | 5.00x5 | . |
| W51S1.25 | 06-01960 | 1.25BB | 4260 | 1420 | BRL-1 | 6.6 | 5" | 5.00x5 | . |
| W62 | 06-02110 | 0.75BB | 3560 | 1185 | BRL-1 | 7 | 6" | any 6" | . |
| F602 | 06-00465 | 0.75BB | 3560 | 1185 | BRL-1 | 7.8 | 6" | any 6" | . |
| W60 | 06-02160 | 1.25BB | 4260 | 1420 | BRL-1 | 7.1 | 6" | any 6" | . |
| F600 | 06-00466 | 1.25BB | 4260 | 1420 | BRL-1 | 7.8 | 6" | any 6" | . |
| W600 | 06-00467 | 1.5TRB | 5580 | 1860 | BRL-6 | 11.9 | 6" | any 6" | . |
| W600XT | 06-00413 | 1.5TRB | 5580 | 1860 | BRL-6 | 11.9 | 6" | any 6" | . |
| W600XLT | 06-00468 | 1.5TRB | 5580 | 1860 | BRL-6 | 10.2 | 6" | any 6" | . |
| W323A | 06-00469 | 1.5TRB | 5580 | 1860 | BRL-323 | 13.75 | 6" | any 6" | . |
| CENTRIFUGALLY CAST WHEELS: EXTERNAL CALIPER | | | | | | | | | |
| WE51 | 06-00445 | 1.25TRB | 4260 | 1420 | BRL-1 | 7.5 | 6" | 5.00x5 | . |

LG

MATCO WHEELS & BRAKES

MATCO DIECAST WHEELS

NOTE: Our prices include 2 wheels and 2 brakes (set); Bearing Axle: BB=Ball TRB=Taper Roll

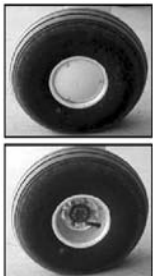
| Matco P/N | Our P/N | Bearing Axle Dia. | Load Limit (lbs.) | Static Cap.(lbs.) | Brake Reline Kit | Weight (lbs.) | Tire Size | Tire Type | Price |
|-------------|----------|-------------------|-------------------|-------------------|------------------|---------------|-----------|--------------|-------|
| W50CC | 06-00470 | 0.625BB | 2000 | 660 | BRL-2 | 4.57 | 5" | 11.0 x 4.05 | . |
| W50CC.62D | 06-00471 | 0.625BB | 2000 | 660 | BRL-3 | 4.82 | 5" | 11.0 x 4.05 | . |
| W50CC.75 | 06-00472 | 0.75BB | 2000 | 660 | BRL-2 | 4.57 | 5" | 11.0 x 4.05 | . |
| W50CC.75D | 06-00473 | 0.75BB | 2000 | 660 | BRL-3 | 4.82 | 5" | 11.0 x 4.05 | . |
| W50CCD.75 | 06-00474 | 0.75BB | 2000 | 660 | 2 BRL-2 | 5.35 | 5" | 11.0 x 4.05 | . |
| W50DCC.62 | 06-00475 | 0.625BB | 2000 | 660 | 2 BRL-2 | 5.35 | 5" | 11.0 x 4.05 | . |
| W51CC | 06-00476 | 0.625BB | 2000 | 660 | BRL-2 | 4.57 | 5" | 5.00-5 | . |
| W51CC.62D | 06-00477 | 0.625BB | 2000 | 660 | 2 BRL-3 | 4.82 | 5" | 5.00-5 | . |
| W51CC.75 | 06-00478 | 0.75BB | 2000 | 660 | 2 BRL-2 | 4.57 | 5" | 5.00-5 | . |
| W51CC.75D | 06-00479 | 0.75BB | 2000 | 660 | 2 BRL-3 | 4.82 | 5" | 5.00-5 | . |
| W51CCD.75 | 06-00480 | 0.75BB | 2000 | 660 | 2 BRL-2 | 5.35 | 5" | 5.00-5 | . |
| W51DCC.62 | 06-00481 | 0.625BB | 2000 | 660 | 2 BRL-2 | 5.35 | 5" | 5.00-5 | . |
| W60CC | 06-00482 | 0.625BB | 2000 | 660 | BRL-2 | 5.55 | 6" | up to 6.00-6 | . |
| W60CC.75 | 06-00483 | 0.75BB | 2000 | 660 | BRL-2 | 5.55 | 6" | up to 6.00-6 | . |
| W600CC | 06-00484 | 0.625BB | 2000 | 660 | BRL-2 | 5.85 | 6" | any 6 " | . |
| W600CC.75 | 06-00485 | 0.75BB | 2000 | 660 | BRL-2 | 5.85 | 6" | any 6 " | . |
| W60CCD.62 | 06-00486 | 0.625BB | 2000 | 660 | 2 BRL-2 | 5.55 | 6" | up to 6.00-6 | . |
| W60CCD.75 | 06-00487 | 0.75BB | 2000 | 660 | 2 BRL-2 | 5.55 | 6" | up to 6.00-6 | . |
| W600CCD.62 | 06-00488 | 0.625BB | 2000 | 660 | 2 BRL-2 | 5.85 | 6" | any 6 " | . |
| W600CCD.75 | 06-00489 | 0.75BB | 2000 | 660 | 2 BRL-2 | 5.85 | 6" | any 6 " | . |
| W60CC.75R | 06-00490 | 0.75TRB | 2000 | 1185 | BRL-2 | 5.85 | 6" | up to 6.00-6 | . |
| W600CC.75R | 06-00491 | 0.75TRB | 2000 | 1185 | BRL-2 | 6.15 | 6" | any 6 " | . |
| W60CCD.75R | 06-00492 | 0.75TRB | 2000 | 1185 | 2 BRL-2 | 6.25 | 6" | up to 6.00-6 | . |
| W600CCD.75R | 06-00493 | 0.75TRB | 2000 | 1185 | 2 BRL-2 | 6.55 | 6" | any 6 " | . |
| W80CC-Z | 06-00494 | 0.625BB | 2000 | 660 | BRL-1 | 8.75 | 6" | 4.80-8 | . |



MATCO AXLE CHART

| Matco P/N | Aircraft Spruce P/N | Dia. (In.) | Used on Models | Axle Assy | Comment | Axle Price | Assy Price |
|-----------|---------------------|------------|---------------------------------------|-----------|--|------------|------------|
| A1 | 06-00495 | 1.25 | W50, W51 | AXLE1 | AL Flange Mount | . | . |
| A1A | 06-00496 | 1.25 | W50LD,W51LD,W50LT,W50LXT,W51LT,W51LXT | AXLE1A | AL Flange Mount | . | . |
| A1B | 06-00497 | 1.25 | WE51 | AXLE1B | AL Flange Mount | . | . |
| A2 | 06-00498 | 1.25 | W50S,W51S | AXLE2 | AL Flange Mount | . | . |
| A3 | 06-00499 | 1.25 | W60 | AXLE3 | AL Flange Mount | . | . |
| A3A | 06-00501 | 1.25 | MHE6B | AXLE3A | AL Flange Mount 5" Cessna bolt pattern | . | . |
| A3C | 06-00502 | 1.25 | MHE6B | AXLE3C | AL Flange Mount 6" Cessna bolt pattern | . | . |
| A4 | 06-16830 | 0.625 | MHE6B,W50CC,W60CC,W40B | AXLE4 | Steel Tube | . | . |
| A5 | 06-00503 | 0.75 | W40BD | AXLE5 | AL Flange Mount | . | . |
| A5G | 06-00504 | 20mm | W40M | AXLE5G | Steel Flange Mount | . | . |
| A6 | 06-00505 | 1.5 | W600,W600XT,WW600XLT | AXLE6 | AL Flange Mount | . | . |
| A6M | 06-00506 | 1.5 | W600,W600XT,WW600XLT | AXLE6M | A6 Alternate Mount Ver. | . | . |
| A7 | 06-00507 | 0.75 | MH6B,W50CC,W60CC,W40B | AXLE7 | Steel Tube Mount | . | . |
| A8 | 06-00508 | 0.75 | W62,MH6B.75,W50CC.7 MH6B5,260CC.75 | AXLE8 | Steel Tube | . | . |
| A13 | 06-00509 | 0.625 | W80CC-Z | AXLE13 | Steel Tube for Fork Mount | . | . |
| A15 | 06-00510 | 1.5 | W323A | AXLE15 | For W323A Compound W&B | . | . |
| A15M | 06-00511 | 1.5 | W323SA | AXLE15M | For W3238A Compound W&B | . | . |
| A16 | 06-00512 | 0.75 | F602 | AXLE16 | Steel Tube for W62 w/F602 Spacer | . | . |
| A17 | 06-00513 | 0.75 | W600CC.75 | AXLE17 | Steel Tube | . | . |
| A19 | 06-00514 | 0.75 | W600CC.75R | AXLE19 | Steel Tube | . | . |
| A20 | 06-00515 | 0.75 | NW50.75R,NW51.75R | AXLE20 | Steel Tube w/Spacers for Zenith 601 | . | . |

WHEELS & BRAKES



MATCO HUB CAP KIT FOR MH SERIES WHEELS

Responding to customer inquiries for a kit to allow installation of the current WHLWC wheel cover on MH series wheels, MATCO mfg has introduced the MHWC hub cap kit. The kit includes wheel covers and mounting hardware for 2 wheels. The WHLWC wheel covers are made from durable ABS polymer. The wheel covers can be painted to match customer requirements. Installation can be accomplished without removing the wheel. Installation on MH wheels using the CNC spun wheel halves (introduced in early 2001) can be accomplished in about 10 minutes. On earlier MH series wheels using stamped wheel halves, some trimming of the wheel cover may be required and installation may require about 30 minutes. Furnished unpainted. 2 wheel kit. P/N 06-00446.....

MATCO BRAKE RELINE KITS

Reline kits include linings and rivets for 2 calipers.



| Matco Part No. | Our Part No. | Lining Model Used | Price each |
|----------------|--------------|-------------------|------------|
| BRL-1 | 06-00571 | 4 of M66-106 | . |
| BRL-2 | 06-00572 | 4 of M66-103 | . |
| BRL-3 | 06-00573 | 4 of M66-1052 | . |
| BRL-6 | 06-00574 | 4 of M66-1052 | . |
| BRL-323 | 06-00575 | 4 of DR323 | . |

MATCO TUBING & FITTINGS

| Matco Part No. | Our Part No. | Description | Price |
|----------------|--------------|--|-------|
| MSCNNR4/035 | 06-01133 | Nylon II Tube .25 | . |
| MSC261P | 06-01134 | Ferrule and Nut | . |
| MSC262P | 06-01135 | Union, Brass Fitting | . |
| MSC264P | 06-01136 | T-Fitting, 1/8" NPT - 1/4" Compression Parker #X164p-4 | . |
| MSC268P | 06-01137 | Straight fitting, 1/8" NPT - 1/4" Compression | . |
| MSC268P-04X01 | 06-01138 | Straight Fitting 1/16" | . |
| MSC269P | 06-01139 | Brass Elbow, 90° 1/8" NPT - 1/4" Compression | . |
| MSCNNR2/026 | 06-01140 | Nylon II Tube .125 | . |
| MSC161P | 06-01141 | 1/8" Ferrule and Nut | . |
| MSC164P | 06-01142 | T-Fitting, 1/8" NPT - 1/8" Compression | . |
| MSC168P | 06-01143 | Straight Fitting, 1/8" NPT - 1/8" Compression | . |
| MSC169P | 06-01144 | Brass Elbow, 90°, 1/8" NPT - 1/8" Compression | . |

MATCO 6" WHEELS & BRAKES FOR ULTRALIGHTS



This top quality wheel and brake set is excellent for use on high-performance ultralights. Set incl.: 2 aluminum wheels & brakes with 5/8" bearings, 2 axles, 2 spacers, 2 brake bleeder seats & valves, 4 brake line fittings, 12 ft. of 1/4" dia. x .035 wall brake line & 1 vertical master cylinder.

P/N 06-16800
Same as set #06-16800 except with 2 vertical master cylinders P/N 06-16840
Same as set #06-16800 except with 1 laydown style master cylinder P/N 06-16850
Same as set #06-16800 except with 2 laydown style master cylinders P/N 06-16860

AVAILABLE SEPARATELY:

6" Wheel & Brake P/N 06-16810
5" Nose wheel with 5/8" Bearings P/N 06-16820
A-4 Axle, 9.75" Long, 5/8" Dia. P/N 06-16830

JDM WHEELS, BRAKES AND AXLES



A quality built 6" wheel & brake designed for the homebuilt and ultralight flyer. Rated up to 2500 lbs. gross weight, these wheels easily accommodate 800 series tires for off-field landings and 600 series tires for low profile and an increase in speed. The brake disks made of cast iron

provide for longevity and superior heat dissipation, while using Rapco brake pads to finish the system. The axles are 1-1/4" aluminum and use a 1-3/8" square bolt pattern. The kit does not include master cylinders, brake fluid line or axles and nuts. Each JDM brake and wheel including the axle weigh only 10.3 lbs. Kit includes 1 wheel and 1 brake.

6" wheel & Brake Assembly* (1-1/4" Tapered Roller Bearing) P/N 06-03475 ea
1-1/4" Axle & Castle Nut..... P/N 06-03480 ea

AZUSA LITE NYLON WHEELS 4, 5 AND 6 INCH MODELS



Azusalite wheels are made from engineering grade Nylon which combines high tensile and compressive strengths and good impact resistance. Excellent for many homebuilt and ultralight aircraft applications since they weigh 60-70% less than aluminum wheels. Azusalite wheels are offered in 4", 5" and 6" models. Replacement parts and unlisted accessories available on request.

AZUSALITE 5" WHEEL - Used as the main wheels on the Mohawk ultralight, this 5 inch wheel features 5/8" I.D. sealed ball bearings and uses a 4.10 / 3.50 x 5 or 5.00 x 5 tire and tube. P/N 06-02500

AZUSALITE 4" WHEEL - A 4 inch Azusalite wheel featuring 5/8" sealed ball bearings. Uses a 4.10 / 3.50 x 4 tire and tube. P/N 06-02600

AZUSALITE 6" WHEEL - A 6 inch Azusalite wheel which comes complete with 5/8" sealed ball bearings. Uses a 4.10 / 3.50-6 or a 6.00-6 tire and tube. P/N 06-02700

AZUSA TIRES & TUBES (Sawtooth Tread)
4 .10 / 3.50 x 4 Tire & Tube Assembly P/N 06-02800 Ea
4.10 / 3.50 x 5 Tire & Tube Assembly P/N 06-02900 Ea
4.10 / 3.50 x 6 Tire & Tube Assembly..... P/N 06-03000 Ea
4.80 x 4.00 x 8 Tire & Tube Assembly..... P/N 06-03010 Ea



AZUSA ALUMINUM WHEELS

5" AZUSA ALUMINUM WHEEL - Complete with 5/8" I.D. sealed bearing. P/N 1144

5" AZUSA ALUMINUM WHEEL & BRAKE KIT - Kit consists of (2) #1144 wheels with 5/8" sealed bearings, (2) #2270 aluminum Azusa brakes, (2) #2211 brake drums (2) 11.400-5, 6-ply Lamb tires and Azusa #7131 (2) 340/300 x 5 tubes. P/N 06-03100

5" AZUSA ALUMINUM WHEEL - Complete with 3/4" bearing. P/N 06-00376

6" AZUSA ALUMINUM WHEEL - Complete with 5/8" I.D. sealed bearings. Wt. 3.9 lbs. P/N 06-03200

6" AZUSA ALUMINUM WHEEL - Complete with 5/8" I.D. Timken bearings. Wt. 4.1 lbs. P/N 06-03300

6" AZUSA ALUMINUM WHEEL - Complete with 3/4" I.D. Timken bearings. Wt. 4.2 lbs. P/N 06-03400

8" AZUSA ALUMINUM WHEEL & BRAKE KIT - Kit consists of (2) #1175 wheels, (2)#2530 brakes, (2)#2542 drums, (2)4.80 x 4.00 tires and tubes, & hardware. P/N 06-03410

AZUSA BRAKES FOR AZUSA 5" & 6" WHEELS

These 4.5" brakes have a long actuating arm, 5/8" mounting hole, and bonded lining. Available in anchor style w/ built-in anchor & 2 cable mounting ears, or round style which features a round aluminum backing plate. Platform required w/ 5" Azusalite.

| P/N | Description | Price |
|----------|----------------------------|-------|
| 06-03415 | Anchor Style Brake #2208 | . |
| 06-03420 | Round Style Brake #2270A | . |
| 01-00169 | Brake Assy. 2272A (Right) | . |
| 01-00306 | Brake Assy. 2272A (Left) | . |
| 06-03425 | Brake Arm #2263 | . |
| 06-03430 | Spring #2264 | . |
| 06-03435 | Cam #8235 | . |
| 06-03440 | Platform #2259A | . |
| 06-03445 | Lined Shoes (1/side) #2260 | . |

AZUSA BRAKES FOR AZUSA 8" WHEELS

These 5" brakes are used on Azusa #1175 wheels only. Features a round aluminum backing plate and actuating arm which allows for 8 positions.

| P/N | Description | Price |
|----------|----------------------------|-------|
| 06-03450 | Round Style Brake #2530 | . |
| 06-03455 | Brake Arm #2537 | . |
| 06-03460 | Spring #2539 | . |
| 06-03465 | Cam #2533 | . |
| 06-03470 | Lined Shoes (1/side) #2538 | . |

GROVE MASTER BRAKE CYLINDERS



Clevis End—3/16" hole, 1/4" wide slot



Eye Bolt End—3/16" hole, 1/2" head diameter



Eye Bolt End - 3/16" hole, 3/8" head diameter

These master cylinders are the perfect choice for all Grove brake systems as well as use with other major brands that require a high pressure master cylinder. Consider the following when selecting the proper master cylinder for your aircraft:

1. The style (with or without integral reservoir, etc.)
2. The pin-to-pin length—this is the length between the upper and lower attach holes.
3. The attach type for the upper end (clevis, or eye bolt)
4. The attach type for the lower end (cross drilled, slotted, etc.)



Cross Drilled - 3/16" holes inline with fitting and also 90° to fitting



90° Offset - 3/16" hole drilled 90° to fitting. Tab is inline with fitting.



Inline - 3/16" hole drilled inline with fitting. Tab is offset 90° to fitting



Slotted - .090" slot inline with fitting. 3/16" hole drilled 90° to fitting.



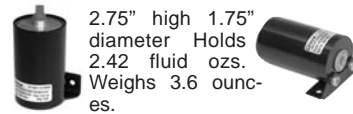
Right Offset Tab 3/16" hole drilled 90° to fitting



Left Offset Tab 3/16" hole drilled 90° to fitting

REMOTE BRAKE FLUID RESERVOIRS

Quality machined from 6061 billet. Top is retained by snap ring with O-ring seal. Supplied with vented 1/8" NPT cap plug. Anodized for corrosion resistance.



2.75" high 1.75" diameter Holds 2.42 fluid ozs. Weighs 3.6 ounces.

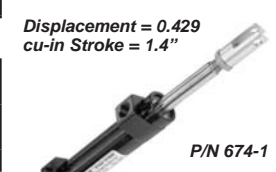
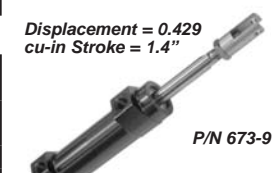
Normal installation requires two (one for each master cylinder.) Supplied with 1/8" NPT fitting. Attaches directly to your master cylinder. 1.98" high; 1.38" diameter Holds 1.10 fluid ounces. Weighs 1.5 ounces.



067-054 P/N 06-00819.....

P/N 06-00818

| Grove P/N | Our P/N | Pin-to-Pin Length | Upper Attachment | Lower Attachment | Weight | Price |
|-----------|----------|-------------------|------------------|------------------|---------|-------|
| 670-1 | 06-00594 | 7.5" | Clevis | Inline | 5.9 oz. | . |
| 670-2 | 06-00866 | 8.0" | Clevis | Inline | 5.9 oz. | . |
| 670-3 | 06-00104 | 7.5" | Clevis | 90° Offset | 5.9 oz. | . |
| 670-4 | 06-00869 | 8.0" | Clevis | 90° Offset | 5.9 oz. | . |
| 670-8 | 06-01286 | 7.25" | Clevis | 90° Offset | 5.9 oz. | . |
| 670-13 | 06-00871 | 8.0" | 3/8" Eye Bolt | 90° Offset | 5.9 oz. | . |
| 670-14 | 06-00872 | 8.0" | 3/8" Eye Bolt | Inline | 5.9 oz. | . |
| 670-15 | 06-00596 | 8.0" | 1/2" Eye Bolt | 90° Offset | 5.9 oz. | . |
| 670-16 | 06-00873 | 7.5" | 1/2" Eye Bolt | 90° Offset | 5.9 oz. | . |
| 670-17 | 06-00597 | 8.0" | 1/2" Eye Bolt | Inline | 5.9 oz. | . |
| 670-18 | 06-00875 | 7.5" | 1/2" Eye Bolt | Inline | 5.9 oz. | . |
| 670-19 | 06-00877 | 7.5" | 3/8" Eye Bolt | 90° Offset | 5.9 oz. | . |
| 670-20 | 06-00878 | 7.5" | 3/8" Eye Bolt | Inline | 5.9 oz. | . |



| Grove P/N | Our P/N | Pin-to-Pin Length | Upper Attachment | Lower Attachment | Weight | Price |
|-----------|----------|-------------------|------------------|------------------|---------|-------|
| 671-20 | 06-00880 | 7.5" | 1/2" Eye Bolt | Cross Drilled | 5.9 oz. | . |
| 671-21 | 06-00882 | 7.5" | 3/8" Eye Bolt | Cross Drilled | 5.9 oz. | . |
| 671-22 | 06-00884 | 8.0" | 1/2" Eye Bolt | Cross Drilled | 5.9 oz. | . |
| 671-23 | 06-00887 | 8.0" | 3/8" Eye Bolt | Cross Drilled | 5.9 oz. | . |

| Grove P/N | P/N | Pin-to-Pin Length | Upper Attachment | Lower Attachment | Weight | Price |
|-----------|----------|-------------------|------------------|------------------|---------|-------|
| 672-1 | 06-00889 | 5.0" | Clevis | Cross Drilled | 4.0 oz. | . |
| 672-2 | 06-00891 | 5.5" | Clevis | Cross Drilled | 4.2 oz. | . |
| 672-3 | 06-00893 | 6.0" | Clevis | Cross Drilled | 4.5 oz. | . |

| Grove P/N | Our P/N | Pin-to-Pin Length | Upper Attachment | Lower Attachment | Weight | Price |
|-----------|----------|-------------------|------------------|------------------|---------|-------|
| 673-9 | 06-00895 | 7.5" | Clevis | Cross Drilled | 5.9 oz. | . |
| 673-10 | 06-00896 | 8.0" | Clevis | Cross Drilled | 5.9 oz. | . |
| 673-11 | 06-00897 | 7.5" | 1/2" Eye Bolt | Left Offset | 5.9 oz. | . |
| 673-12 | 06-00898 | 7.5" | 1/2" Eye Bolt | Right Offset | 5.9 oz. | . |
| 673-13 | 06-00899 | 7.5" | 1/2" Eye Bolt | Slotted 90° | 5.9 oz. | . |
| 673-14 | 06-00901 | 7.5" | 1/2" Eye Bolt | Slotted Inline | 5.9 oz. | . |

| Grove P/N | Our P/N | Pin-to-Pin Length | Upper Attachment | Lower Attachment | Weight | Price |
|-----------|----------|-------------------|------------------|------------------|---------|-------|
| 674-1 | 06-00902 | 7.5" | Clevis | Cross Drilled | 4.6 oz. | . |
| 674-2 | 06-00903 | 8.0" | Clevis | Cross Drilled | 4.6 oz. | . |
| 674-3 | 06-00904 | 7.0" | Clevis | Cross Drilled | 4.6 oz. | . |

| Grove P/N | Our P/N | Pin-to-Pin Length | Upper Attachment | Lower Attachment | Weight | Price |
|-----------|----------|-------------------|------------------|------------------|---------|-------|
| 675-1 | 06-00097 | 8.0" | Clevis | Inline | 8.1 oz. | . |
| 675-2 | 06-00905 | 7.5" | Clevis | Inline | 8.1 oz. | . |
| 675-3 | 06-00593 | 8.0" | Clevis | 90° Offset | 8.1 oz. | . |
| 675-4 | 06-00906 | 7.5" | Clevis | 90° Offset | 8.1 oz. | . |

| Grove P/N | Our P/N | Pin-to-Pin Length | Upper Attachment | Lower Attachment | Weight | Price |
|-----------|----------|-------------------|------------------|------------------|---------|-------|
| 676-1 | 06-00907 | 8.0" | Clevis | Inline | 9.3 oz. | . |
| 676-2 | 06-00908 | 7.5" | Clevis | Inline | 9.3 oz. | . |
| 676-3 | 06-00909 | 8.0" | Clevis | 90° Offset | 9.3 oz. | . |
| 676-4 | 06-00910 | 7.5" | Clevis | 90° Offset | 9.3 oz. | . |

All master cylinders have a 5/8" bore, 1/8" NPT outlets, are rated at 1,000 psi for use with MIL-H-5606 hydraulic fluid.



GROVE WHEEL & BRAKES

4 INCH WHEELS & BRAKES



P/N 40-101 Shown

Manufactured from aerospace grade aluminum

These 4" wheels are manufactured to the same exacting standards as the Grove 5" & 6" wheels.

They feature genuine Timken tapered roller bearings with felt grease seals.

40-1 wheel has 2-3/4" tire bead width.

40-3 wheel has 2-1/4" tire bead width.

GROVE WHEELS & BRAKES FEATURE:

- Aerospace grade materials
- Precision CNC machined
- Timken tapered roller bearings
- Felt grease seals
- Tubeless Option



From the chart below, select the proper static load rating, kinetic energy rating and brake torque for your aircraft.

Choose from Aluminum or Magnesium — Magnesium wheels weigh less than aluminum, but aluminum is more corrosion resistant. Both metals have similar strengths.

5 INCH WHEELS & BRAKES



P/N 57-124 Shown

Available in Aluminum or Magnesium

50 SERIES — Grove's basic 5" wheel.

51 SERIES — Lighter weight version of the 50 series.

55, 56 & 57 SERIES — Same wheel as the 50 series, but with heavier discs for greater kinetic energy and larger calipers for greater braking torque

5 INCH WHEELS & BRAKES



P/N 66-152 Shown

Available in Aluminum or Magnesium

60 SERIES — Grove's basic 6" wheel for 1-1/2" axles.

61 SERIES — Lighter weight version of the 60 series.

65 SERIES — Same as the 61 series, but for use with 1-1/4" axles.

66 SERIES — Same as the 60 series but with heavier discs for greater kinetic energy and larger calipers for greater braking torque.

LG

| GROVE KIT NO. | OUR PART NO. | WHEEL NO. | STATIC LOAD RATING POUNDS | KINETIC ENERGY FT-LBS. | DISC THICKNESS (INCHES) | BRAKING TORQUE INCH-LBS. | CALIPER NO. | PISTON DIA. (INCHES) | BRAKE PAD NO. | AXLE DIA. (INCHES) | WEIGHT LBS. (SEE REF. 1) | PRICE/SET (SEE REF. 2) |
|------------------------------------|--------------|-----------|---------------------------|------------------------|-------------------------|--------------------------|-------------|----------------------|---------------|--------------------|--------------------------|------------------------|
| FOUR INCH WHEELS AND BRAKES | | | | | | | | | | | | |
| 40-101 | 06-00858 | 40-3A | 700 | 72,000 | 0.160 | 1,384 | 39-1 | 1x1.250 | 66-106 | 0.75 | 4.05 | . |
| 40-102 | 06-00859 | 40-1A | 700 | 72,000 | 0.160 | 1,832 | 39-2 | 1x1.438 | 66-106 | 0.75 | 4.16 | . |
| FIVE INCH WHEELS AND BRAKES | | | | | | | | | | | | |
| 50-101 | 06-00094 | 50-1A | 1,250 | 118,164 | 0.190 | 2,364 | 30-1 | 1x1.500 | 66-106 | 1.25 | 7.10 | . |
| 50-201 | 06-00860 | 50-1M | 1,250 | 118,164 | 0.190 | 2,364 | 30-1 | 1x1.500 | 66-106 | 1.25 | 6.10 | . |
| 51-101 | 06-00589 | 51-1A | 800 | 118,164 | 0.190 | 2,364 | 30-1 | 1x1.500 | 66-106 | 1.25 | 6.60 | . |
| 51-201 | 06-00862 | 51-1M | 800 | 118,164 | 0.190 | 2,364 | 30-1 | 1x1.500 | 66-106 | 1.25 | 5.60 | . |
| 55-112 | 06-00863 | 55-1A | 1,250 | 162,315 | 0.250 | 3,286 | 31-2 | 2x1.250 | 66-111 | 1.25 | 7.60 | . |
| 55-212 | 06-00864 | 55-1M | 1,250 | 162,315 | 0.250 | 3,283 | 31-2 | 2x1.250 | 66-111 | 1.25 | 6.45 | . |
| 56-113 | 06-00095 | 56-1A | 1,250 | 205,146 | 0.313 | 3,283 | 31-3 | 2x1.250 | 66-111 | 1.25 | 7.90 | . |
| 56-213 | 06-00867 | 56-1M | 1,250 | 205,146 | 0.313 | 3,283 | 31-3 | 2x1.250 | 66-111 | 1.25 | 6.80 | . |
| 57-124 | 06-00096 | 57-1A | 1,250 | 246,175 | 0.375 | 4,340 | 32-4 | 2x1.438 | 66-111 | 1.25 | 8.30 | . |
| 57-224 | 06-00870 | 57-1M | 1,250 | 246,175 | 0.375 | 4,340 | 32-4 | 2x1.438 | 66-111 | 1.25 | 7.20 | . |
| SIX INCH WHEELS AND BRAKES | | | | | | | | | | | | |
| 60-162 | 06-00101 | 60-1A | 1,750 | 186,792 | 0.250 | 5,052 | 36-2 | 1x2.000 | 66-105 | 1.50 | 10.50 | . |
| 60-262 | 06-00798 | 60-1M | 1,750 | 186,792 | 0.250 | 5,052 | 36-2 | 1x2.000 | 66-105 | 1.50 | 9.20 | . |
| 61-111 | 06-00590 | 61-1A | 1,200 | 168,934 | 0.190 | 3,946 | 31-1 | 2x1.250 | 66-111 | 1.50 | 9.20 | . |
| 61-211 | 06-00799 | 61-1M | 1,200 | 168,934 | 0.190 | 3,946 | 31-1 | 2x1.250 | 66-111 | 1.50 | 8.10 | . |
| 65-207 | 06-00879 | 65-1M | 1,250 | 168,935 | 0.190 | 3,868 | 30-7 | 1x1.750 | 66-106 | 1.25 | 7.50 | . |
| 65-211 | 06-00881 | 65-1M | 1,250 | 168,934 | 0.190 | 3,946 | 31-1 | 2x1.250 | 66-111 | 1.25 | 7.62 | . |
| 65-222 | 06-00883 | 65-5M | 1,250 | 186,792 | 0.250 | 5,216 | 32-2 | 2x1.438 | 66-111 | 1.25 | 7.92 | . |
| 66-152 | 06-00885 | 60-1A | 1,750 | 186,792 | 0.250 | 7,734 | 35-2 | 2x1.750 | 66-106 | 1.50 | 11.15 | . |
| 66-154 | 06-00886 | 60-5A | 1,750 | 280,188 | 0.375 | 7,734 | 35-4 | 2x1.750 | 66-106 | 1.50 | 11.82 | . |
| 66-252 | 06-00888 | 60-1M | 1,750 | 186,792 | 0.250 | 7,734 | 35-2 | 2x1.750 | 66-106 | 1.50 | 10.10 | . |
| 66-254 | 06-00890 | 60-5M | 1,750 | 280,188 | 0.375 | 7,734 | 35-4 | 2x1.750 | 66-106 | 1.50 | 10.80 | . |
| 67-174 | 06-00892 | 67-1A | 2,200 | 280,188 | 0.375 | 7,734 | 37-4 | 2x1.750 | 66-105 | 1.50 | 14.25 | . |
| 67-274 | 06-00894 | 67-1M | 2,200 | 280,188 | 0.375 | 7,734 | 37-4 | 2x1.750 | 66-105 | 1.50 | 12.50 | . |

NOTE: Braking torque calculated at 600 psi brake line pressure. Ref 1: Weight for one wheel, disc and caliper assy. Ref 2: Set includes two wheel assys.

GROVE WHEELS & BRAKES

NOSE WHEELS

Genuine Aircraft Quality!

- Cast from aerospace grade materials
- Precision CNC Machined
- Timken Tapered Roller Bearings
- Felt Grease Seals



| "GROVE P/N" | "OUR P/N" | WHEEL SIZE | STATIC LOAD RATING | AXLE DIA. | WEIGHT | PRICE |
|-------------|-----------|------------|--------------------|-----------|----------|-------|
| 49-1A | 06-00843 | 4 Inch | 700 lbs | 0.75" | 1.98 lbs | . |
| 49-3A | 06-00842 | 4 Inch | 700 lbs | 0.75" | 1.87 lbs | . |
| 59-1A | 06-00102 | 5 Inch | 1,250 lbs | 1.25" | 3.90 lbs | . |
| 59-1M | 06-00911 | 5 Inch | 1,250 lbs | 1.25" | 2.90 lbs | . |
| 59-2A | 06-00912 | 5 Inch | 800 lbs | 1.25" | 3.40 lbs | . |
| 59-2M | 06-00913 | 5 Inch | 800 lbs | 1.25" | 2.40 lbs | . |
| 69-1A | 06-00103 | 6 Inch | 1,700 lbs | 1.50" | 6.00 lbs | . |
| 69-1M | 06-00915 | 6 Inch | 1,700 lbs | 1.50" | 4.80 lbs | . |

TUBELESS WHEELS

Perfect for oversized tires such as the 26" Goodyear tire. Durable all metal valve stem. O-Ring seal between wheel halves.



Axle Diameter 1-1/4"
Static Load Rating 1,250lbs

P/N 06-00916.....

800X4 DISC BRAKE CONVERSION

STC Approved FAA-PMA



APPROVED MODELS INCLUDE:

J-3, J-4, J-5, PA-11, PA-12 PA-14, PA-15 PA-16, PA-17PA-18, PA-19 PA-20

Good news for owners of early Piper aircraft. Say good-bye to brake expander tube problems forever!

- No more soft brake pedal
- Easy Installation
- Improved braking and ground handling

Maintain the classic cub look by installing modern disc brakes on your existing 800x4 wheels and tires. Use your existing wheels, tires, tubes, master cylinders and brake lines.



STC Kit comes complete with all parts, special tools and STC documentation. Installation requires only standard hand and rivet tools. No modifications are required to be made on the gear leg, or any other part of the aircraft.

P/N 06-00837



AXLE SHIMS

Reduce Tire Wear
Improve Ground Handling



TOE-IN/OUT REALIGNMENT SHIMS

Install these axle shims between your landing gear and axles to insure that your tires track true. Correct any misalignment of toe-in or out in 1/4° increments. Precision machined from 6061-T6 aluminum.

Price . each.

| Correction | 500X5 | 600X6 |
|------------|----------|----------|
| 1/4° | 06-00925 | 06-00928 |
| 1/2° | 06-00926 | 06-00929 |
| 3/4° | 06-00927 | 06-00930 |

CAMBER ADJUSTMENT SHIMS

Adjust the vertical alignment of your wheels with these camber adjustment shims. Precision machined from 6061-T6 aluminum.

Price: . each.

| Correction | 500X5 | 600X6 |
|------------|----------|----------|
| 1/2° | 06-00931 | 06-00934 |
| 1° | 06-00932 | 06-00935 |
| 2° | 06-00933 | 06-00936 |

500X5 STANDARD AXLE

Precision CNC machined from 2024-T3 aluminum with clear anodized protective finish Weight 0.92 lbs. 1.25" diameter Static Load Rating 1,250 lbs.



Use with Grove 50-1, 56-1, 57-1, 57-5 and Cleveland 500x5 P/N 06-00917

500X5 STANDARD AXLE WITH WHEEL PANT STUB

Same as the 500x5 standard axle but with 1" extension to attach wheel pant. End tapped for 1/4-28 screw Weight 0.95lb.



Use with Grove 50-1, 56-1, 57-1, 57-5 and Cleveland 500x5 wheels. P/N 06-00601

600X6 STANDARD AXLE

Precision CNC machined from 2024-T3 aluminum with clear anodized protective finish Weight 1.28 lbs. 1.50" diameter Static Load Rating 1,750lbs



Use with Grove 60-1, 61-1, and Cleveland 600x6 wheels P/N 06-00919

600X6 STANDARD AXLE WITH WHEEL PANT STUB

Same as the 600x6 standard axle but with 2" extension to attach wheel pant. End tapped for 1/4-28 screw Weight 1.43lb.



Use with Grove 60-1, 61-1, and Cleveland 600x6 wheels. P/N 06-00602

400X4 AXLES

Use with Grove 40-1A Wheel Weight 0.40lbswheels. P/N 06-00921
Use with Grove 40-3A Wheel Weight 0.38lbs P/N 06-00922



Solid 7075-T6 aluminum with clear anodized finish. Diameter 0.75" Static Load Rating 660lbs

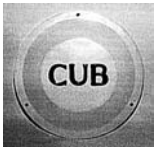
1-1/4" DIAMETER 600X6 AXLES

Same construction as the above axles, but with 1.25" diameter Use with Grove 65 Series Wheels.



With wheel pant stub P/N 06-00923
Without stub P/N 06-00924

BRAKE PARTS – DISCS



METAL HUB CAPS

These FAA approved metal hub caps are designed for older Pipers using the 800x4 Goodrich (Hayes) brakes such as the J-3 and PA-18. A larger cap for 600 x 6 conversions are also available below. The caps are available with "CUB" stamped in raised letters or plain.

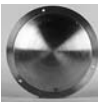
- Cub 800x4 Goodrich hub cap P/N 06-00010 ea.
- (Identical in size and appearance to Cleveland #157-9)
- Cub 600x6 Cleveland hub cap P/N 06-00020 ea.
- Plain 800x4 Goodrich hub cap P/N 06-00030 ea.
- Plain 600x6 Cleveland hub cap P/N 06-00040 ea.



WHEEL COVERS

For Gerdes, McCauley, Cleveland, Hayes, Goodyear, Rosenhan and Matco wheels as listed. Furnished with mounting screws and lock washers.

| P/N | Wheel Size | Application | Price ea. |
|--------------------------|------------|-----------------------------|-----------|
| 157-8 <i>Pictured</i> | 5.00-5* | Cleveland, McCauley, Gerdes | . |
| 157-9 | 6.00-6** | Cleveland, McCauley, Gerdes | . |
| 06-03705 | 6.00-6 | All Goodyear Wheels | . |
| 06-03900 | 5" Dia. | Rosenhan Matco Wheels | . |



ECONOMY WHEEL COVER

For 600-6 Cleveland wheels P/N 06-03710 ea.
For 500-5 Cleveland wheels P/N 06-00073 ea.
Furnished with screws for installation



GROVE HUB CAP

For Grove, Cleveland and Gerdes 600x6 wheels.
Includes mounting screws.
P/N 06-00845

STAINLESS STEEL BRAKE DISCS FOR CERTIFICATED AIRCRAFT



These solid stainless steel brake discs were developed to eliminate the problem of rust associated with regular carbon steel discs and the cracking and peeling of chrome plated discs. The stainless discs provide excellent braking performance and improve brake component service life - brake pads will last much longer. The advantages of stainless discs are most pronounced in harsh environmental conditions.

STC'd for Twin Comanche and Comanche 400 that do not use metallic linings. When ordering, please furnish part number of the disc being replaced and aircraft make, model and number.

| Stainless Steel Part NO. | Cleveland Part NO. | Price Per Pair |
|--------------------------|--------------------|----------------|
| 201-10SS | 164-10*** | . |
| 201-19SS | 164-19 | . |
| 201-25BSS | 164-25B | . |
| 201-195SS | B30195 | . |

***Must be used with organic linings, use conversion kit CK10 to convert from metallic linings.

**Must be used with organic linings, use conversion kit CK220 to convert from metallic linings.

BX-1000 BLACK MAX HYDRAULIC BRAKE SYSTEM



(Everything you need in one package)

This system has a full floating rotor which compensates for alignment giving you a smooth feeling brake action. The master cylinder has a built in reservoir which allows you to add oil and bleed from the top down. Maximum holding pressure to allow for a good run up. Uses standard brake fluid. Gross rating 1000 lbs.

Features:

- Master Cylinder w/reservoir and brake handle
- 2 6" polished aluminum wheels
- 2 Hubs w/bearings
- 2 Tires
- 2 Rotors
- 2 Calipers
- 5/8" axle with keyway
- Brake Pads
- 14' of Hydraulic Brake Line
- Fittings and Hardware.



| Part# | Model | Rim Type | Rims Included | Rim Size | Gross Weight | Includes tires | Axle Size | PN | Price |
|-----------|----------|-----------|---------------|------------|--------------|----------------|-------------|----------|-------|
| BX44708 | BX1000 | WELDED | YES | 6"W X 6" D | 1000LBS | YES | 5/8" X 8" | 06-00707 | . |
| BX44708-4 | BX1000 | WELDED | YES | 4"W X 6" D | 1000LBS | YES | 5/8" X 8" | 06-00963 | . |
| BX44798 | BX-AZUSA | Azusa | NO | 4"W X 4" D | 1000LBS | NO | 5/8" X 7.5" | 06-00964 | . |
| BX44799 | BX-AZUSA | Azusa | NO | 4"W X 6" D | 1000LBS | NO | 5/8" X 7.5" | 06-01191 | . |
| BX44800 | BX-AZUSA | Azusa | NO | 4"W X 8" D | 1000LBS | NO | 5/8" X 7.5" | 06-00966 | . |
| BX44785 | BX1320 | SPLIT RIM | YES | 6"W X 6" D | 1320LBS | NO | 5/8" X 8" | 06-00967 | . |
| BX44785-4 | BX1320 | SPLIT RIM | YES | 4"W X 6" D | 1320LBS | NO | 5/8" X 8" | 06-00968 | . |
| BX44863 | BX1500 | SPLIT RIM | YES | 6"W X 6" D | 1500LBS | NO | 3/4" X 8" | 06-00969 | . |
| BX44863-4 | BX1500 | SPLIT RIM | YES | 4"W X 6" D | 1500LBS | NO | 3/4" X 8" | 06-00970 | . |



WOODRUFF KEY

Woodruff key for Black Max brake caliper
P/N 06-01019.....

CLEVELAND BRAKE DISCS

CLEVELAND BRAKE DISCS

ALL THE BRAKE YOU NEED WITH A PRICE BREAK - A FULL 30% OR MORE OFF LIST PRICE!



If your aircraft is flown a lot (more than 200 hours a year) and is not exposed to exceptionally corrosive atmospheres, Cleveland Standard discs are the ideal replacement when normal brake wear requires it.

Cleveland Chrome brake discs are the answer for owners of aircraft that are exposed to the elements (moisture, salt, industrial chemicals) and are not flown frequently enough to rub off corrosion. If you fly less than 200 hours a year, your aircraft spends more than 8,500 idle hours exposed to the elements. Standard and Chrome Cleveland brake discs are fully FAA approved as replacements on virtually all popular single engine aircraft.

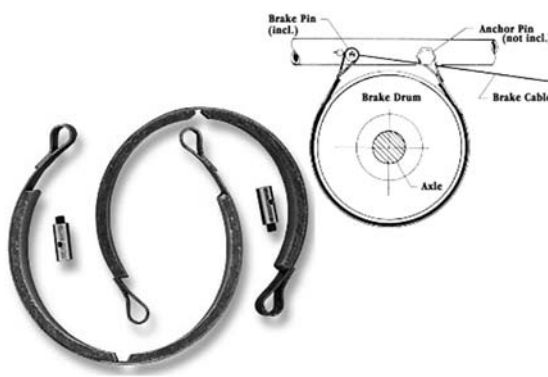
| Aircraft Model | Main Wheel Ass'y | Standard Disc | Price Each | Chrome Disc | Price Each |
|--------------------------------------|------------------|---------------|------------|-------------|------------|
| Homebuilts | 500x5 40-78B | 164-17 | . | 164-117 | . |
| Homebuilts | 600x6 40-59A | 164-75 | . | 164-175 | . |
| Aerotec (Pitts) S-1 Series, S-2A | 500x5 40-78B | 164-17 | . | 164-117 | . |
| Bonanza 33, 35, 36 | 600x6 40-83 | 164-02505 | . | 164-125B | . |
| Bellanca Citabria, Decathlon | 600x6 40-28D | 164-5 | . | 164-105 | . |
| Bellanca Champ | 600x6 40-78B | 164-17 | . | 164-117 | . |
| Viking 300A | 600x6 40-75F | 164-15A | . | 164-115A | . |
| Cessna 150C | 600x6 40-57 | 164-5 | . | 164-105 | . |
| Cessna 150D,E | 500x5 40-78 | 164-17 | . | 164-117 | . |
| Cessna 150F,G,H,J | 600x6 40-97A | 164-26A | . | 164-126A | . |
| Cessna 150K | 600x6 40-97A | 164-26A | . | 164-126A | . |
| Cessna A150K, F150, FA150 | 600x6 40-113 | 164-40 | . | 164-140 | . |
| Cessna 152, F152, FA152 | 600x6 40-113 | 164-40 | . | 164-140 | . |
| Cessna 172 | 600x6 40-97A | 164-26A | . | 164-126A | . |
| | 600x6 40-113 | 164-40 | . | 164-140 | . |
| Cessna 177, 177RG, F177RG | 600x6 40-113 | 164-40 | . | 164-140 | . |
| Cessna 177A, B | 600x6 40-97A | 164-26A | . | 164-126A | . |
| | 600x6 40-75B | 164-15A | . | 164-115A | . |
| Cessna 180 | 600x6 40-75D | 164-63 | --- | 164-163 | --- |
| | 600x6 40-66 | 164-7 | . | 164-107 | . |
| Cessna 182H, J, K, L, M, N | 600x6 40-97A | 164-26A | . | 164-126A | . |
| Cessna 182N | 600x6 40-113 | 164-40 | . | 164-140 | . |
| Cessna 182J, K, L, N | 600x6 40-97A | 164-26A | . | 164-126A | . |
| | 600x6 40-32 | 164-7 | . | 164-107 | . |
| Cessna 185, A, B | 600x6 40-66 | 164-7 | . | 164-107 | . |
| Cessna 185C, D, E | 600x6 40-75B | 164-15A | . | 164-115A | . |
| Cessna A185E 1966 & Up | 600x6 40-75B | 164-15A | . | 164-115A | . |
| 1969 & Up | 600x6 40-75D | 164-36 | . | 164-136 | . |
| 1967, 1968 | 600x6 40-66 | 164-7 | . | 164-107 | . |
| Cessna 188, A188 | 600x6 40-75B | 164-15A | . | 164-115A | . |
| Cessna 205, 205A | 600x6 40-67 | 164-7 | . | 164-107 | . |
| | 600x6 40-75B | 164-15A | . | 164-115A | . |
| Cessna 206, U206A, TU206A & Turbo | 600x6 40-75 | 164-15A | . | 164-115A | . |
| Cessna U206D, D & Turbo | 600x6 40-75D | 164-36 | . | 164-136 | . |
| Cessna P206, A, TP206A | 600x6 40-75 | 164-15A | . | 164-115A | . |
| Cessna P206, A, B, C, D, & Turbo | 600x6 40-75B | 164-15A | . | 164-115A | . |
| Cessna P206D,E,Turbo & Super Skylane | 600x6 40-75D | 164-36 | . | 164-136 | . |
| Cessna 207, T207 | 660x6 40-75B | 164-15A | . | 164-115A | . |
| | 600x6 40-75D | 164-36 | . | 164-136 | . |
| Cessna Caravan 1, & 208B | 40-179 | 164-22201 | . | --- | --- |
| Cessna 210C | 600x6 40-21 | 164-9 | . | 164-109 | . |
| Cessna 210 series P210, T210 | 600x6 40-75B | 164-15A | . | 164-115A | . |
| Cessna 210N, P210N | 600x6 40-75B | 164-15A | . | 164-115A | . |
| Cessna 336 Series | 600x6 40-67 | 164-7 | . | 164-107 | . |
| 1963-1965 | 600x6 40-75B | 164-15A | . | 164-115A | . |
| Gulfstream AA-1, A, B, AA-5, | 600x6 40-86A | 164-20 | . | 164-120 | . |
| Gulfstream AA-1,A,B,AA-5, AA-5B, TR2 | 600x6 40-88C | 164-20 | . | 164-120 | . |
| Helio H-295, 395, 391 | 600x6 40-75E | 164-15A | . | 164-115A | . |
| | 600x6 40-75D | 164-36 | . | 164-136 | . |
| Maule M4, M5 Series | 600x6 40-97D | 164-26A | . | 164-126A | . |
| Mooney M20A, M20B | 600x6 40-24 | 164-9 | . | 164-109 | . |
| Mooney 20C | 600x6 40-86 | 164-20 | . | 164-120 | . |
| Mooney 20D, E | 600x6 40-24 | 164-9 | . | 164-109 | . |
| Mooney 20D, F,G,J,K | 600x6 40-86 | 164-20 | . | 164-120 | . |
| Piper PA22-108 | 600x6 40-28 | 164-5 | . | 164-105 | . |
| Piper PA24-180,250 | 600x6 40-58 | 164-9 | . | 164-109 | . |
| Piper PA24-260 | 600x6 40-84 | 164-19 | . | 164-119 | . |
| Piper PA25 | 600x6 40-84A | 164-33 | . | 164-133 | . |
| Piper PA28 Series Cherokee Warrior | 600x6 40-28 | 164-20 | . | 164-120 | . |
| Archer | 600x6 40-86 | 164-20 | . | 164-120 | . |
| Pathfinder | 600x6 40-86B | 164-20 | . | 164-120 | . |
| Cherokee | 600x6 40-58 | 164-9 | . | 164-109 | . |
| Piper PA28R Series | | | | | |
| Cherokee/Arrow | 600x6 40-84 | 164-19 | . | 164-119 | . |
| | 600x6 40-86 | 164-20 | . | 164-120 | . |
| Dakota | 600x6 40-86B | 164-20 | . | 164-120 | . |
| Piper PA32 Series | 600x6 40-90A | 164-23 | . | 164-123 | . |
| Piper P34 Series | 600x6 40-90A | 164-23 | . | 164-123 | . |
| Piper PA38-112 | 500x5 40-78B | 164-17 | . | 164-117 | . |
| Piper PA44 | 600x6 40-90A | 164-23 | . | 164-123 | . |
| Rockwell Int. 112, 112A, B | 600x6 40-113A | 164-43 | . | 164-143 | . |
| 112B, TC, TCA114 | 600x6 40-75H | 164-15A | . | 164-115A | . |
| Schweizer SGS1-34 | 500x5 40-78B | 164-17 | . | 164-117 | . |
| Spencer Amph. S12E | 600x6 40-74 | 164-7 | . | 164-107 | . |
| Taylorcraft F-19 | 600x6 40-86 | 164-20 | . | 164-120 | . |
| Varga 2150A | 600x6 40-97E | 164-26A | . | 164-126A | . |
| Waco | 600x6 40-97A | 164-26A | . | 164-126A | . |
| Wing Derringer | 600x6 40-84 | 164-19 | . | 164-119 | . |



REPLACEMENT DISCS & LININGS FOR CESSNA/MCCAULEY WHEELS & BRAKES

| Cessna Aircraft Model | Cessna/McCauley Wheel Assembly | Cessna/McCauley Brake Disc Assy. | Cleveland Brake Disc Assy. | Price |
|------------------------|--|----------------------------------|----------------------------|-------|
| 150, 150A | C163004-0104 | B-30440 | 164-09200 | . |
| | C163003-0101 or C163001-0102 or C163002-0101 | B-30195 | 164-09300 | . |
| 152, A152, F152, FA152 | C163005-0101 or C163006-0101 | B-30007 | 164-09400 | ----- |
| | | C30615-1 | 164-08800 | . |
| 172, F172, R172, FR172 | C163004-0104 | B-30440 | 164-09200 | . |
| | C163003-0101 or C163003-0102 or C163004-0104 | B-30195 | 164-09300 | . |
| | C163002-0101 | B-30007 | 164-09400 | ----- |
| | C163006-0101 | C30615-1 | 164-08800 | . |
| 172, F172, 172RG 177 | C163006-0101 | C30615-1 | 164-08800 | . |
| | C163005-0101 | C30615-1 | 164-08800 | . |
| 177RG | C163005-0101 or C163006-0101 | C30615-1 | 164-08800 | . |
| | C163004-0103 | C30414 | 164-09500 | . |
| 180, 185 | C163004-0101 | C30388 | 164-09700 | . |
| | C163006-0103 Std. | C30615-3 | 164-9 | . |
| | C163006-0102 HD | C30615-2 | 164-08900 | . |
| 182, F182 | C163006-0101 | ----- | ----- | ----- |
| | or C163006-0103 | C30615-1 | 164-08800 | . |
| R182, FR182, TR 182 | C163006-0103 | C30615-3 | 164-9 | . |
| | C163004-0102 | C30398 | 164-09600 | . |
| | C163004-0101 | C30388 | 164-09700 | . |
| | C163006-0103 Std. | C30615-3 | 164-9 | . |
| U206-TU206 | C163006-0102 HD | C30615-2 | 164-08900 | . |
| | C163006-0103 | C30398 | 164-09600 | . |
| 210, T210, P210 | C163006-0103 | C30615-3 | 164-9 | . |
| | C163006-0103 | C30615-3 | 164-9 | . |

4-1/2 INCH BRAKE BANDS WITH PINS



Band Brakes are simple, effective and economical for a variety of small, light-duty small vehicles, or as parking brakes. They were designed to work with either 4" or 4-1/2" diameter drums, but may work well with drums ranging in size from 3-7/8" through 4-5/8" O.D.

- 2 Piece Bonded Lining
- Riveted End/Mounting Brackets
- Steel Brake Pin with Cable Hole Included
- Band Brake for 4.5" drum - Packaged PN 2555

P/N 06-00662

RAPCO BRAKE DISCS

RAPCO BRAKE DISCS



Rapco brake disc are FAA PMA approved replacements for Cleveland and McCauley. They are precision machined from forged steel, heat treated and nickel plated for long life. **IMPORTANT:** This is only a partial listing, to assure the correct part number, please contact the sales department, or download the complete Rapco brake guide from our web site.

LG

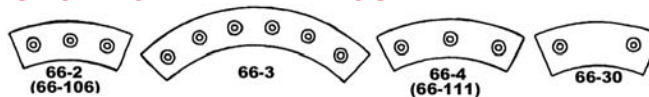
| Aircraft Model | Standard Rapco Disc | Part No. | Price |
|---|---------------------|----------|-------|
| Aerotek (Pitts) S-1, S-2A | RA164-01700 | 06-00618 | . |
| Air Tractor AT-300, AT-301, AT-302, AT-400A | RA164-03006 | 06-00414 | . |
| American Citabria, Decathlon | RA164-00500 | 06-00612 | . |
| American Champ | RA164-01700 | 06-00618 | . |
| Bellanca Viking 300A | RA164-01501 | 06-00616 | . |
| Beech 77 Skipper | RA164-06900 | 06-00631 | . |
| Bonanza 33, 35 | RA164-02504 | 06-00622 | . |
| Bonanza 36 | RA164-02505 | 10-03106 | . |
| Britten Norman BN-2 | RA164-02201 | 06-00621 | . |
| Cessna 150A,B,C | RA164-00400 | 06-00118 | . |
| Cessna 150C 1963 | RA164-00500 | 06-00612 | . |
| Cessna 150D,E | RA164-01600 | 06-00617 | . |
| Cessna 150F,G,H,J,K | RA164-02601 | 06-00623 | . |
| Cessna A150, 150K, F150, FA150 | RA164-04000 | 06-00628 | . |
| Cessna F152, FA152 | RA164-04000 | 06-00628 | . |
| Cessna 172 F,G,H,I,K | RA164-02601 | 06-00623 | . |
| Cessna 172 McCauley | RA164-30440 | 06-00578 | . |
| | RA164-30195 | 06-00579 | . |
| Cessna 172, F172 | RA164-04000 | 06-00628 | . |
| Cessna 177, 177RG, F177RG | RA164-04000 | 06-00628 | . |
| | RA164-30440 | 06-00578 | . |
| | RA164-02601 | 06-00623 | . |
| Cessna 177A, B | RA164-02601 | 06-00623 | . |
| | RA164-04000 | 06-00628 | . |
| | RA164-30195 | 06-00579 | . |
| | RA164-30440 | 06-00578 | . |
| | RA164-30615-1 | 06-00580 | . |
| Cessna 180 | RA164-01501 | 06-00616 | . |
| | RA164-00700 | 06-00613 | . |
| Cessna 182, F182 | RA164-30651-1 | 06-00580 | . |
| Cessna R182, FR182, TR182 | RA164-30651-3 | 06-00585 | . |
| Cessna 182 | RA164-30440 | 06-00578 | . |
| Cessna 182, A182 | RA164-04000 | 06-00628 | . |
| Cessna T182, TR182 | RA164-30651-3 | 06-00585 | . |
| Cessna 182G, H, J, K, L, M, N | RA164-02601 | 06-00623 | . |
| Cessna 185 McCauley | RA164-30388 | 06-00584 | . |
| | RA164-30615-2 | 06-00586 | . |
| Cessna 185, A, B | RA164-00700 | 06-00613 | . |
| Cessna 185C, D, E | RA164-01501 | 06-00616 | . |
| Cessna A185E 1969 & Up | RA164-03601 | 06-00627 | . |
| Cessna A185E 1967, 1968 | RA164-00700 | 06-00613 | . |
| Cessna 188, A188 | RA164-03106 | 06-01129 | . |
| Cessna 205, 205A | RA164-00700 | 06-00613 | . |
| | RA164-01501 | 06-00616 | . |
| Cessna U206, TU206 McCauley | RA164-30398 | 06-00588 | . |
| | RA164-30651-3 | 06-00585 | . |
| Cessna 206,Turbo U206A,TU206A | RA164-01501 | 06-00616 | . |

| Aircraft Model | Standard Rapco Disc | Part No. | Price |
|-------------------------------------|---------------------|----------|-------|
| Cessna U206D, Turbo | RA164-03601 | 06-00627 | . |
| Cessna P206, A,TP206A | RA164-01501 | 06-00616 | . |
| Cessna P206, A,B,C,D,Turbo | RA164-01501 | 06-00616 | . |
| Cessna P206D, E,Turbo,Super Skylane | RA164-03601 | 06-00627 | . |
| Cessna 207, T207 | RA164-01501 | 06-00616 | . |
| | RA164-03601 | 06-00627 | . |
| Cessna 210, P210,T210 McCauley | RA164-30651-3 | 06-00585 | . |
| | RA164-30398 | 06-00588 | . |
| Cessna 210C | RA164-00900 | 06-00614 | . |
| Cessna P210 | RA164-07800 | 06-00633 | . |
| Cessna 210 series P210, T210 | RA164-01501 | 06-00616 | . |
| Cessna 336 Series | RA164-00700 | 06-00613 | . |
| Cessna 336 Series, 1963-1965 | RA164-01501 | 06-00616 | . |
| General Avia F1300 | RA164-05700 | 06-00630 | . |
| Gulfstream AA-1,A,B,AA-5,AA-5B,TR2 | RA164-02000 | 06-00620 | . |
| | RA164-01501 | 06-00616 | . |
| Helio H-750, H-295, 391, 395 | RA164-03601 | 06-00627 | . |
| | RA164-01501 | 06-00616 | . |
| Homebuilts | RA164-07500 | 06-00632 | . |
| Industria Unidas A-9B | RA164-02800 | 06-00624 | . |
| Maule M4, M5, M6 Series | RA164-02601 | 06-00623 | . |
| Mooney M20A, thru Super 21 | RA164-00900 | 06-00614 | . |
| Mooney M20C,E,F,G,J,K | RA164-02000 | 06-00620 | . |
| Mooney 201 | RA164-02300 | 10-03107 | . |
| Piper PA22-108 | RA164-00500 | 06-00612 | . |
| Piper PA23-235 | RA164-00206 | 06-00610 | . |
| | RA164-03206 | 06-00625 | . |
| Piper PA23-250 | RA164-05700 | 06-00630 | . |
| | RA164-00900 | 06-00614 | . |
| Piper PA24-180, 250 | RA164-01900 | 06-00619 | . |
| Piper PA25 | RA164-03300 | 06-00626 | . |
| Piper PA28 Early | RA164-00500 | 06-00612 | . |
| Piper PA28R-180 Early | RA164-01900 | 06-00619 | . |
| Piper PA28 Series Comman | RA164-02000 | 06-00620 | . |
| Piper PA28-236, PA32-300, PA32-301 | RA164-02300 | 10-03107 | . |
| Piper PA30 | RA164-01000 | 06-00615 | . |
| Piper PA32, -760, -300 | RA164-02201 | 06-00621 | . |
| Piper PA32, -660, -300 | RA164-21600 | 06-00634 | . |
| Piper PA32-300, 32R, -32RT | RA164-21600 | 06-00634 | . |
| Piper PA34-200, PA34-220T | RA164-02300 | 10-03107 | . |
| Piper PA38-112 | RA164-01700 | 06-00618 | . |
| Rockwell 112, 112A,112B | RA164-04300 | 06-00629 | . |
| Rockwell Int. 112TC, TCA114 | RA164-01501 | 06-00616 | . |
| Schweizer G-164A, 450 | RA164-03006 | 06-00414 | . |
| Schweizer 6164-B, -C, -D, 450 | RA164-05806 | 06-01128 | . |
| Taylorcraft F-19 | RA164-02000 | 06-00620 | . |
| Siai-Marchetti 260SW | RA164-02300 | 10-03107 | . |
| Varga 2150A | RA164-02601 | 06-00623 | . |
| Waco | RA164-02601 | 06-00623 | . |
| Wing Derringer | RA164-01900 | 06-00619 | . |

BRAKE LININGS

CLEVELAND STANDARD ORGANIC BRAKE LININGS

Order by **NEW Cleveland part number.**
All Linings Include Rivets



| Aircraft Make & Model | Old Cleveland P/N | # Req. | New Cleveland P/N | Price |
|---|-------------------|--------|-------------------|-------|
| AEROTEK - Pitts S-1, S-2A | 66-2 | 2 | 66-106 | . |
| BEECH - Musketeer | 66-55 | 2 | 66-105 | . |
| Sierra Sport Sundowner B-19; C-23, 24R | 66-55 | 2 | 66-105 | . |
| Debonair CD-1 thru CD-387 | 66-4 | 2 | 66-111 | . |
| Debonair B-33 | 66-2 | 2 | 66-106 | . |
| Skipper | 66-71 | 2 | 66-112 | . |
| BELLANCA - Citabria, Champ | 66-2 | 2 | 66-106 | . |
| Scout | 66-3 | 1 | 66-106 | . |
| Decathlon, Scout 8GCBC | 66-2 | 2 | 66-106 | . |
| Viking, Aries 250 | 66-55 | 2 | 66-105 | . |
| CESSNA - 150A, B, C, D, E | 66-2 | 2 | 66-106 | . |
| 150F, G, H, J, K, 152, F-152, FA-152 | 66-55 | 2 | 66-105 | . |
| All Cessnas using Cessna/McCauley Brakes | B-30026 | 2 | 66-109 | . |
| Skyhawk 172, Cardinal 177 All | 66-55 | 2 | 66-105 | . |
| Skywagon 180 | 66-55 | 4 | 66-105 | . |
| Skylane 182 H, J, K, L, M, N | 66-55 | 2 | 66-105 | . |
| 185A, B | 66-2 | 2 | 66-106 | . |
| 185C, D, E | 66-55 | 2 | 66-105 | . |
| 185 with crosswind gear | 66-2 | 2 | 66-106 | . |
| AGWagon | 66-55 | 4 | 66-105 | . |
| Stationair-6 205, 205A | 66-2 | 2 | 66-106 | . |
| Stationair-6 205, 205A (s/n 205-0481 & up) | 66-55 | 4 | 66-105 | . |
| 206, U206A, D, E & Turbo models | 66-55 | 4 | 66-105 | . |
| 207, T207 | 66-55 | 4 | 66-105 | . |
| 210C | 66-4 | 2 | 66-111 | . |
| 210, P210, T210, 210N, P210N | 66-55 | 4 | 66-105 | . |
| 305A, B, C, D, E, F | 66-55 | 4 | 66-105 | . |
| 310, 335 | 66-33 | 6 | 66-33 | . |
| Skymaster 336 | 66-2 | 2 | 66-106 | . |
| 337, T337, 337B, C, D, E, T337B, C, D, E | 66-55 | 4 | 66-105 | . |
| All Cessnas using Cessna/McCauley Brakes | B-30026 | 2 | | |
| GRUMMAN | | | | |
| AA-1, A, B, AA-5, AA-5A, AA-5B, Tiger, TR-2 | 66-55 | 2 | 66-105 | . |
| AG-CAT | 66-3 | 1 | 66-106 | . |
| G-154 | 66-56 | 2 | 66-106 | . |
| MAULE - Jetasen/Rocket, Lunar/Rocket | 66-2 | 2 | 66-106 | . |
| | 66-55 | 2 | 66-105 | . |

| Aircraft Make & Model | Old Cleveland P/N | # Req. | New Cleveland P/N | Price |
|--|-------------------|--------|-------------------|-------|
| MOONEY - Most M20, A, B, D, E | 66-4 | 2 | 66-111 | . |
| PIPER - Colt PA22-108 | 66-2 | 2 | 66-106 | . |
| | 66-56 | 2 | 66-106 | . |
| Apache PA-23-150, 160 | 66-2 | 2 | 66-106 | . |
| | 66-56 | 2 | 66-106 | . |
| Apache/Aztec PA-23-235, 250 Series | 66-2 | 4 | 66-106 | . |
| | 66-3 | 4 | 66-106 | . |
| Comanche PA-24-180, 250, 260 | 66-2 | 2 | 66-106 | . |
| Pawnee C PA-25 | 66-2 | 2 | 66-106 | . |
| Cherokee/Cruiser PA-28-140 | 66-2 | 2 | 66-106 | . |
| PA-28-140 s/n 28-20521 & up | 66-55 | 2 | 66-105 | . |
| Cherokee PA-28-150 | 66-2 | 2 | 66-106 | . |
| Cherokee PA-28-160 s/n 28-1761 & up | 66-55 | 2 | 66-105 | . |
| Cherokee Warrior PA-28-151 | 66-55 | 2 | 66-105 | . |
| Cherokee PA-28-160 | 66-2 | 2 | 66-106 | . |
| Cherokee/Warrior II PA-28-161 | 66-55 | 2 | 66-105 | . |
| Cherokee/Archer PA-28-180 to 28-1760 | 66-2 | 2 | 66-106 | . |
| Cherokee/Archer PA-28-180 28-1761 & up | 66-55 | 2 | 66-105 | . |
| Cherokee/Pathfinder PA-28-181, PA-28-236 | 66-55 | 2 | 66-105 | . |
| PA-28R-180, PA-28-200 | 66-2 | 2 | 66-106 | . |
| PA-28R-180 s/n 28R-7130006 & up | 66-55 | 2 | 66-105 | . |
| PA-28-200 s/n 28R-7135110 & up | 66-55 | 2 | 66-105 | . |
| PA-28R-201T, 201, PA-28RT-201, 201T | 66-55 | 2 | 66-105 | . |
| Early PA-28-235 | 66-56 | 2 | 66-106 | . |
| Early PA-28R-180, 200 | 66-56 | 2 | 66-105 | . |
| Twin Comanche PA-30 | 66-19 | 2 | 66-62 | . |
| Navajo B, PA31-300, 310, Turbo Navajo | 66-33 | 6 | 66-33 | . |
| Chieftain, PA-31-350 | 66-33 | 6 | 66-33 | . |
| Cherokee/Six-260 PA-32-260 | 66-55 | 4 | 66-105 | . |
| PA-32-300 s/n 32-40000 thru 7200029 | 66-55 | 4 | 66-105 | . |
| PA-32R-300, 32RT-300 | 66-55 | 4 | 66-105 | . |
| PA-38-112 (6" wheel) | 66-71 | 2 | 66-112 | . |
| PA-38-112 (5" wheel) | 66-56 | 2 | 66-106 | . |
| PA-39 | 66-19 | 1 | 66-62 | . |
| PA-39, PA-39-1 & up | 66-3 | 1 | 66-106 | . |
| PA-44-180 | 66-55 | 4 | 66-105 | . |
| TAYLORCRAFT | | | | |
| Sportsman 100 | 66-55 | 2 | 66-105 | . |

LG



RAPCO BRAKE RIVET TOOL REPLACEMENT PUNCH/ANVIL

Complete with: Rivet Punch, Set and Anvil for setting rivets. More Convenient and easier to use than most punch style tools. Will not crack or distort brake linings. Can be used in vise or hand held.

Brake Rivet tool RA825.....P/N 10-02065.....
Replacement Punch/Anvil RA825AP.....P/N 10-02066.....

BARRY JAY BRAKE LININGS

| Cleveland Equiv. | Part No. | \$/box of 8 | Cleveland Equiv. | Part No. | \$/box of 8 |
|------------------|----------|-------------|------------------|----------|-------------|
| 66-108 | 06-00149 | . | 66-103A | 06-00146 | . |

Barry Jay Brake Linings are NOT FAA/PMA approved. Sold in boxes of 8 ONLY.

Advise aircraft make, model and serial number to assure that correct brake lining part number is furnished Extra rivets, P/N 105-2, for all models listed in table .05 each



BRAKE LINING TOOL

Designed especially to economically reline brakes, this riveting set is a handy tool for many other jobs where rivets are used to fasten leather, canvas, plastic and metal parts. Deluxe tool is screw-down type.

Dixe. Brake Lining Tool.....P/N 12-20810.....
Brake Lining Tool.....P/N 824.....
Brake Lining Rivets 4-4.....P/N 105-2.....
Brake Lining Rivets 4-6.....P/N 06-02300.....

RAPCO REPLACEMENT BRAKE LININGS

As a RAPCO factory authorized distributor, Aircraft Spruce now offers these FAA-PMA approved brake lining replacements for Cleveland & McCauley brakes as an economical alternative to Cleveland factory linings. All are substantially discounted, with even further savings on quantity orders.



| Our P/N 06- | Old Cleveland P/N | New Cleveland P/N | RAPCO P/N | Our Price Each |
|-------------|-------------------|-------------------|-----------|----------------|
| 16956 | 66-2 | 66-106 | RA66-106† | . |
| 16956 | 66-3 | 66-106 | RA66-106† | . |
| 16958 | 66-4 | 66-111 | RA66-111 | . |
| 16915 | 66-15 | 66-15 | RA66-15 | . |
| 16919 | 66-19 | 66-19 | RA66-19 | . |
| 16922 | 66-22 | 66-22 | RA66-22 | . |
| 16955 | 66-30 | 66-105 | RA66-105† | . |
| 16933 | 66-33 | 66-33 | RA66-33 | . |
| 16959 | 66-35 | 66-108 | RA66-108† | . |
| 16944 | 66-44 | 66-44 | RA66-44 | . |
| 16955 | 66-55 | 66-105 | RA66-105† | . |

| Our P/N 06- | Old Cleveland P/N | New Cleveland P/N | RAPCO P/N | Our Price Each |
|-------------|-------------------|-------------------|-----------|----------------|
| 16956 | 66-56 | 66-106 | RA66-106† | . |
| 16956 | 66-57 | 66-106 | RA66-106† | . |
| 16958 | 66-58 | 66-111 | RA66-111† | . |
| 16959 | 66-59 | 66-108 | RA66-108† | . |
| 16962 | 66-62 | 66-62 | RA66-62 | . |
| 16965 | 66-65 | 66-65 | RA66-65 | . |
| 16966 | 66-66 | 66-66 | RA66-66 | . |
| 16968 | 66-68 | 66-68 | RA66-68 | . |
| 16987 | 66-87 | 66-109 | RA66-109† | . |
| 16987 | 66-88 | 66-109 | RA66-109† | . |

RAPCO BRAKE LINING KITS

All Rapco Brake Lining kits come complete with correct number of brake linings and rivets needed for each aircraft.

| Kit P/N | No. of linings | Kit Price |
|-------------|----------------|-----------|
| RA66-105-4K | 4 | . |
| RA66-105-8K | 8 | . |
| RA66-106-4K | 4 | . |
| RA66-106-8K | 8 | . |
| RA66-108-4K | 4 | . |
| RA66-108-8K | 8 | . |
| RA66-109-4K | 4 | . |
| RA66-109-8K | 8 | . |
| RA66-111-4K | 4 | . |

RIVETS

| RAPCO P/N | Size | \$/ea. |
|------------------------------|------------|--------|
| RA105-00200-Countersunk Head | 9/32" Long | . |
| RA105-00700-Flat Head | 1/4" Long | . |

* Use 2 each 66-106 linings to replace 1 each 66-3/66-57. **ALL LININGS INCLUDE RIVETS**

† Not for use on Stainless Steel Discs

NOTE: Cessna Aircraft with Cessna / McCauley brakes use only RA66-109 linings.

BRAKE PARTS - SHIMMY DAMPERS

GOODYEAR BRAKE PARTS

Most replacement parts are available for aircraft still equipped with Goodyear wheels and brakes. We provide prompt shipment on replacement parts such as brake linings, brake discs, clips, etc. Request quotation on any unlisted Goodyear part numbers.

Brake 5.00 x 5, Cessna 150, Assy. No. 9532302

5010727..... Anvil Lining ea.
9524161-1 Piston Lining ea.

Brake 6.00 x 6, Cessna 120, 140, Aeronca 7AC, 11AC, Swift, Lus., Assy. No. 9520517

9511261-1 Anvil/Piston Lining ea.
9523482..... Disc Clips..... ea.

Brake 6.00 x 6, Cessna 120, 140, Swift, Luscombe, Sedan, Aeronca 11AC, Assy. No. 9520298

9520435..... Disc Clips, 4 required ea.

Brake 6.00 x 6, Cessna 172, 175, 180, 182, 210, Lake, Assy. No. 9532181

9511271-2 Anvil Lining ea.
9511269-2 Piston Lining ea.

Brake 6.00 x 6, Cessna 170, 172, 175, 180, 182, 210 Assy. No. 9530839 Aeronca 7AC, 11AC, 15AC, Stinson 150, 165, Assy. No. 951239 & 9532181

9511271-2 Anvil Lining ea.
9511269-2 Piston Lining ea.
9523482..... Disc Clip ea.

Brake 6.00 x 6, Aeronca 7AC, 11AC, Funk, Schweizer Glider, Luscombe 8,8A, Assy. No. 9530131, Assy. No. 511254

9520435..... Disc Clips, 4 required ea.

Brake 6.00 x 6, Ercoupe Forney, Assy. No. 9520285

9523482..... Disc Clip ea.

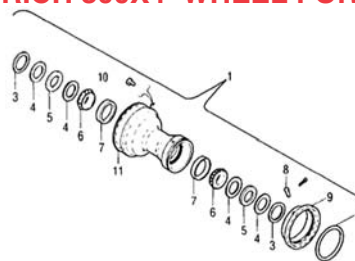
Brake 6.50 x 8, Beech T34, 35, Camair, Assy. No. 511731

9510714-2 Anvil Lining ea.
9510713-1 Piston Lining ea.
9523937..... Disc Clip ea.

Brake 6.50 x 10, Cessna 190, 195, 310, 320 Assy. No. 951731

5009853..... Piston Lining ea.
95-10375 Disc Clip, 5 required ea.

GOODRICH 800X4 WHEEL FOR PIPER



| Figure No. | PN | Description | Price |
|------------|------------|--|-------|
| 1 | 06-00941 | Wheel and brake Drum Assembly | . |
| 2 | A85-118 | Lock Ring, Side | . |
| 3 | A85-218 | Lock Ring, Felt Retainer | . |
| 4 | A56-4 | Felt, Retainer | . |
| 5 | B227-52 | Felt, Grease Retaining | . |
| 6 | 08125 | Cone Bearing | . |
| 7 | 08231 | Cup Bearing | . |
| 8 | A20-54 | Pin, Anchor | --- |
| 9 | B11-5 | Casting, Side | . |
| 10 | AN441-6-6P | Rivet, Brake Drum | . |
| 11 | B13-4 | Drum, Brake (I.D. Must be turned after installation.) | . |

GOODRICH BRAKE ASSEMBLY PARTS FOR ALL PIPERS WITH 8.00 X 4 WHEELS



Brake Block (750-033)
P/N 06-00013.....
Spring (750-029)
P/N 06-00430.....
Shield (750-093)
P/N 06-01042.....

DIAPHRAGM FOR BRAKE CYLINDER

Master cylinder diaphragm for Piper J-3/PA-11
P/N 06-00759.....

LG

LORD SHIMMY DAMPERS



This high performance shimmy damper is designed to last at least 10 yrs without maintenance and contains no hydraulic fluid, so it cannot leak. Priced at about half the cost of equivalent Cessna factory dampers. 5-yr warranty. All dampers are STC'd and PMA approved.

Model SE-1051-2 for Cessna 150, 152, 172... P/N 05-00443.....

Note: The Lord Shimmy Damper PN 05-00443 will not work on Cessna 172 Years: 1956-1959

Model SE-1051-3 for Cessna 150A-150F..... P/N 05-00444.....

SE-1068-5 for Cessna # 0743624-2..... P/N 05-02610.....

for Cessna 206, 207, 210..... P/N 05-00446.....

SE-1070-7 Replacement for Cessna # SE-1070-4, SE-2070-6 For Cessna 208, 208A, & 208B..... P/N 05-03382.....

FOR COMPLETE INSTALLATION ELIGIBILITY LIST SEE:

www.aircraftspruce.com



LORD SHIMMY DAMPER FOR BEECH AIRCRAFT

This nose gear shimmy damper from LORD Corporation is FAA approved for many models of Beech Aircraft. The patented technology provides consistent damping without maintenance. Instead of using fluids to resist motion, the shimmy damper features a unique rubber formulation with a high-tech lubricant to absorb nose wheel vibration. Length: 5-1/2". Long life - Demonstrated performance in excess of 5,000 ground-air-ground duty cycles, expecting a product life of more than 10 years of usage on typical, high-use, single-engine piston airplanes. Consistent damping - From -30 degrees to +150 degrees F. FAA Approved.

P/N 05-03421.....

| Beech Aircraft Eligibility List | | | |
|---------------------------------|------------|------------|---------|
| A36TC | B36TC | Bonanza 36 | A36 |
| G36 | Bonanza 35 | A35 | B35 |
| C35 | D35 | E35 | F35 |
| G35 | H35 | J35 | K35 |
| M35 | N35 | P35 | S35 |
| V35 | V35-TC | V35A | V35A-TC |
| V35B | V35B-TC | E33 | E33A |
| E33C | E33 | F33A | G33A |
| Barron 55 | A55 | B55 | C55 |
| D55 | E55 | 56TC | A56TC |
| 58 Barron | 58TC | 58P | |

PIPER SHIMMY DAMPER SERVICING KIT

Finally, a shimmy damper servicing kit. One of the most neglected components on Piper aircraft is the shimmy dampener. The shimmy damper aids nose wheel steering by reducing the shimmy of the nose wheel during takeoff and landing, and during high-speed taxiing. Even minor shimmying can lead to serious damage to the nose gear and engine mount and affect the airworthiness of the aircraft. The shimmy damper is a sealed unit that, until now, could not be serviced and required costly replacement.

The STC and accompanying servicing kit allows the MAECO shimmy damper to be modified and serviced, restoring the shimmy damper to like-new condition and enabling it to perform as originally designed! The servicing kit installs in less than an hour by any A&P mechanic. Once modified, if the shimmy damper ever needs servicing again, the owner can service it with hydraulic fluid.

Important: Enter Piper Aircraft Model, Serial number, and "N" number at time of order. P/N 06-00846.....

FOR COMPLETE INSTALLATION ELIGIBILITY LIST SEE
www.aircraftspruce.com

LORD SHIMMY DAMPER FOR CESSNA AIRCRAFT 300/400 SERIES



Now STC'd for most models of Cessna's 300/400 Series Aircraft. The LORD shimmy damper can replace the original equipment, and provides consistent damping without maintenance or the use of hydraulic fluid, therefore- no leakage. It will last 8-10 years without service; features a unique rubber formulation with a high-tech lubricant to absorb nose wheel vibration; and LORD shimmy dampers can be found on most Cessna single engine aircraft in production today. LORD shimmy damper: P/N SE1090-1 (as an alternate for the 0842410-2 hydraulic damper). STC:

SA02546NY.

Models pending: R182 ; 335 and 402C.

Approved for all 300/400 series twins except the T303, 336, 337.

P/N 05-04185.....

AIRCRAFT TIRE APPLICATION CHART

Tires/Tubes Certified Aircraft Application Chart - Tires are low speed unless designated. Tires are tube-type unless otherwise indicated. Consult aircraft manual for individual tire pressure. - **IMPORTANT: READ THIS LEGEND FIRST** -

Code: TL = Tubeless; SC = Smooth Contour; DT = Deflector Type; DDT = Dual Deflector Type

APPLICATION CHARTS - The application information presented within this manual is based on the most current information available and is intended for use as a **GENERAL REFERENCE ONLY**. Any inquiries regarding specific model aircraft should be directed to the applicable airframe manufacturer. Your requirements may vary depending on the actual configuration of your aircraft. All Goodyear aircraft tires are manufactured in accordance with TSO-C62, MIL-T-5041 or AIR8505A and/or applicable airframe manufacturer specifications. Additionally, all tire sizes included in this manual may not necessarily be available from Goodyear. Contact your Goodyear Representative for specific tire information and availability. **Failure to make this verification and to install unapproved tires on an aircraft may result in tire failure causing property damage, serious injury, or loss of life.**

CESSNA

| Model | Name | Main Tire | | Auxiliary Tire | |
|---------------|---------------------|------------|------|----------------|-----|
| | | Tire Size | Ply | Tire Size | Ply |
| 120, 140 | — | 6.00-6 | 4 | 5.00-5 | 4 |
| 150, 152 | Commuter, Aerobat | 6.00-6 | 4 | 5.00-5 | 4 |
| 172 | Skyhawk | 6.00-6 | 4 | 5.00-5 | 4 |
| R172 | Hawk XP | 6.00-6 | 4 | 5.00-5 | 4 |
| 172 Q | Cutlass | 6.00-6 | 6 | 5.00-5 | 4 |
| 172 RG | Cutlass RG | 15x6.00-6 | 6 | 5.00-5 | 4 |
| 175 | Skylark | 6.00-6 | 4 | 5.00-5 | 4 |
| 177 | Cardinal | 6.00-6 | 6 | 5.00-5 | 4 |
| 177 RG | Cardinal RG | 15x6.00-6 | 6 | 5.00-5 | 4 |
| 180 | Skywagon | 6.00-6 | 6 | 8.00"SC | 6 |
| 182, T182 | Skylane | 6.00-6 | 6 | 5.00-5 | 6 |
| 182RG, T182RG | Skylane | 15x6.00-6 | 6 | 5.00-5 | 4 |
| 185 | Skywagon | 6.00-6 | 6 | 8.00 SC | 6 |
| 188 | AG Wagon | 22x8.00-8 | 8 | 10.00 SC | 6 |
| 188 | AG Wagon (optional) | 8.50-10 | 6 | 10.00"SC | 6 |
| 205 | — | 6.00-6 | 6 | 5.00-5 | 6 |
| 206 | Station Air | 6.00-6 | 6 | 5.00-5 | 6 |
| 206, 207 | Optional | 8.00-6 | 6 | 6.00-6 | 4 |
| 207 | Skywagon | 6.00-6 | 8 | 6.00-6 | 8 |
| 208 (FLO) | Caravan | 8.50-10 | 8 | 22x8.00-8 | 8 |
| 208 (STA) | Caravan | 6.50-10 | 8 | 6.50-8 | 8 |
| 210 | Centurion | 6.00-6 | 8 | 5.00-5 | 6 |
| T210, P210 | Turbo, Centurion | 6.00-6 | 8 | 5.00-5 | 10 |
| T303 | Crusader | 6.00-6 | 8 | 6.00-6 | 6 |
| T303 | Optional | 6.50-8 | 8 | 6.00-6 | 6 |
| 310, T310 | — | 6.50-10 | 6 | 6.00-6 | 4 |
| 320, 340 | — | 6.50-10 | 6 | 6.00-6 | 4 |
| 336 | — | 6.00-6 | 6 | 15x6.00-6 | 6 |
| 337 | Super Skymaster | 18x5.5 | 8 | 15x6.00-6 | 6 |
| 401, 402 | — | 6.50-10 | 8 | 6.00-6 | 6 |
| 404 | Titan | 22x7.75-10 | 10TL | 6.00-6 | 6 |
| 411 | — | 6.50-10 | 8 | 6.00-6 | 6 |
| 414 | Chancellor | 6.50-10 | 8 | 6.00-6 | 6 |
| 421 | Golden Eagle | 6.50-10 | 8 | 6.00-6 | 6 |
| 425 | Conquest I | 6.50-10 | 10 | 6.00-6 | 6 |

BELLANCA

| Model | Name | Main Tire | | Auxiliary Tire | |
|----------|--------------|-----------|-----|----------------|-----|
| | | Tire Size | Ply | Tire Size | Ply |
| 260A | Bellanca | 6.00-6 | 6 | 6.00-6 | 4 |
| 17-30A | Viking | 6.00-6 | 6 | 15x6.00-6 | 6/8 |
| 17-31A | Super Viking | 6.00-6 | 6 | 15x6.00-6 | 6/8 |
| 17-31ATC | Turbo Viking | 6.00-6 | 6 | 15x6.00-6 | 6/8 |
| 7GCAA | Citabria | 6.00-6 | 4 | 5.00-5 | 4 |
| 7KCAB | Citabria | 7.00-6 | 4 | 5.00-5 | 4 |
| 8KCAB | Decathlon | 8.00-6 | 4 | 5.00-5 | 4 |
| 8GCBC | Scout | 8.50-6 | 4/6 | 5.00-5 | 4 |

MOONEY

| Model | Name | Main Tire | | Auxiliary Tire | |
|--------|------------|-----------|-----|----------------|-----|
| | | Tire Size | Ply | Tire Size | Ply |
| MO-20 | Ranger | 6.00-6 | 6 | 5.00-5 | 4/6 |
| MO-21C | Super | 6.00-6 | 6 | 5.00-5 | 4/6 |
| MO-22 | Mustang | 6.00-6 | 6 | 15x6.00-6 | 6 |
| MO-20E | Chapparral | 6.00-6 | 6 | 5.00-5 | 4 |
| MO-20F | Executive | 6.00-6 | 6 | 5.00-5 | 6 |
| MO-20J | 201 | 6.00-6 | 6 | 5.00-5 | 6 |
| MO-20K | Turbo 231 | 6.00-6 | 6 | 5.00-5 | 6 |
| M-20K | TSE | 6.00-6 | 6 | 5.00-5 | 4 |
| M-20M | Bravo | 6.00-6 | 6 | 5.00-5 | 6 |
| M-20S | Eagle | 6.00-6 | 6 | 5.00-5 | 6 |
| M-20R | Ovation | 6.00-6 | 6 | 5.00-5 | 6 |

COMMANDER AIRCRAFT

| Model | Name | Main Tire | | Auxiliary Tire | |
|------------|-----------|-----------|-----|----------------|-----|
| | | Tire Size | Ply | Tire Size | Ply |
| 112 | Commander | 6.00-6 | 6 | 5.00-5 | 4 |
| 112B | — | 7.00-6 | 6 | 5.00-5 | 4 |
| 112TC, TCA | — | 7.00-6 | 6 | 5.00-5 | 6 |
| 114 | — | 7.00-6 | 6 | 5.00-5 | 6 |
| 114A, B | — | 6.00-6 | 6 | 5.00-5 | 6 |

BEECH

| Model | Name | Main Tire | | Auxiliary Tire | |
|---------------|-----------------|---------------|------|----------------|------|
| | | Tire Size | Ply | Tire Size | Ply |
| C-17R | Staggerwing | 7.50-10 | 6 | 10.00SC | — |
| BE 18 | Twin Beech | 11.00-12 | 8 TL | 14.50SC | 8TL |
| BE 18H | Twin Beech | 8.50-10 | 8 TL | 8.50-10 | 8TL |
| BE 19 | Musketeer Sport | 6.00-6 | 4 | 6.00-6 | 4 |
| BE 23 | Musketeer | 6.00-6 | 4 | 6.00-6 | 4 |
| BE23C, BE-A24 | Sundowner | 6.00-6 | 4 | 6.00-6 | 4 |
| BE 24-R | Super Sierra | 6.00-6 | 4 | 5.00-5 | 4 |
| BE 33A | Bonanza | 7.00-6 | 6 | 5.00-5 | 4 |
| BE 35 | Bonanza | 7.00-6 | 6 | 5.00-5 | 4 |
| BE 36 | Bonanza | 7.00-6 | 6 | 5.00-5 | 4 |
| BE 50 | Twin Bonanza | 8.50-10 | 6 | 6.50-10 | 4 |
| BE B55 | Baron | 6.50-8 | 8 | 5.00-5 | 6 |
| BE C55 | Baron | 6.50-8 | 8 | 5.00-5 | 6 |
| BE E55 | Baron | 6.50-8 | 8 | 5.00-5 | 6 |
| BE 58 | Baron | 6.50-8 | 8 | 5.00-5 | 4 |
| BE 60 | Duke | 19.5x6.75-8 | 10TL | 15x6.00-6 | 4 |
| BE 65 | Queen Air | 8.50x10 | 8TL | 6.50-10 | 6TL |
| BE-80 | Queen Air | 8.50-10 | 8TL | 6.50-10 | 6TL |
| BE-C90B | King Air | 8.50-10 | 8TL | 6.50-10 | 6TL |
| BE-B200 | Super King Air | 18x5.5 | 10TL | 22x6.75-10 | 8TL |
| BE-200T | Super King Air | 22x6.75-10 | 8TL | 22x6.75-10 | 8TL |
| BE-99 | — | 18x5.5 | 8 TL | 6.50-10 | 6TL |
| BE-300/350 | Super King Air | 22x6.75-10 | 8TL | 19.5x6.75-8 | 10TL |
| BE-2000 | Starship 1 | H19.5x6.75-10 | 8 TL | 19x6.75-8 | 10TL |

PIPER

| Model | Name | Main Tire | | Auxiliary Tire | |
|---------------------|--------------------|-----------|-------|----------------|-------|
| | | Tire Size | Ply | Tire Size | Ply |
| J3 | Cub | 8.00-4 | 4 | 8.00"SC | Solid |
| PA18-135 | Super Cub | 6.00-6 | 4 | 8.00"SC | Solid |
| PA18-150 | Super Cub | 6.00-6 | 4 | 6x2.00 | Solid |
| PA22 | Tri Pacer | 6.00-6 | 6 | 6.00-6 | 6 |
| PA23, 160-235 | Apache | 7.00-6 | 6 | 6.00-6 | 4 |
| PA23-250 | Aztec | 7.00-6 | 8 | 6.00-6 | 4 |
| PA24-180 | Comanche | 6.00-6 | 4 | 6.00-6 | 4 |
| PA24, 250, 260, 400 | Comanche | 6.00-6 | 6 | 6.00-6 | 4/6 |
| PA25-150 | Pawnee | 7.00-6 | 4 | 8x3.00-4 | 4 |
| PA25, 236, 260 | Pawnee | 8.00-6 | 4 | 8x3.00-4 | 4 |
| PA28R-201 | Arrow | 6.00-6 | 6 | 5.00-5 | 4 |
| PA28-140 | Cherokee | 6.00-6 | 4 | 6.00-6 | 4 |
| PA28-150 | Cherokee | 6.00-6 | 4 | 6.00-6 | 4 |
| PA28-151, 161 | Warrior | 6.00-6 | 4 | 5.00-5 | 4 |
| PA28-160 | Cherokee | 6.00-6 | 4 | 6.00-6 | 4 |
| PA28-180 | Cherokee | 6.00-6 | 4 | 6.00-6 | 4 |
| PA28-181 | Archer | 6.00-6 | 4 | 5.00-5 | 4 |
| PA28-235 | Cherokee | 6.00-6 | 4 | 6.00-6 | 4 |
| PA30 | Twin Comanche | 6.00-6 | 4 | 6.00-6 | 6 |
| PA31 | Navajo | 6.50-10 | 8 | 6.00-6 | 6 |
| PA31 | Chieftain | 6.50-10 | 8 | 6.00-6 | 6 |
| PA31T | Navajo | 6.50-10 | 10 | 6.00-6 | 6 |
| PA31P | Pressurized Navajo | 6.50-10 | 8 | 6.00-6 | 8 |
| PA31T-500 | Cheyenne 1A | 6.50-10 | 10 | 6.00-6 | 6 |
| PA32 | 6-300 | 6.00-6 | 6 | 6.00-6 | 6 |
| PA32RT300 | Lance | 6.00-6 | 8 | 6.00-6 | 4 |
| PA31P-350 | Mojave | 6.50-10 | 8 | 17.5x6.25-6 | 10 |
| PA34-220 | Seneca | 6.00-6 | 8 | 6.00-6 | 6 |
| PA36 | Brave | 8.50-10 | 6 | 10x3.5-4 | 6 |
| PA38 | Tomahawk | 6.00-6 | 6 | 5.00-5 | 6 |
| PA42 | Cheyenne IIIA | 6.50-10 | 12 TL | 17.5x6.25-6 | 10 |
| PA44-180 | Seminole | 6.00-6 | 6 | 6.00-6 | 6 |
| 600/601B (PA60) | Aerostar | 6.50-8 | 8TL | 6.00-6 | 6 |
| 601P(PA60-601P) | Aerostar | 6.50-8 | 8 TL | 6.00-6 | 6 |
| 602P(PA60-602P) | Aerostar | 6.50-8 | 8 TL | 6.00-6 | 6 |
| 700P(PA60-700P) | Aerostar | 6.50-8 | 8 TL | 6.00-6 | 6 |
| PA46-350P | Malibu Mirage | 6.00-6 | 8 | 5.00-5 | 6 |
| PA34-270T | Seneca V | 6.00-6 | 8 | 6.00-6 | 8 |
| PA44-180 | Seminole | 6.00-6 | 8 | 5.00-5 | 6 |
| PA32R-301 | Saratoga II HP | 6.00-6 | 8 | 5.00-5 | 6 |
| PA32R-301T | Saratoga II TC | 6.00-6 | 8 | 5.00-5 | 6 |
| PA28-181 | Archer III | 6.00-6 | 4/6 | 6.00-6 | 4 |
| PA28-161 | Warrior III | 6.00-6 | 4 | 5.00-5 | 4 |

MAULE

| Model | Name | Main Tire | | Auxiliary Tire | |
|-----------|------|-----------|-----|----------------|-----|
| | | Tire Size | Ply | Tire Size | Ply |
| MX-7-160 | — | 7.00-6 | 4/6 | 280/250-4 | 4 |
| MXT-7-160 | — | 7.00-6 | 4/6 | 280/250-4 | 4 |
| M-8-235 | — | 7.00-6 | 4/6 | 280/250-4 | 4 |
| MX7-420 | — | 7.00-6 | 4/6 | 280/250-4 | 4 |

LG

GOODYEAR TIRES & TUBES



Flight Custom III™

Goodyear Flight Custom III™ Tires are the ONLY General Aviation tires with Kevlar®:

- Antioxidant formulation to help reduce cracking.
- Deeper Tread Depth.
- Wide Aquachannels®.
- Kevlar® belt package.
- Premium Wingstay® formulation.
- Dual polymer tread compound.
- Get up to 20% more landings.
- Superior wet traction, enhanced treadwear.
- The Goodyear® Flight Custom III® offers up to 20% more landings to removal than its predecessor. Dupont tm and Kevlar (circleR) are trademarks or registered trademarks of E.I. du Pont de Nemours and Company. Results may vary based on proper maintenance, runway and operating conditions.



Flight Special II™

A popular replacement tire for light aircraft, the Flight Special is an unsurpassed combination of value and performance. Designed for long treadlife, this tire is built to last. Every strand of nylon cord in the casing has been triple tempered with time, tension and temperature to provide the ultimate in tire construction, uniformity and strength.

FEATURES:

- Wide rib tread design and large footprint
- Enhanced tread compound for uniform wear and extended service life
- Triple-tempered nylon casing cord.

BENEFITS:

- Enhanced traction
- Uniform wear and extended

SERVICE LIFE:

- Excellent Treadwear.

Flight Mate Butyl tubes are packaged in a case of 10.

A "B" at the end of a description means BENT valve stem. An "S" at the end of a description means STRAIGHT valve stem.

- (1) For use in both 5.00-5 and G380x150-5 (15x6.00-5).
- (2) For use in both 6.00-6 and 15x6.00-6 tires.
- (3) For use in both 7.00-6 and 8.00-6 tires.
- (4) For use in 6.50-8, 19.5x6.75-8 & 22x8.00-8 tires.
- (5) Discontinued, call for Special Pricing.

-Natural rubber aircraft tubes comply with the requirements of Goodyear QAI 2525, which the U.S. Military has accepted in lieu of MIL-I-5014.

-Flight Mate (Butyl) tubes comply with the requirements of SAE document AS 50141.

GOODYEAR TIRES – TUBE TYPE

| Tire Size | PR | Description | Speed (MPH) | Avg. Weight (lbs.) | Part No. | Price Each |
|------------------------|----|-------------------|-------------|--------------------|------------|------------|
| 5.00-4 | 6 | RIB | 120 | 4 | 06-04700 | . |
| 15X6.00-5 / G380-150-5 | 6 | RIB | 120 | 7 | 06-01078 | . |
| 5.00-5 | 4 | Flight Custom III | 160 | 7 | 06-04900-3 | . |
| 5.00-5 | 4 | Flight Special II | 120 | 5 | 06-07110 | . |
| 5.00-5 | 6 | Flight Custom III | 160 | 7 | 06-05100-3 | . |
| 5.00-5 | 6 | Flight Special II | 120 | 5 | 06-07100 | . |
| 5.00-5 | 10 | Flight Special II | 120 | 6 | 06-00208 | . |
| 15X6.00-6 | 6 | Flight Custom III | 160 | 9 | 06-05500-3 | . |
| 15x6.00-6 | 6 | Flight Special II | 160 | 8 | 06-07340 | . |
| 6.00-6 | 4 | Flight Custom III | 160 | 11 | 06-05200-3 | . |
| 6.00-6 | 4 | Flight Special II | 120 | 9 | 06-07200 | . |
| 6.00-6 | 6 | Flight Custom III | 160 | 11 | 06-05400-3 | . |
| 6.00-6 | 6 | Flight Special II | 120 | 9 | 06-07300 | . |
| 6.00-6 | 8 | Flight Custom III | 160 | 11 | 06-05410-3 | . |
| 6.00-6 | 8 | Flight Special II | 120 | 9 | 06-07310 | . |
| 6.50-8 | 6 | Flight Custom III | 160 | 14 | 06-05600-3 | . |
| 6.50-8 | 8 | Flight Custom III | 160 | 14 | 06-05800-3 | . |
| 6.50-8 | 8 | Flight Special II | 120 | 12 | 06-07320 | . |
| 6.50-10 | 8 | Flight Custom III | 160 | 16 | 06-06100-3 | . |
| 6.50-10 | 8 | Flight Special II | 120 | 14 | 06-00209 | . |
| 6.50-10 | 10 | Flight Custom III | 160 | 17 | 06-06110-3 | . |
| 7.00-6 | 6 | Flight Custom III | 160 | 13 | 06-06200-3 | . |
| 7.00-6 | 6 | Flight Special II | 120 | 10 | 06-07330 | . |
| 7.00-6 | 8 | Flight Custom III | 160 | 13 | 06-06210-3 | . |
| 8.00-4 | 4 | RIB | 120 | 9 | 06-06600 | . |
| 8.00-6 | 6 | Flight Special II | 120 | 13 | 06-01145 | . |
| 8.00-6 | 8 | Flight Special II | 120 | 12 | 06-00212 | . |
| 8.50-6 | 6 | RIB | 120 | 12 | 06-06820 | . |
| 8.50-10 | 8 | Flight Custom III | 160 | 24 | 06-06900-3 | . |
| 6.00-6.5 / 420X150 | 4 | RIB | 120 | 6 | 06-01088 | . |
| 18X5.5 | 8 | Flight Special II | 120 | 11 | 06-00203 | . |
| 22X8.00-8 | 6 | Flight Special II | 120 | 14 | 06-00205 | . |



GOODYEAR TIRES – TUBELESS

| Tire Size | PR | Description | Speed (MPH) | Avg. Weight (lbs.) | Part No. | Price Each |
|---------------------|----|-------------------|-------------|--------------------|------------|------------|
| 5.00-4 | 14 | RIB | 120 | 7 | 06-01057 | . |
| 6.00-6 | 8 | Flight Custom III | 160 | 12 | 06-01058 | . |
| 17.5X6.25-6 | 10 | Flight Special II | 160 | 11 | 06-00202 | . |
| 6.50-8 | 8 | Flight Custom III | 160 | 15 | 06-01060 | . |
| 6.50-10 | 6 | Flight Custom III | 160 | 17 | 06-05900-3 | . |
| 6.50-10 | 12 | Flight Special II | 160 | 21 | 06-00210 | . |
| 7.00-6 | 10 | Flight Custom II | 120 | 12 | 06-01061 | . |
| 7.00-8 | 10 | RIB, All Weather | 120 | 15 | 06-01062 | . |
| 7.50-14 | 12 | RIB | 160 | 36 | 06-01063 | . |
| 8.50-10 | 8 | Flight Custom III | 160 | 27 | 06-01064 | . |
| 8.50-10 | 10 | Flight Custom III | 160 | 28 | 06-01065 | . |
| 8.90-12.50 | 6 | RIB | 160 | 29 | 06-01066 | . |
| 8.90-12.50 | 6 | RIB, All Weather | 160 | 24 | 06-01067 | . |
| 9.00-6 | 10 | RIB | 120 | 22 | 06-01068 | . |
| 9.25-12 / 28X9.0-12 | 12 | RIB | 160 | 38 | 06-01069 | . |
| 11.00-12 | 10 | RIB | 160 | 45 | 06-01070 | . |
| 13X5.0-5 | 8 | Smooth | 120 | 7 | 06-01071 | . |
| 14.5X5.5-6 | 14 | RIB | 120 | 10 | 06-01072 | . |
| 15X6.0-6 | 10 | Flight Custom II | 160 | 9 | 06-01073 | . |
| 22X6.75-10 | 8 | Flight Custom III | 160 | 20 | 06-01074 | . |
| 26X10.5-6 | 6 | Smooth | 120 | 23 | 06-01075 | . |
| 29X11.00-10 | 10 | RIB | 120 | 36 | 06-00206 | . |
| 15.00-12 | 14 | RIB | 160 | 59 | 06-01076 | . |
| 15.00-16 | 16 | RIB | 120 | 95 | 06-01077 | . |

GOODYEAR TUBES

| Tube Size | Description | Avg. Weight (lbs.) | Part No. | Price Each |
|--------------------------|--------------------------|--------------------|------------|------------|
| 5.00-4 Flight Mate | Butyl Tube AC 21, B | 1 | 06-01049 | . |
| 5.00-4 Flight Mate | Butyl Tube TR 67, B | 1 | 06-04800 | . |
| 5.00-5 Flight Mate | Butyl Tube TR 67A (1), B | 1 | 06-05000 | . |
| 6.50-10 Flight Mate | Butyl Tube TR 25, S | 2 | 06-06000 | . |
| 7.00/8.00-6 Flight Mate | Butyl Tube TR 20, (3), S | 2 | 06-06300 | . |
| 7.50/8.50-10 Flight Mate | Butyl Tube TR 25, S | 3 | 06-07000 | . |
| 8.50-6 Flight Mate | Butyl Tube TR 20, S | 3 | 06-01050 | . |
| 8.90-12.50 Flight Mate | Butyl Tube TR 15, S | 6 | 06-01051 | . |
| 11.00-12 | Reg. Tube TR 13, S | 7 | 06-01052 | . |
| 12.50-16 | Reg. Tube TR 101C, B | 10 | 06-01053 | . |
| G15/6.00-6 Flight Mate | Butyl Tube TR 67A, B | 1 | 06-05305 | . |
| G15/6.00-6 Flight Mate | Butyl Tube TR 20, (2), S | 1 | 06-05300-1 | . |
| 17.00-16 | Reg. Tube TR 91G, B (5) | 14 | 06-01054 | . |
| 18X5.5 | Reg. Tube TR 67A, B (5) | 2 | 06-01055 | . |
| G19.5X6.75-8 Flight Mate | Butyl Tube TR 15, (4), S | 2 | 06-05700 | . |

SPECIALTY TIRES & TUBES

MCCREARY TIRES & TUBES

Mfg. by Specialty Tires of America



These fine nylon cord tires with rib tread design are rigidly tested to meet FAA Standard TSO-C62. Air Trac tires are original equipment on many of today's aircraft and offer great

performance in an economical tire. Air Hawk are premium grade tires, cost more but provide longer service life. Performance, construction, and safety you can count on from McCreary tires and tubes. Compare prices and get the best savings and faster service from Aircraft Spruce.

MCCREARY "AIR TRAC" TIRES

| Tube-Type Tire Size | Ply Rating | Wt./Lbs. | Tire Pressure PSI (a) | Max. Load Rating Lbs.(a) | Tire | | Tube | |
|------------------------|---------------|----------|--------------------------|-----------------------------|----------|-------|----------|-------|
| | | | | | Part No. | Price | Part No. | Price |
| 5.00-5 | 4 | 4.4 | 31 | 800 | 06-08210 | . | 06-08300 | . |
| 5.00-5 | 6 | 4.3 | 50 | 1285 | 06-08200 | . | 06-08300 | . |
| 6.00-6 | 4 | 6.8 | 29 | 1150 | 06-08400 | . | 06-08700 | . |
| 6.00-6 | 6 | 7.0 | 42 | 1750 | 06-08500 | . | 06-08700 | . |
| 6.00-6 | 8 | 7.3 | 55 | 2350 | 06-08600 | . | 06-08700 | . |
| 15x6.00-6 | 4 | 6.3 | 45 | 1250 | 06-08800 | . | 06-08901 | . |
| 15x6.00-6 | 6 | 6.6 | 68 | 1950 | 06-08900 | . | 06-08901 | . |
| 6.50-8 | 6 | 9.5 | 51 | 2300 | 06-09000 | . | 06-09200 | . |
| 6.50-8 | 8 | 10.0 | 75 | 3150 | 06-09100 | . | 06-09200 | . |
| 6.50-10 | 6 | 10.7 | 60 | 2770 | 06-09300 | . | 06-09500 | . |
| 6.50-10 | 8 | 12.0 | 80 | 3750 | 06-09400 | . | 06-09500 | . |
| 6.50-10 | 10 | 15.2 | 100 | 4750 | 06-09410 | . | 06-09500 | . |
| 7.00-6 | 6 | 9.0 | 38 | 1900 | 06-09600 | . | 06-09800 | . |
| 7.00-6 | 8 | 9.4 | 54 | 2550 | 06-09700 | . | 06-09800 | . |
| 7.50-10 | 6 | 14.3 | 46 | 3000 | 06-09710 | . | 06-09810 | . |
| 8.00-6 | 4 | 10.0 | 23 | 1350 | 06-09900 | . | 06-09800 | . |
| 8.00-6 | 6 | 10.3 | 35 | 2050 | 06-10000 | . | 06-09800 | . |
| 8.50-6 | 6 | 16.5 | 30 | 2275 | 06-10100 | . | 06-10200 | . |
| 8.50-10 | 6 | 16.5 | 41 | 3250 | 06-10300 | . | 06-10500 | . |
| 8.50-10 | 8 | 19.5 | 55 | 4400 | 06-10400 | . | 06-10500 | . |

The 7.00/8.00-6 tube can be utilized in both 7.00-6 and 8.00-6 tires.

MCCREARY "AIR HAWK" TIRES

| Tube-Type | Tire Size | Ply Rating | Wt./Lbs. | Part No. | Price |
|-----------------|-----------|------------|----------|----------|-------|
| 5.00-5 | | 4 | 3.8 | 06-07710 | . |
| 5.00-5 | | 6 | 4.3 | 06-07700 | . |
| 5.00-5 | | 10 | 6.2 | 06-07720 | . |
| 6.00-6 | | 4 | 6.8 | 06-07800 | . |
| 6.00-6 | | 6 | 7.0 | 06-07900 | . |
| 6.00-6 | | 8 | 7.8 | 06-07910 | . |
| 6.50-8 | | 6 | 10.5 | 06-07912 | . |
| 6.50-8 | | 8 | 10.5 | 06-07914 | . |
| 6.50-10 | | 6 | 11.5 | 06-07916 | . |
| 6.50-10 | | 8 | 11.8 | 06-07918 | . |
| 6.50-10 Special | | 8 | 14.5 | 06-00416 | . |
| 6.50-10 | | 10 | 16.2 | 06-07920 | . |
| 7.00-6 | | 6 | 9.5 | 06-07922 | . |
| 7.00-6 | | 8 | 9.4 | 06-07924 | . |
| 8.00-6 | | 4 | 10.4 | 06-07926 | . |
| 8.00-6 | | 6 | 10.7 | 06-07928 | . |
| 800x6 | | 8 | 11.8 | 06-07929 | . |
| 8.50-10 | | 6 | 19.9 | 06-07932 | . |
| 8.50-10 | | 8 | 23.3 | 06-07934 | . |
| 17.5/625-6 | | 10 | -- | 06-00309 | . |
| 18-5.5 | | 8 | -- | 06-00310 | . |
| 22/800-8 | | 6 | -- | 06-00311 | . |
| 29/1100-10 | | 10 | -- | 06-00312 | . |

MCCREARY "SUPER HAWK" TIRES

These are premium light aircraft tires which provide a stiffer, heavier sidewall and more cut resistant tread. Nylon belted for flexibility and even wear with wide center rib for best runway contact.

| Part No. | Tire Size | Ply Rating | Price/Ea. |
|----------|-----------|------------|-----------|
| 06-17000 | 5.00-5 | 6 | . |
| 06-18000 | 6.00-6 | 6 | . |
| 06-17500 | 6.50-10 | 8 | . |
| 06-17505 | 6.00-6 | 8 | . |
| 06-17510 | 6.50-10 | 10 | . |
| 06-17515 | 7.00-6 | 6 | . |
| 06-17520 | 7.00-6 | 8 | . |
| 06-17525 | 6.50-8 | 6 | . |
| 06-17530 | 6.50-8 | 8 | . |

Call for pricing on other sizes of Hawk Tires.

MCCREARY "AERO TRAINER" TIRES

| Tube Type | Tire Size | Ply | Part No. | Price Each |
|-----------|-----------|-----|----------|------------|
| 5.00-5 | | 6 | 06-01700 | . |
| 6.00-6 | | 6 | 06-01800 | . |

Aero Trainer Tires use standard McCreary tubes listed above

MCCREARY AERO CLASSIC TIRES

| | Size | Ply | Part No. | Price |
|-----------------------|---------------------------|-------------------|----------|----------|
| | Nylon Tubless Tires | 27" Diamond Tread | 10 | 06-00080 |
| 27" Rib | | 10 | 06-00081 | . |
| 8.90 x 12.50 Diamond | | 6 | 06-00082 | . |
| 8.90 x 12.50 Rib | | 6 | 06-00083 | . |
| 11.00-12 Rib | | 10 | 06-00087 | . |
| Nylon Tube Type Tires | Size | Ply | Part No. | Price |
| | 17.00-16 Rib | 12 | 06-00084 | . |
| | 5.00-150 Rib | 6 | 06-00085 | . |
| | 4.00-150 Rib | 6 | 06-00086 | . |
| | 8.00 x 260 Rib | 4 | 06-00088 | . |
| | 380/150-5 | 6 | 06-00313 | . |
| Aero Classic Tubes | 380 x 150-5 (15 x 6.00-5) | 6 | 06-00089 | . |
| | 420 x 150 (6.00 x 6.5) | 4 | 06-00090 | . |
| | Tube Size | Valve | Part No. | Price |
| 800-4 | TR-12 | 06-00821 | . | |



MCCREARY TIRE & TUBE PACKAGES

600 X 6, 4 PLY KIT - Consists of three McCreary 600 x 6 4 ply tires and tubes. Fits PA-24-180 Comanche, PA-28 Cherokee, Beech Musketeer, Musketeer Sport, and Sundowner.

W/Air Trac tires P/N 06-21200
W/Air Hawk tires P/N 06-21205

600 X 6, 6 PLY KIT - Consists of three McCreary 600 x 6 6 ply Air Trac tires and tubes. Fits Piper PA-44 Seminole, PA-30 Twin Comanche, and Cessna 337.

W/Air Trac tires P/N 06-21300
W/Air Hawk tires P/N 06-21305

TWIN CESSNA KIT - Consists of two McCreary 6.00 x 10 6 ply tires and tubes and one 600 x 6 6 ply tire and tube. Fits Cessna 310.

P/N 06-21400

6.00 X 6, 6 PLY / 5.00 X 5, 6 PLY KIT - Two McCreary 6.00 x 6, 6 ply tires and tubes and one 5.00 x 5, 6 ply tire and tube. Fits Cessna 182, 182N; all 206 Skylane, Skywagon, and Station Air 207; Mooney 201, 220; Waco 250 260, PA-32 6-300 Lance.

W/Air Trac tires P/N 06-21100
W/Air Hawk tires P/N 06-21105

6.00 X 6, 4 PLY KIT - Two McCreary 6.00 x 6, 4 ply tires and tubes. Fits Bellanca Citabria 7ECA, 7GCA-A, 7GCBC and 7KCA-B.

W/Air Trac tires P/N 06-21110
W/Air Hawk tires P/N 06-21115

6.00 X 6, 4 PLY / 5.00 X 5, 4 PLY KIT - Two McCreary 6.00 x 6, 4 ply tires and tubes and one 5.00 x 5, 4 ply tire and tube. Fits Beech Super/Musketeer Sierra; Cessna 150, 172, 175, 177; Grumman AA1B, AA5; PA-28, 151, 180R, 200R.

W/Air Trac tires P/N 06-21120
W/Air Hawk tires P/N 06-21125

6.00 X 6, 6 PLY / 5.00 X 5, 4 PLY KIT - Two McCreary 6.00 x 6, 6 ply tires and tubes and one 5.00 x 5, 4 ply tire and tube. Fits Beech Debonair 33, 33A; Bonanza 33; Mooney 200, Mark 21C; Rockwell Commander.

W/Air Trac tires P/N 06-21130
W/Air Hawk tires P/N 06-21135

6.00 X 6, 6 PLY / 6.00 X 6, 4 PLY KIT - Two McCreary 6.00 x 6, 6 ply tires and tubes and one 6.00 x 6, 4 ply tire and tube. Fits Bellanca 206, Viking; PA-24-250, 260, PA-32-260, 300.

W/Air Trac tires P/N 06-21140
W/Air Hawk tires P/N 06-21145

6.50 X 10, 6 PLY / 6.00 X 6, 6 PLY KIT - Two Air Trac 6.50 x 10, 6 ply tires and tubes and one 6.00 x 6, 6 ply tire and tube. Fits Cessna 310 & 320.

W/Air Trac tires P/N 06-21150

6.50 X 10, 8 PLY / 6.00 X 6, 6 PLY KIT - Two McCreary 6.50 x 10, 8 ply tires & tubes & one 6.00 x 6, 6 ply tire and tube. Fits Cessna 340, 401, 402, 411, 414, 421; PA-31-300, 310, 350, PA-31P-425.

W/Air Trac tires P/N 06-21155
W/Air Hawk tires P/N 06-21160

7.00 X 6, 6 PLY / 6.00 X 6, 4 PLY KIT - Two McCreary 7.00 x 6, 6 ply tires and tubes and one 6.00 x 6, 4 ply tire and tube. Fits PA-23, 160, 235, 250.

W/Air Trac tires P/N 06-21165
W/Air Hawk tires P/N 06-21170

8.50 X 6, 6 PLY KIT - Two Air Trac 8.50 x 6, 6 ply tires and tubes. Fits Bellanca Decathlon 8KCA-B and Scout 8GCBC.

W/Air Trac tires P/N 06-21175

LG

TIRES - TUBES - WHEELS



MICHELIN® AVIATOR® TIRES

The Michelin Aviator tire has many of the same features found on the top-of-the-line Michelin AIR. Like the Michelin AIR, the Aviator offers exceptional balance, a new sidewall configuration and an extra strong nylon casing. Also features tough MX1000 tread compound for long life, and a specialized sidewall compound to protect against ultraviolet light. And since it is available at a very attractive price, you'd be hard pressed to find a better tire for the money. Visit our website to download the Michelin Care & Service Manual in PDF format.

MICHELIN AIRSTOP TUBES

| Tube Size | Part No. | Price | Tube Size | Part No. | Price |
|-----------|----------|-------|-----------|----------|-------|
| 500x5 | 06-00019 | . | 700x6 | 06-00848 | . |
| 600x6 | 06-00021 | . | 800x6 | 06-00847 | . |
| 650x10 | 06-00849 | . | 850x10 | 06-00850 | . |
| 15x6.00-6 | 06-00853 | . | 650x8 | 06-00851 | . |

MICHELIN AVIATOR TIRES

| Tire Size | Ply Rating | Part No. | Price ea | Tire Size | Ply Rating | Part No. | Price ea |
|-----------|------------|----------|----------|-----------|------------|----------|----------|
| 500x5 | 6 ply | 06-00016 | . | 650x8 | 8 ply | 06-00315 | . |
| 600x6 | 4 ply | 06-00017 | . | 700x6 | 6 ply | 06-00316 | . |
| 600x6 | 6 ply | 06-00018 | . | 15/600x6 | 6 ply | 06-00308 | . |
| 600x6 | 8 ply | 06-00314 | . | | | | |

MICHELIN AIR TIRES

| Tire Size | Ply Rating | Part No. | Price ea | Tire Size | Ply Rating | Part No. | Price ea |
|-----------|------------|----------|----------|-----------|------------|----------|----------|
| 500x5 | 6 ply | 06-08052 | . | 650x10 | 8 ply | 06-08065 | . |
| 600x6 | 8 ply | 06-08058 | . | 650x8 | 8 ply | 06-08070 | . |
| 700x6 | 6 ply | 06-08059 | . | 700x6 | 8 ply | 08-08075 | . |
| 850x8 | 8 ply | 06-08060 | . | 600x6 | 6 ply | 08-08080 | . |

CONDOR TIRES



Available in a variety of sizes for light to medium general aviation aircraft that have a max. ground speed of 120mph on the runway. All tires are tube type for use with Michelin, Goodyear or McCreary tubes.

| P/N | Size | Ply | Load | Price |
|----------|----------|-----|------|-------|
| 06-08005 | 500x5 | 4 | 800 | . |
| 06-08010 | 500x5 | 6 | 1285 | . |
| 06-08015 | 600x6 | 4 | 1150 | . |
| 06-08020 | 600x6 | 6 | 1750 | . |
| 06-08025 | 600x6 | 8 | 2350 | . |
| 06-08030 | 700x6 | 6 | 1900 | . |
| 06-08035 | 700x6 | 8 | 2550 | . |
| 06-08040 | 15x600x6 | 6 | 1950 | . |
| 06-08045 | 800x6 | 6 | 2050 | . |
| 06-08050 | 800x6 | 8 | 2800 | . |
| 06-00195 | 500x5 | 10 | -- | . |
| 06-00196 | 650x10 | 6 | -- | . |
| 06-00197 | 650x10 | 8 | -- | . |
| 06-00198 | 650x10 | 10 | -- | . |
| 06-00199 | 650x8 | 8 | -- | . |
| 06-00201 | 850x10 | 8 | -- | . |

AERO CLASSIC TIRES

Aero Classic is Desser's proprietary line of over 50 aircraft tires and tubes made to meet or exceed the original specifications.



| Size | Ply | Load (lbs.) | Design | Part No. | Price |
|-----------|-----|-------------|-------------|----------|-------|
| 10/350-4 | 4 | 460 | Rib | 06-01238 | . |
| 10/350-4 | 6 | 555 | Rib | 06-01239 | . |
| 11/400-5 | 8 | 500 | Rib | 06-01240 | . |
| 12.5-4.5 | 10 | 1,800 | Channel | 05-01241 | . |
| 15/600-5 | 6 | 1,600 | Rib | 06-01242 | . |
| 200-50 | 6 | 350 | Rib | 06-01243 | . |
| 280/250-4 | 4 | 460 | Rib | 06-01244 | . |
| 280/250-4 | 6 | 475 | Rib | 06-01245 | . |
| 380-150-5 | 6 | 1,600 | Rib | 06-01249 | . |
| 400-6 | 6 | 660 | Rib | 06-00944 | . |
| 420-150 | 4 | 1,750 | Rib | 06-01250 | . |
| 500-5 | 4 | 800 | All Weather | 06-01251 | . |
| 500-5 | 6 | 1,285 | All Weather | 06-01252 | . |
| 500-5 | 10 | 2,150 | All Weather | 06-01253 | . |
| 6 X 2 | * | * | Solid Tire | 06-01045 | . |
| 600-6 | 4 | 1,150 | All Weather | 06-01254 | . |
| 600-6 | 6 | 1,750 | All Weather | 06-01255 | . |
| 600-6 | 8 | 2,350 | All Weather | 06-01256 | . |
| 600-6.5 | 4 | 1,750 | Rib | 06-01257 | . |
| 700-7.5 | 6 | 2,250 | All Weather | 06-01258 | . |
| 700-8 | 6 | 2,400 | All Weather | 06-01259 | . |

SHIN TIRES & TUBES



These industrial tires & tube assemblies from Goodyear and Shin are used on a unique variety of homebuilt & ultralight aircraft airplanes. Sold as set of tire & tube only.

| Dimensions | Ply | Part No. | Price |
|-----------------|-------|----------|-------|
| 4.10 x 3.50 x 4 | 4 PLY | 06-10830 | . |
| 3.40 x 3.00 x 5 | 4 PLY | 06-10840 | . |
| 4.10 x 3.50 x 5 | 2 PLY | 06-10850 | . |
| 11 x 4.00 x 5 | 2 PLY | 06-10860 | . |
| 15 x 6.00 x 6 | 2 PLY | 06-10870 | . |
| 4.80 x 4.00 x 8 | 4 PLY | 06-10880 | . |
| 4.10 x 3.50 x 4 | 4 PLY | 06-00709 | . |
| 3.40 x 3.00 x 5 | 4 PLY | 06-00711 | . |
| 3.40 x 3.00 x 5 | -- | 06-00712 | . |
| 4.10 x 3.50 x 5 | 2 PLY | 06-00713 | . |
| 4.10 x 3.50 x 5 | -- | 06-00714 | . |
| 11 x 4.00 x 5 | 2 PLY | 06-00715 | . |
| 11 x 4.00 x 5 | -- | 06-00716 | . |
| 600 x 6 | 2 PLY | 06-00717 | . |
| 15 x 6.00 x 6 | -- | 06-00718 | . |
| 4.80 x 4.00 x 8 | 4 PLY | 06-00719 | . |
| 4.80 x 4.00 x 8 | -- | 06-00720 | . |

11.400 X 5 TIRES & TUBES



This tire fills the size gap between the 5.00-5 aircraft tire and the 3.40-5 industrial tire. Looks like a scaled-down 5.00-5. Fits VariEze, KR's and most experimentals using 5" wheels. Formerly known as Lamb tires, these are manufactured by Cheng-Shin.

| | |
|-----------------------------|--------------------|
| 11.400-5 (6 Ply) Tire | P/N 06-07400 |
| 11.400-5 (8 Ply) Tire | P/N 06-07500 |
| 11.400-5 Tube | P/N 06-07600 |
| 3.40/3.00 x 5 Tube | P/N 06-00712 |

TIRES & TUBES FOR ULTRALIGHTS



TIRES

| Part No. | Nom. Size | W | Dia. | Price |
|----------|-----------|------|-------|-------|
| TI006 | 300 x 4 | 3.2" | 10.0" | . |
| TI005 | 400 x 5 | 3.9" | 10.5" | . |
| TI001 | 400 x 6 | 4.1" | 13.0" | . |
| TI004 | 500 x 6 | 4.8" | 12.6" | . |
| TI002 | 600 x 6 | 5.9" | 14.8" | . |
| TI003 | 800 x 6 | 6.0" | 16.3 | . |

TUBES

| Part No. | Size | Price |
|----------|---------|-------|
| TI013 | 300x4 | . |
| TI012 | 3.50x5 | . |
| TI011 | 600x6 | . |
| TI014 | 400x5 | . |
| TI007 | 800x6 | . |
| TI015 | 500 x 6 | . |

BERINGER 6" LIGHT WHEELS



- Dimension: 6.00-6 and 4.00-6
- Static load: 881 Lbs Limit load: 3526 Lbs
- For tubeless mounting
- In three parts with rigid valve
- Alloy: 2017 (AU4G) machined from billet on CNC
- Stainless steel disc
- Following TRA 2002
- Complete wheel 6.00-6: 4.63 Lbs and 4.00-6: 4.25 Lbs
- Nose wheel weight 6.00-6: 3.10 Lbs and 4.00-6: 2.73 Lbs
- With ISO standards bearings for optimized durability and allowed to design a light axis: 025mm (1") for outer rim and 030mm (1.18") for inner rim (sealed ball bearings)
- Color: Red Anodized

| Description | Part No. | Price |
|---|----------|-------|
| Wheel 6.00-6" Light With Brake Disc | 06-00952 | . |
| Nose Wheel 6.00-6" Light | 06-00953 | . |
| Wheel 4.00-6" Light With Brake And Disc | 06-00954 | . |
| Nose Wheel 4.00-6" Light | 06-00955 | . |

AERO CLASSIC TUBES

Tested to MIL-I-5014F Supplier to USA Military & Foreign Armed Forces.

| Size | Valve | Angle Deg. | Part No. | Price |
|------------|--------|------------|----------|-------|
| 10/350-4 | TR-87 | 90 | 06-01217 | . |
| 11/400-5 | TR-87 | 90 | 06-00357 | . |
| 1100-12 | TR-13 | 0 | 06-01218 | . |
| 12.5-4.5 | TR-67A | 90 | 06-00762 | . |
| 15/600-6 | TR-20 | 0 | 06-00770 | . |
| 15/600-6 | TR-67A | 90 | 06-01220 | . |
| 18-5.5 | TR-15 | 0 | 06-01221 | . |
| 19.5/675-8 | TR-15 | 0 | 06-01222 | . |
| 22/800-8 | TR-15 | 0 | 06-01223 | . |
| 280/250-4 | TR-87 | 90 | 06-00460 | . |
| 29/1100-10 | TR-150 | 0 | 06-01224 | . |
| 420-150 | TR-67A | 90 | 06-01226 | . |
| 500-4 | TR-67A | 90 | 06-01227 | . |

| Size | Valve | Angle Deg. | Part No. | Price |
|-----------|--------|------------|----------|-------|
| 500-5 | TR-67A | 90 | 06-00755 | . |
| 600-6 | TR-20 | 0 | 06-00754 | . |
| 600-6 | TR-67A | 90 | 06-01229 | . |
| 600-6.5 | TR-67A | 90 | 06-01230 | . |
| 650/700-8 | TR-15 | 0 | 06-00766 | . |
| 650-10 | TR-25 | 0 | 06-01232 | . |
| 700/800-6 | TR-20 | 0 | 06-00764 | . |
| 750-10 | TR-25 | 0 | 06-00768 | . |
| 800-4 | TR-12 | 0 | 06-01234 | . |
| 850-6 | TR-20 | 0 | 06-01235 | . |
| 850-10 | TR-25 | 0 | 06-00769 | . |
| 890-12.50 | TR-15 | 0 | 06-01237 | . |

NOSE WHEELS

MATCO NOSE WHEELS

| Matco Part No. | Our Part No. | Dia. (in.) | Bearing Axle dia. | Bearing Type Sealed | Width | Static Capacity (lbs.) | Load Limit (lbs.) | Weight (lbs.) | Price |
|------------------------------------|--------------|------------|-------------------|---------------------|-------|------------------------|-------------------|---------------|-------|
| MATERIAL: SPUN ALUMINUM | | | | | | | | | |
| MH6N | 06-00537 | 6 | 0.625 | Ball | 5.325 | 660 | 2000 | 2.6 | . |
| MH6N-S | 06-00539 | 6 | 0.625 | Ball | 5.325 | 660 | 2000 | 2.6 | . |
| MH6N.75 | 06-00538 | 6 | 0.75 | Ball | 5.325 | 660 | 2000 | 2.6 | . |
| MH6N-S.75 | 06-00540 | 6 | 0.75 | Ball | 5.325 | 60 | 2000 | 2.6 | . |
| MATERIAL: CNC CAST ALUMINUM | | | | | | | | | |
| NW40B | 06-00541 | 4 | 6.25 | Ball | 3 | 660 | 2000 | 2.25 | . |
| NW40B.75 | 06-00542 | 4 | 0.75 | Ball | 3 | 660 | 2000 | 2.25 | . |
| NW40R | 06-00543 | 4 | 0.75 | Taper/Roll | 3 | 1185 | 3560 | 2.25 | . |
| NW50 | 06-00544 | 5 | 0.75 | Taper/Roll | 3.88 | 1185 | 3560 | 3.24 | . |
| NW51 | 06-00545 | 5 | 0.75 | Taper/Roll | 3.88 | 1185 | 3560 | 3.24 | . |
| NW501.25 | 06-00546 | 5 | 1.25 | Taper/Roll | 3.88 | 1420 | 4260 | 3.24 | . |
| NW511.25 | 06-00547 | 5 | 1.25 | Taper/Roll | 3.88 | 1420 | 4260 | 3.6 | . |
| NW60 | 06-00548 | 6 | 1.25 | Taper/Roll | 3.5 | 1420 | 4260 | 3.24 | . |
| NW600 | 06-00549 | 6 | 1.25 | Taper/Roll | 4.5 | 1420 | 4260 | 3.24 | . |
| MATERIAL: DIE CAST ALUMINUM | | | | | | | | | |
| NW40EE | 06-00550 | 4 | 0.625 | Ball | 3.25 | 660 | 2000 | 1.8 | . |
| NW50CC | 06-00551 | 5 | 0.625 | Ball | 4.38 | 660 | 2000 | 2.7 | . |
| NW50CC.75 | 06-00552 | 5 | 0.75 | Ball | 4.38 | 660 | 2000 | 2.7 | . |
| NW51CC | 06-00553 | 5 | 0.625 | Ball | 4.38 | 660 | 2000 | 2.7 | . |
| NW51CC.75 | 06-00554 | 5 | 0.75 | Ball | 4.38 | 660 | 2000 | 2.7 | . |
| NW50CC.75R | 06-00555 | 5 | 0.75 | Taper/Roll | 4.38 | 1185 | 3560 | 2.8 | . |
| NW51CC.75R | 06-00556 | 5 | 0.75 | Taper/Roll | 4.38 | 1185 | 3560 | 2.8 | . |
| NW60CC | 06-00557 | 6 | 0.625 | Ball | 4.38 | 660 | 2000 | 3.22 | . |
| NW60CC.75 | 06-00558 | 6 | 0.75 | Ball | 4.38 | 660 | 2000 | 3.22 | . |
| NW60CC.75R | 06-00559 | 6 | 0.75 | Taper/Roll | 4.38 | 1185 | 3560 | 3.52 | . |
| NW600CC | 06-00560 | 6 | 0.625 | Ball | 5.38 | 660 | 2000 | 3.47 | . |
| NW600CC.75 | 06-00561 | 6 | 0.75 | Ball | 5.38 | 660 | 2000 | 3.47 | . |
| NW600CC.75R | 06-00562 | 6 | 0.75 | Taper/Roll | 5.38 | 1185 | 3560 | 3.52 | . |
| NW800C-Z | 06-00563 | 8 | 0.625 | Ball | 3 | 660 | 2000 | 5.02 | . |

LG

BERINGER 5 INCH NOSE WHEEL KIT



Save 2 to 3 Lbs on your experimental aircraft with light-weight BERINGER nose wheels. Nose Wheels are aluminum red anodized, machined from billet on CNC, with O-rings for Tubeless mounting. Static capacity: 1440 Lbs (with appropriate tire). Aluminum axle for 5/16 bolt diameter.

The kit includes: 1 nose wheel with tire (mounted on rim, pressure tested) and 1 aluminum axle **Will be available**

in fourth quarter of 2008

| A/C Model | Description | PN | Price |
|-----------------------------------|--|----------|-------|
| - | Nose wheel kit as described above, with Michelin Aviator Tire 5.00-5" 10ply Tubeless Weight: 8.9 Lbs | 06-01097 | . |
| Lancair 320, 360 (retractable LG) | Nose wheel kit as described above, with Lamb Tire 11x4.00-5", 8ply Weight: 5.9 Lbs | 06-01098 | . |
| Lancair legacy (retractable LG) | Nose wheel kit as described above, with Lamb Tire 11x4.00-5", 8ply Weight: 5.9 Lbs | 06-01099 | . |
| Glaser III (retractable LG) | Nose wheel kit as described above, with Lamb Tire 11x4.00-5", 8ply Weight: 5.9 Lbs | 06-01101 | . |
| Zenair CH601 | Nose wheel kit as described above, with Michelin Aviator Tire 5.00-5" 10ply Tubeless Weight: 9 Lbs | 06-01102 | . |

GROVE 4" NOSE WHEEL



Direct replacement for Brock and Gerdes 4" nose wheel. Use with 2.80-4 8" diameter tire on VE, LE, Cozy, etc. or with 4.10-4 10" diameter tire on Cozy Mark IV

- Genuine Timkin
- Felt Seals
- CNC precision Machined to exact tolerances
- Weight 1.87 lbs.
- Corrosion resistant finish
- Static Load Rating 900 pounds
- Model 49-3A ..P/N 06-00842

TIRE: Uses 2.80/2.50; 4 ply tirePN 06-08000



or Uses 4.10x3.50x4 ply tirePN 06-00709

GROVE 400X4 NOSE WHEEL
The perfect nose wheel for light sport aircraft such as the KR and Soneri. • Static Load Rating 900lbs • Genuine Timkin Bearings • Uses 3/4" Axle • Felt Seals • Weight 1.98 lbs Model 49-1AP/N 06-00843

TIRE: Uses 400 x 8 ply tirePN 06-00844

or Uses 4.10 x 3.50 x 4 ply tire ...PN 06-08102

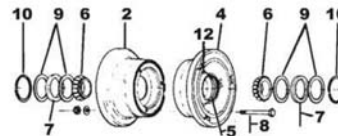
GO-CART WHEELS



Cast aluminum wheels with 4" hub, for homebuilts and sailplanes. Used on Tri-Q conversion as nosewheel. 3-1/4" wide. Complete with 5/8" dia. ball bearings. Wt. 1-1/2 Lbs.

P/N 06-16540 Ea.

CLEVELAND NOSE WHEELS 500X5



| # | OLD PART NO. | PART NUMBER | DESCRIPTION | Qty Per Assy. | | | | PRICE EACH |
|----|--------------|-------------|------------------------|---------------|--------|-------|--------|------------|
| | | | | 40-77 | 40-77A | 40-85 | 40-87A | |
| 2 | 162-28 | 162-02800 | Outer Wheel | 1 | 1 | - | - | . |
| | 162-36 | 162-03600 | Outer Wheel | - | - | - | 1 | . |
| | 08231 | 214-00300 | Cup Bearing | 1 | 1 | 1 | 1 | . |
| 12 | 217-1 | 217-00100 | Grommet | 1 | 1 | 1 | 1 | . |
| 4 | 161-31 | 161-03100 | Inner Wheel Half Assy. | 1 | 1 | - | - | . |
| | 161-38 | 161-03800 | Inner Wheel Half Assy. | - | - | - | 1 | . |
| 5 | 08231 | 214-00300 | Inner Cup Bearing | 1 | 1 | 1 | 1 | . |
| 8 | 103-1050 | AN4-22A | Bolt | 3 | 3 | 3 | 3 | . |
| * | 095-10400 | AN960-416 | Washer | 6 | 6 | 6 | 6 | . |
| | 094-10300 | AN365-428A | Nut | 3 | 3 | 3 | 3 | . |
| 9 | 153-1 | 153-00100 | Ring-Grease Seal | - | - | - | 4 | . |
| | 153-8 | 153-00800 | Ring-Grease Seal | 4 | 4 | - | - | . |
| | 21-104 | 153-00200 | Ring-Grease Seal | - | - | 4 | - | . |
| 10 | 155-2 | 155-00200 | Ring-Snap | 2 | 2 | 2 | 2 | . |
| 7 | 154-1 | 154-00100 | Felt-Grease Seal | - | - | - | 2 | . |
| | 154-6 | 154-00600 | Felt-Grease Seal | 2 | 2 | - | - | . |
| 6 | 08125 | 214-00400 | Cone-Bearing | 2 | 2 | 2 | 2 | . |

500 X 5 NOSE WHEEL with 1-1/4" dia. bearings. Model No. 40-77A, used on some models of Cessna 150, is typical of nose wheels used on general aviation aircraft. FAA-approved.

P/N 40-77A.....

600 X 6 NOSE WHEEL with 1-1/2" dia. bearings. Model No. 40-76A (not illustrated) is used on some models of Cessna 172 and 182.

FAA approved. P/N 40-76A

HEGAR NOSE WHEELS

6" SPUN ALUMINUM NOSE WHEEL - The 6" Spun Aluminum nose wheel with 5/8 bearings. Comes centered when using the MX o-ring standard wheel hub but can also be purchased with the MX offset hub (no o-ring with offset hub. Requires the use of a tube. Comes complete with nuts, bolts, washers, valve stem, o-rings if required and the MX hub. May also be used as main wheels. P/N 06-01274



6" BILLET ALUMINUM NOSE WHEEL - 1-1/4" OR 3/4" Precision ball bearing. matches with the 6.375" Hegar Billet aluminum brake kit. P/N 06-01275

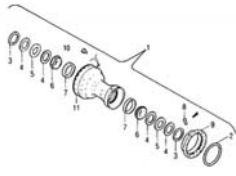


5" BILLET ALUMINUM NOSE WHEEL - 1-1/4" OR 3/4" Precision ball bearing. matches with the 5" Hegar Billet aluminum brake kit. 6B X 5 with 6-3/8" Brake assembly P/N 06-01276

WHEELS & BRAKES

CLEVELAND WHEEL & BRAKE CONVERSION KITS

REPLACE 800 x 4 WHEELS ON PIPER AIRCRAFT



A bolt-on 600 x 6 wheel and brake conversion kit for Piper models: J3, J5C, PA11, PA12, PA14, PA15, PA16, PA17, PA18 & PA20 PA18-150 & PA18A-150 with Form 337. The 199-71-STC kit comes complete with STC paperwork so form 337 is not required. Accommodates tire sizes 600 x 6, 700 x 6, 800 x 6. No landing gear modifications required. Minor modification of hydraulic line required. Uses double puck brakes. Fits 1-1/4" diameter axle size only. Fits Piper J4/J5 but STC does not cover these aircraft.

Magnesium Model for general use

| | |
|---------------------------------------|-------|
| P/N 199-71 | ..... |
| P/N 199-71-STC (w/full STC paperwork) | ..... |
| Aluminum Model for "AG" Service | ..... |
| P/N 199-71A | ..... |

| Part No. | Description | Qty |
|------------|--------------------------|-----|
| 040-09804 | Wheel Assy. | 2 |
| 030-06602 | Brake Assy. | 2 |
| 067-02900 | Spacer | 2 |
| 0 67-03200 | Spacer | 2 |
| 040-07602 | Nose Wheel Assy. | 1 |
| 067-03100 | Spacer | 2 |
| 157-01000 | Dust Shield | 2 |
| 102-00600 | Screws | 6 |
| 095-15100 | Washers | 6 |
| 207-00300 | Hydraulic Line | 2 |
| 50-29 | Installation Drawing NLG | 1 |
| 50-30 | Installation Drawing MLG | 1 |
| | Supplemental type cert. | 1 |

#199-52 NAVION CONVERSION KIT

Complete kit for co version to Cleveland 700 x 8 main gear and 600 x 6 nose wheel on Navion Models - A, B, C, D, E, F, G & H.
P/N 199-52

#199-52A NAVION CONVERSION KIT

Kit for conversion of maingear only.
P/N 199-52A

REQUEST QUOTATION ON UNLISTED MODELS

PIPER AZTEC - BRAKE

| Description | Part No. | Qty. |
|---------------------------|---------------|------|
| Brake Assembly | 30-96 | 2 |
| Brake Disc | 164-57 | 2 |
| Nameplate | 166-74 | 2 |
| Installation Instructions | E.S.B. 7000-4 | 1 |



CESSNA - WHEEL & BRAKE

P/N 199-46
P/N 199-46C (Chrome)
(6.00x6) FOR CESSNA MODELS: 120, 140, (SN 8004 thru 13399), 140A (SN 13400 and up), 170, 170A, 170B, 172, 172A thru 172E, 175, 175A, 175B, 175C, P172D, 180, 180A thru 180E, 182, 182A thru 182G.

| Description | Part Number | Qty. |
|-------------------------------|-------------|------|
| Wheel Assy. | 040-09701 | 2 |
| Brake Assy. | 030-06301 | 2 |
| Bushing | 145-02200 | 8 |
| Bushing | 145-01000 | 4 |
| W & B Assembly Dwg. | 20-134 | 1 |
| Installation Instructions | 50-24 | 1 |
| Installation Instructions | 50-25 | 1 |
| Installation Instructions | 50-26 | 1 |
| Supplemental Type Certificate | | 1 |

GLOBE SWIFT

P/N 199-48
P/N 199-48C (Chrome)
Wheel and Brake Conversion Kit (6 00 X 6) for Globe Swift Models GC-IA, GC-IB.
NOTE: It will be necessary to change master cylinders and obtain the necessary axle hardware for conversion, Ref. dwg. 50-28. These parts can be obtained through Beech aircraft.

| Description | Part Number | Qty. |
|-------------------------------|-------------|------|
| Brake Assembly | 030-07902 | 2 |
| Wheel Assembly | 040-11303 | 2 |
| Spacer | 067-02400 | 2 |
| W & B Assembly Dwg. | 20-130 | 1 |
| Installation Drawing | 50-23 | 1 |
| Supplemental Type Certificate | | 1 |

BEECH - WHEEL & BRAKE

P/N 199-49
P/N 199-49C (Chrome)
(6.00x6) FOR BEECH AIRCRAFT MODELS: 35, A35 thru G35, 35R 35-33, 35-A33, 35-B33, 35-C33, 35-C33A, E33, E33A E33C, F33, F33A, F33C, G33, H35, J35, K35, M35, N35, P35, S35, V35, V35A, V35B, 36, A36.

| Description | Part Number | Qty. |
|-------------------------------|-------------|------|
| Brake Assembly | 030-05400 | 2 |
| Wheel Assembly | 040-08300 | 2 |
| Spacer | 067-02600 | 2 |
| W & B Assembly Dwg. | 20-69 | 1 |
| Installation Drawing | 50-28 | 1 |
| Supplemental Type Certificate | | 1 |

BEECH - WHEEL & BRAKE

P/N 199-50
(7.00x8) FOR BEECH AIRCRAFT MODELS: 35, A35 thru G35, 35R, H35, J35, K35, M35, N35, P35, S35, D55, D55A, E55, E55A 95, B95, B95A, D95A, E95, 95-55, 95-A55, 95-B55A, 95-B55B, 95-C55, 95-C55A.

| Description | Part Number | Qty. |
|-------------------------------|-------------|------|
| Brake Assembly | 030-06600 | 2 |
| Wheel Assembly | 040-09800 | 2 |
| Spacer | 067-02500 | 2 |
| Spacer | 067-02700 | 2 |
| W & B Assembly Dwg. | 20-135 | 1 |
| Installation Drawing | 50-27 | 1 |
| Supplemental Type Certificate | | 1 |

NOTE: It will be necessary to change master cylinders and obtain the necessary axle hardware for conversion, Ref. dwg. 50-27. These parts can be obtained through Beech aircraft.

CESSNA - WHEEL & BRAKE

P/N 199-60
P/N 199-60C (Chrome)
(6.00x6) FOR CESSNA MODELS: 180, 180A, B, C, D, E, F, H, J, 185, 185A, B, A185E, A185F, 206E, 206F, TU206E, TU206F, 210, 210A, B, C, 210K, L, T210K, T210L.

| Description | Part Number | Qty. |
|--|-------------|------|
| Wheel Assembly | 040-07502 | 2 |
| Brake Assembly | 030-05200 | 2 |
| Installation Drawing (210 series) | 50-34 | 1 |
| Installation Drawing (180,185,206 Series) | 50-35 | 1 |
| Supplemental Type Certificate (210 series) | | 1 |
| Supplemental Type Certificate (180,185,206 Series) | 20-64 | 1 |

NOTE: Kit to be used only on aircraft with 6.00 x 6 tires.

CESSNA - WHEEL & BRAKE

P/N 199-62
P/N 199-62C (Chrome)
(8.00x6) FOR CESSNA MODELS: 180, 180A, B, C, D, E, F, H & J, 185, 185A, B, A185E, A185E, A185F, 206E, F, TU206E, TU206F.

| Description | Part Number | Qty. |
|-------------------------------|-------------|------|
| Wheel Assembly | 040-07504 | 2 |
| Brake Assembly | 030-05213 | 2 |
| Installation Drawing | 50-36 | 1 |
| Supplemental Type Certificate | | 1 |

NOTE: Kit to be used only on aircraft with 6.00 x 6 tires.

CESSNA - WHEEL & BRAKE

P/N 199-84
P/N 199-84C (Chrome)
CESSNA APPROVED RETROFIT FOR THE FOLLOWING AIRCRAFT:
150, F150, A150, FA150, 152, A152, F152, FA152, 177, 177RG, F177RG, 182, A182, F182

| Description | Part Number | Qty. |
|----------------------|--------------|------|
| Wheel Assembly | 030-07500(1) | 2 |
| Brake Assembly | 040-11300(2) | 2 |
| Installation Drawing | 50-36 | 1 |

NOTE CESSNA CROSS REFERENCE NUMBERS

(1) C-163030-113(LH) C-163030-114(RH) (2) C-163001-0104

CESSNA - WHEEL & BRAKE

P/N 199-84A
P/N 199-84AC (chrome)
CESSNA APPROVED RETROFIT FOR THE FOLLOWING AIRCRAFT:
F172, R172, FR172

| Description | Part Number | Qty. |
|----------------------|--------------|------|
| Wheel Assembly | 030-07501(1) | 2 |
| Brake Assembly | 040-11300(2) | 2 |
| Installation Drawing | 50-37 | 1 |

NOTE CESSNA CROSS REFERENCE NUMBERS

(1) C-163030-011(LH) C-163030-112(RH) (2) C-163001-0104

WE CARRY ALL CLEVELAND CONVERSION KITS

| | |
|--------------------------------|--------------|
| Cessna P210N | P/N 199-60A |
| Cessna 310, 320 | P/N 199-64 |
| Cessna 421, 340, 401, 402, 414 | P/N 199-76 |
| Ercoupe | P/N 199-69 |
| Beech Duke | P/N 199-73 |
| Beech Musketeer | P/N 199-124 |
| Stinson | P/N 199-87 |
| Raytheon | P/N 199-123 |
| Raytheon | P/N 199-124C |
| Raytheon | P/N 199-90 |

PLEASE REQUEST QUOTE ON ANY UNLISTED KITS.

LG

BRAKES – MASTER BRAKE CYLINDERS



BERINGER BRAKE PADS

Friction material: sintered metal. High coefficient of friction, very long life time, no fading till very high temperatures: 1100° F
Includes: 2 brake pads (for 1 brake caliper), bolts and procedure

OEM Brake pads for Beringer 2 pistons caliper . P/N 06-01103
OEM Brake pads for Beringer 3 pistons caliper . P/N 06-01104
Parking Brake Valve Mineral-Based Fluid P/N 06-01108.....



BERINGER STAINLESS STEEL BRAKE DISCS

Stainless steel, with precision heat treatment and grinding. Floating mount, in order to absorb dilata-tions and deformations when heated.

For 3 piston Brake caliper (thickness: 0.22") P/N 06-01117
For 2 piston Brake caliper (thickness: 0.165") P/N 06-01118
For 2 piston Brake caliper (thickness: 0.126") P/N 06-01119

BERINGER BRAKE LINES FOR RV'S



Brake hose is stainless steel braided with PTFE inner tube and stainless steel fittings. It provides consistent brake pedal pressure without spongy feeling. The flexibility allows landing gear leg movements and avoids leakage that appears with hardline tube. These brake lines connect brake calipers to fuselage connectors. Each brake line is pressure tested and delivered with certificate. Includes: set of 2 brake lines, certificate

Set of 2 Brake lines for RV6, 7, 9 P/N 06-01122
Set of 2 Brake lines for RV6A, 7A, 9A P/N 06-01123

BERINGER WHEEL O-RINGS



Repair kits are available for the following BERINGER® parts: Hand master cylinder, Rudder pedal master cylinder, 2 and 3 piston brake caliper.

Includes all wear parts: pistons, seals, screws, grease, re- pair procedure.

| Description | Part No. | Price |
|---|----------|-------|
| Repair kit for rudder pedal master cylinder HBA01: all piston seals, specific grease, ball bearings, copper seals, instructions | 06-01114 | . |
| Repair kit for 2 piston caliper : piston seals, pis- tons, specific grease, copper washer | 06-01115 | . |
| Repair kit for 3 piston caliper : piston seals, pis- tons, specific grease, copper washer | 06-01116 | . |

CLEVELAND MASTER BRAKE CYLINDERS



MODEL 10-35 - This model has a built-in reservoir and is used in production aircraft. Cast aluminum construction. 5/8" bore, 1.2" stroke, 0.36 cu. in. displacement. Outlet 1/8"

NPT. Pin center length 8". Designed to mount on rudder pedal. Formerly Gerdes Model A-049 P/N 10-35
Model 10-35 O-Ring Kit P/N 199-513



MODEL 10-20 - Spring-loaded piston type assembly

without reservoir. Simple design assures long troublefree service. Pin center length 7-1/2". Bore 9/16". Stroke 1.25". Weight: 10 oz. Used on Pitts Special, Acro-Sport and other homebuilts. P/N 10-20
Model 10-20 & 10-19 O-ring kit P/N 06-10600



MODEL 10-19 - Used on Pitts and other homebuilts. Similar to Model 10-20 except with ports aligned differently P/N 10-19

Model 10-20 & 10-19 O-ring kit P/N 06-10600



MODEL 10-5 -

Same type construction as Model 10-20. Model 10-5 has parking brake feature, Model 10-5B does not. 1/8" NPT ports, on opposite sides of cylinder, have AN823-4D

fittings for use with 1/4" brake line. Pin center length 8". Wt. 9.5 oz. Bore 0.562". Stroke 1.25". Used on Piper PA25 & homebuilts.

Master Cylinder Number 10-5 P/N 10-5
Master Cylinder Number 10-5B P/N 10-5B
Model 10-5B O-Ring kit (199-503) P/N 06-00708
Model 10-5 O-Ring kit (199-502) P/N 06-10700

MATCO MASTER BRAKE CYLINDERS

MC-5 VERTICAL



The MC-5 master cylinder is a verti- cally mounted cylinder with a built in reservoir. The MC-5 is used indi- vidualy or in a dual brake application in which it acts as a remote reservoir for the MC-4 or MC-4A master cylin- der under the copilot pedals

MC-4 EXTERNAL RESERVOIR



which are connected in a series. The MC-5 master cylinder measures 8.00" from end to end and 7.500" from mounting hole to mounting hole. Overall width of the MC-5 at its widest point is a trim 1.78" and the mounting clevis features a .250 mounting slot. This master cylinder can be used in place of the Cleveland Part No. 10-35.

The MC-4 series can be mounted vertically or horizontally and uses a remote reservoir. The MC-4 is used for heel brakes as well as dual appli- cations in which it replaces the shuttle valve in the braking system when placed under the copilot pedals and connected in a series.

The MC-4 master cylinder measures 8.250 inches from end to end and 7.8 from mounting hole to mounting hole. The MC-4A master cylinder is 8.125" from end to end and 7.375" from mounting hole to mounting hole. Overall width of both master cylinders is 1.371 inches and the mounting clevis has a .250 mounting slot. The MC-4 & MC-5 have a 5/8" bore and piston and 1-1/2" of stroke or travel to provide additional fluid. The MC-4A also has a 5/8" bore and piston with a stroke of 1 inch. This master cylinder can be used in place of the Cleveland part number 10-20. Use MIL-H-5606 red hydraulic fluid.

VERTICAL STYLE - Cylinder for vertical mounting, with steel housing and reservoir.

MC-5 P/N 06-11000

MC-5A (0.50" shorter than the MC-5) P/N 06-00375

UNIVERSAL - Vertical or horizontal mounting with exterior reservoir.

MC-4A P/N 06-11100

MC-4 P/N 06-11150

*Replacement O-Rings for Master cylinders

P/N 06-11200 / ea



MC-7 MASTER CYLINDER

The black anodized MC-6 is designed to attach to a 1" diameter control stick and function similar to a motorcycle brake. Designed for ultralight aircraft, it is completely self-adjustable as the lining wears and draws additional fluid from the cylinder. The 6:1 mechanical leverage

allows the average pilot to generate 1,500 psi in the system.

MC-7 P/N 06-00014

HEGAR MASTER CYLINDERS



5" SINGLE LEVER MASTER CYLINDER

- 5" single lever, foot operated. Designed for single braking. Comes in your choice of 1/2", 5/8" and 3/4" bore sizes.

P/N 06-01277

5" DUAL LEVER MASTER CYLINDER - 5" dual lever, foot operated. De- signed for differential braking. Comes in your choice of 1/2", 5/8" and 3/4" bore sizes. P/N 06-01278

7" SINGLE LEVER MASTER CYLINDER - 7" single lever, hand operated. Designed for single braking. Comes in your choice of 1/2", 5/8" and 3/4" bore sizes. P/N 06-01279

7" SINGLE LEVER MASTER CYLINDER - 7" dual lever, hand operated. Designed for differential braking. Comes in your choice of 1/2", 5/8" and 3/4" bore sizes. P/N 06-01280

CESSNA RUDDER PEDAL EXTENSIONS



P/N 06-00838

P/N 06-00839

P/N 06-00641

The Saircorp/Flight Boss Ltd S-RPE Series Rudder Pedal Extensions fit most high wing Cessna aircraft from 1953 to 2008. Refer to Application Chart or AML for proper selection. They're constructed from high quality cast aluminum, have a durable Powder Coat finish and use Stainless Steel fasteners. They are strong, durable and built to last. Installation and removal is quick and easy, the extensions lock in place over your existing rudder pedals giving you that extra needed reach. Your existing rudder pedals do not need to be removed or altered for installation or removal of the extensions. No more struggling or submarining to get that extra needed rudder deflection. Even "robust" and taller pilots can benefit from the S-RPE Series Rudder Pedal Extensions, allowing you to set back and get the yoke out of your chest. Easily installed, used right seat, left seat or both. See our website for a complete Application Chart or AML for proper selection.

EXT S-RPE-C - fits most 1960's to 1980's P/N 06-00838

EXT S-RPE-CN - fits most 1980's to 2000 and up P/N 06-00839

EXT S-RPE-CO - fits most 1950's to 1960's .. P/N 06-00841

LG

BRAKE RESERVOIRS - RUDDER PEDALS

CLEVELAND BRAKE LINE BLEEDER 87-5



A unique tool which simplifies the brake bleeding job. This brake line bleeder can be used to service all brake assemblies utilizing the bleeder screw assembly pictured above. P/N 06-01202 Ea.

ACS BRAKE BLEEDER ASSEMBLY



Universal brake bleeder fitting. Fits all standard brake systems. 1/8" male NPT Seat is brass. Bleeder screw is stainless steel. P/N 11225 Ea.

HYDRAULIC BRAKE BLEEDER TANK



Our Brake Bleeder Tank features a hand operated pressurizing pump for field use. It fills and bleeds in one operation. The high-impact plastic reservoir great for petroleum and water-based hydraulic fluid. NOT for use with Skydrol. You get everything needed including a universal adapter which will fit onto all brake receptacles.

Note: On Cleveland brake assemblies using a 79-3 bleeder screw the additional adapter 06-11414 is required.
225DX Economy Bleeder Tank.....P/N 06-11413-1
Option Adapter for Brake Bleeder.....P/N 06-11414

HOMEBUILDERS BRAKE BLEEDER



This easy to use system allows you to quickly and easily bleed and flush your brakes without the aid of another person. By using a reverse flow system, combined with slow fluid flow, one person can fill an empty brake system in less than 15 minutes without having air in the brakes. Works on most high wing aircraft and does not require compressed air. This system is so easy that once you start

the process you can walk away; come back in 15 minutes later and the job is done. Not FAA approved. P/N 06-00120

ACS MODEL A-315 RESERVOIR



Machined from 6061-T6 billet and anodized for improved corrosion resistance. Available with choice of filler port location for firewall or floor mounting. Capacity 5 oz. Size: 2-1/4" dia. x 2-1/2" long. Wt: 7oz. Specify style.

P/N A-315 (firewall mounting).....
P/N A-315-1 (floor mounting).....

ACS MODEL A-600 RESERVOIR



Machined from 6061T6 billet. Cap is threaded into body and sealed with a Viton o-ring for easy filling and cleaning. Cap and body have 1/8" female threads. 1-3/8" dia. x 2-3/8" high. Capacity 1.8 oz. Can be threaded directly into master cylinder port. Two units required on most installations (one per master cylinder). Supplied with vented plug in cap and 1/8" NPT male fitting in body. P/N 06-00391

MATCO BRAKE FLUID RESERVOIR



This brake fluid reservoir from Matco features a clear plastic bowl for easy inspection of reservoir fluid. Furnished with pre-drilled aluminum flange for easy mounting. Small and compact, this reservoir mounts almost anywhere. Temperature limit is 250°F Reservoir only...P/N 06-11225
Reservoir Kit (includes reservoir, tubing, & fittings for installation)P/N 06-11230

MATCO REMOTE BRAKE FLUID RESERVOIRS



MODEL 067-050 - Attaches directly to your master cylinder. Normal installation requires two (one for each master cylinder.) Supplied with 1/8" NPT fitting 1.98" high; 1.38" diameter Holds 1.10 fluid ounces. Weighs 1.5 ounces. P/N 06-00818

MODEL 067-054 - Designed to attach to firewall or other remote location. Adequate capacity to serve both master cylinders. Outlet has 1/8" female NPT thread at bottom of reservoir. 2.75" high; 1.75" diameter. Holds 2.42 fluid ounces. Weighs 3.6 ounces. P/N 06-00819



BERINGER FLUID RESERVOIR



Lightweight translucent plastic reservoir with aluminum anodized cover and brake fluid level indication. No leakage of fluid with flexible gasket. Use only DOT4 brake fluid in this reservoir. Working capacity: 0.3 cu in, total capacity: 0.67 cu in. Includes: 1 reservoir, EPDM hose 1.5 ft, stainless steel clamp. P/N 06-01105



DOT4 BRAKE FLUID - High performance DOT4 brake fluid with dry boiling point of 440°F minimum, meets FMVSS 116/DOT4 specifications. Yellow colored and it is not compatible with brake system designed for mineral-based fluids. 1 Pint P/N 06-01106

UNIVERSAL AIRCRAFT HEEL PLATES



These Universal Heel Plates can be installed in any aircraft without fasteners or hardware. Velcro secures them to the floor or carpeting. The Heel Plates are available in 22 gauge stainless steel, with a clear finish. The stainless heels are available in brush finish only. Any of the heel plates can be customized by 1/2" high vinyl letters for aircraft name and tail numbers. Plates are 8" wide x 12" long with Velcro strips supplied, but not mounted, Sold in sets of two plates.

Stainless steel brush finish heel plates05-00839
SPECIAL ORDER COLORS AVAILABLE

ACS RUDDER PEDALS



Professionally made black powder coated aluminum pedals as used in production aircraft. Approved by Rutan Aircraft Factory for use on the Defiant. 5"W x 6"L. Wt. 3/4 lb. ea.

P/N 06-00392 Pr.

Discount Less 10% on 6 Pr., 15% on 12 Pr., 20% on 20 Pr.

ACS RUDDER PEDAL/ TOE BRAKE ASS'Y



For use with any standard master brake cylinders. 2-piece design. Completely finished, assembled, ready for installation. Wt. 2 lbs. each.

P/N 11350 Set of 2 .

Discount Less 10% on 6 Pr., 15% on 12 Pr., 20% on 20 Pr.

AZUSA STEEL PEDAL SET



This rugged pedal set (left & right) features built-in stops, (4) 1/4" pre-drilled holes to allow adjustable rod connections and a 5/16"-18 x 1-3/4" long mounting bolt. Wt 7oz. ea. length 6.5' P/N 06-00107 /set

STARFLIGHT RUDDER PEDAL SET



These rudder pedals have been designed and optimized for the Lancair Legacy -- though they are easily integrated into other aircraft. They are overhead mounted, pilot adjustable and provide very precise, smooth rudder and brake control. Overhead mounting. Easily adjust for leg length by turning a small crank just behind the instrument panel. Brake master cylinders not included.* Weight: 8 lbs * Width: 14.4 in * Height: 10 in * Depth: 18 in * Rudder cables not included.

Standard.....P/N 05-04405.....
Lancair.....P/N 05-04406.....

DELUXE HOMEBUILDERS \ RUDDER PEDAL KITS



Designed for single or two place tandem seating experimental aircraft. The pedals are aluminum castings and the hinge bracket and pedal pivot pin are constructed from 4130 steel tubing. The pedals have an attachment point (1/4" hole) at the top to link the toe brake from the rear cockpit to the front cockpit only 2 master cylinders required). To mount the pedals the builder will need 2 steel bushings 3/4" long to weld through the fuselage and a tube to put through the bushings and the bottom tube of the hinge bracket. Will work well in almost any homebuilt aircraft.

Single Place Kit.....P/N 06-17015.....
Two Place Tandem Kit.....P/N 06-17025.....

RUDDER PEDALS FOR EXPERIMENTAL AIRCRAFT



Designed for the Loehle 5151 Mustang/P-40 these rudder pedals can easily be adapted to many light sport planes and ultralights. Made from spaceage polycarbonate, a material that is used when strength, light weight and durability are a necessity. Sample rudder pedals were shot with a .22 long rifle at a range of 10 yds, bullets failed to penetrate the 1/8" inch thick polycarbonate. Builder will have to fabricate simple back plates from either 1/8" thick birch plywood or 1/8" thick aluminum. An easy to understand detailed drawing is furnished with each set of rudder pedals. Specifications: Wt: 5.2 oz., Width: 4-1/8", Height: 9"P/N 06-00001

AEROSHELL BRAKE FLUID



Petroleum-base hydraulic fluid for use with brake and hydraulic systems with synthetic rubber seals. Meets specification MIL-H-5606G. Colored red.

P/N 09-27110 Pint.....
P/N 09-27000 Qt.....
P/N 09-27100 Gal.....

PHILLIPS XC HYDRAULIC FLUID 5606A



ConocoPhillips Company's X/C Aviation Hydraulic Fluid 5606A is a mineral-based, aviation hydraulic fluid with low temperature properties that's capable of performing under severe operating conditions and wide temperature ranges. It's perfect for both mechanics and plane owners alike.

Quart.....P/N 09-00774.....
Case.....P/N 09-00773.....



AXLES - BRAKE VALVES

TAPER SHIMS

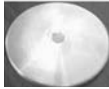
For wheel alignment. Ideal setting is zero toe-in and zero camber at normal operating weight. Shims may be rotated to any one of four positions to obtain desired result.



0441157-1

| Axle Size | Shim Part No. | Approx. correction value | Price Each |
|-----------|---------------|--------------------------|------------|
| | | Camber | Toe-In |
| 500x5 | 0441157-1 | 1/2° | 0.06" |
| | 0441157-3 | 1° | 0.12" |
| | 0441157-2 | 2° | 0.006" |
| 600x6 | 0441139-5 | 1/2° | 0.12" |
| | 0441139-6 | 1° | 0.20-0.25" |
| | 0541111-2 | 2-1/2° | 0.10-0.25" |

DIAL-A-DEGREE SHIM



For builders using a 600x6/500x5/GAC/Azusa bolt-on axle. The solution to most minor alignment issues (0 to 3° adjustment). This simple solution uses a pair of specially tapered discs that are mated and rotated in any combination needed to orient each axle to its correct alignment. Each 3" dia. disc is machined and laser-cut from aircraft grade 6061 T6 aluminum. A pair of discs is used on each side. FAA-PMA approved (BDS-101) Set of 4 discs.

P/N 06-00415 Ea.

CLEVELAND PARKING BRAKE VALVE



Aluminum valve as used in production aircraft with Model A-110 master cylinders for dual brake installations. Complete w/AN flare fittings. P/N 60-5

MATCO PARKING BRAKE VALVE



This versatile parking brake valve is ideal for installation in a wide variety of homebuilt aircraft applications. The arm actuates the valve in approximately a 45 degree arc allowing for ease of installation. In-line installation can be used in conjunction with either a single or dual parking brake system setup. Its uniquely simple design allows for easy maintenance and replacement of parts. The parking brake valve body is made from 6061 anodized aluminum for lasting durability. P/N 06-17200..... Ea.

MATCO SINGLE SIDED PARKING BRAKE VALVE



Light weight, and easy in-line installation. The overall dimensions of this product are a slim 2.3" X 0.75" X 0.75".

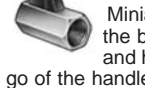
P/N 06-01267 Ea.

SCOTT PARKING BRAKE VALVE



A fine quality valve for applications in parking brake systems, helicopter rotor braking systems, pneumatic pressure controls and other hydraulic uses. Molded rubber valve seat designed for use with MIL-H-5606BB petroleum base hydraulic fluid. Maximum working pressure. Mounting holes extend through entire body. 1/8" NPT ports. P/N 4500-A1..... Ea.

MANUAL PARKING BRAKE VALVE



Miniature inline hydraulic manually operated ball valve. Fits in the bottom of the Master cylinder. Just pull the brake handle and hold the pressure and turn the lever on the ball valve. Let go of the handle and the ball valve holds the pressure until you release the lever back. 1/8"NPT Female x 1/8"NPT Male Chrome Plated Brass Valve 1.7" overall length. P/N 06-00971..... Ea.

GROVE INLINE PARKING BRAKE VALVE



Innovative design allows control lever to be attached in any of four positions as well as on either side of valve body. Internal poppet valves insure easy, secure operation. Body is drilled for mounting with two 3/16" bolts. Valve body dimensions: 1.5"x2.0"x0.75". Control arm has 45° of travel. Max operating pressure: 1,200 psi. For use with MIL-H-5606 Hydraulic Fluid. Weight: 0.32 lbs. Side or top inlet ports: 1/8"NPT * Outlet ports: 1/8" Female NPT or -4 Flare.

| Part No. | Inlet | Outlet | Price |
|----------|-------|----------|-------|
| 06-01260 | Top | 1/8" NPT | ..... |
| 06-01261 | Side | 1/8" NPT | ..... |
| 06-01262 | Top | -4 Flare | ..... |
| 06-01263 | Side | -4 Flare | ..... |

GOOSENECK HOSE COUPLING



Used on high pressure strut pump hose. High pressure connection with a swivel nut and female 1/8" NPT port on other end. P/N 06-11700..... Ea.

Replacement Seal.....P/N SK2043-5..... Ea.

STRUT VALVE



AN6287-1 strut valve for operating pressures up to 3000 PSI. Consists of a 3-piece stainless steel body, high-pressure valve core and MS20813-1B cap. P/N 06-00395..... Ea.

HIGH PRESSURE VALVE CORES



#2300HV (Long Type, Length 1-3/16") Operating pressure range 70-2000 PSI from -10° to 165°F. Conforms to AN809-1. P/N 06-00397..... Ea.

#9914A (Short Type, Length 7/8") Same operating range as #2300HV, but doesn't conform to AN809-1. P/N 06-00396..... Ea.

2525 VALVE CAP (MS20813-1B)



A heat-resisting cap designed to withstand high pressure conditions. Has special rubber sealing washer. P/N 2525..... Ea.

HOMEBUILDERS SPECIAL MAIN GEAR AXLES

AXLES - BOLT-ON TYPE



500X5 AXLE - Machined from 2024T3 aluminum. Gold anodized per specification MIL-A-8625C, Type II for improved corrosion resistance. Length 5-3/4". Mounting bolt pattern is four equally spaced 1/4" dia. holes on 1-15/16" dia. bolt circle. Thread size: 1-1/4 x 16. P/N 11701..... Ea.

500X5 AXLE - For 199-152 heavy duty discs (as used in Cozy). Same as #11701 axles above except 6" long and without undercut between bearings. P/N 11701-2..... Ea.

SPACERS FOR 500 X 5 AXLE - 2 required per axle when used with Cleveland wheels. Not required on 600x6 size. P/N 11716..... Ea.

EXTRA WIDE SPACER FOR 500X5 AXLE - 7/16" wide as used on 199-152 heavy duty discs. 1 required per axle with P/N 11716 (Use Axle # 11701-2) P/N 11716-2..... Ea.

600X6 AXLE - Similar to 500 x 5 size but 1-1/2" dia. x 6-1/4" long. Two 5/16" dia. and two 3/8" dia. mounting holes on 2-1/4" dia. bolt circle. Thread size: 1-1/2 x 16. P/N 11702..... Ea.

AXLES - WELD-ON TYPE

500 X 5 AXLE - For use on welded type gear. Fabricated from 1-1/4" O.D. x .120 wall 4130N steel tubing. Precision ground for proper bearing fit. One end threaded 1-1/4 x 12 for round axle nut. 12" long. P/N 11703-1..... Ea.

600 X 6 AXLE - For use on welded type gear. Fabricated from 1-1/2" O.D. x .120 wall 4130N steel tubing. Precision ground for proper bearing fit. One end threaded 1-1/2 x 16 for round axle nut. 12" long. P/N 11704-1..... Ea.

STEEL CESSNA AXLES

For use on flat spring landing gear, Cessna models 170, 172, 180, 182, 185 and 206. It is highly recommended to replace aluminum axles with these much stronger steel axles when operating on rough conditions, with larger wheels or on skis. FAA-PMA approved. P/N 05-00481..... Ea.

COZY LANDING GEAR STUD - a custom fabricated 4140 steel heat treated shaft with rolled 1/2-20 threads on both ends Used a gear attachment on Cozy Mark IV. 10.75"L. 2 required. P/N 01-00254..... Ea.

PIPER COMANCHE LANDING GEAR BUNGEE CORD INSTALLATION/REMOVAL TOOL

This tool allows for safe, simple, & quick bungee replacements on all Piper Comanches. Requires no dangerous levers, jacks, or vices, & does not subject the bungee cord to damage. Detailed instructions included. Bungee Cord Installation/Removal Tool..... P/N 12-00912..... Ea.

Open End Ratchet for use w/Bungee Tool P/N 12-00913..... Ea.

AXLE NUTS

Castle type nuts manufactured to MIL Specification MS21025 using 4140 steel. Mild steel nuts are not acceptable for use on certificated aircraft. 1-1/4" dia. nuts for 500 x 5 axles, 1-1/2" dia. nuts for 600 x 6 axles.

| | Nut Type | Thread | Axle Type | Part No. | Price |
|-------|----------|----------|-----------|----------|-------|
| Matco | Castle | 5/8-18 | Matco | 06-11815 | ..... |
| --- | Castle | 1-1/4-16 | Cessna | 06-11800 | ..... |
| --- | Castle | 1-1/2-16 | Cessna | 06-11900 | ..... |
| ACS | Round | 1-1/4-12 | Piper | 11725 | ..... |
| ACS | Round | 1-1/2-16 | Piper | 11726 | ..... |
| Grove | Round | 1-1/4-12 | Piper | 06-00937 | ..... |

HOMEBUILDERS AXLE NUTS - These 1-1/4" - 16 Castle axle nuts are similar in size & design to pn 06-11800 and are for homebuilts only. Used on Cozy and many other designs. PN 01-00814..... Ea.

AIRCRAFT TIRE VALVE CORE

#6035 (38-830)(Short Type) Operating pressure range 0-400 PSI from -65° to 350°F. P/N 6035..... Ea.

GROVE AXLES

For 500X5 Wheels w/Wheel Pant Stub - • Diameter: 1.25" • Material: Solid 2024-T3 aluminum w/anodized finish • Hole Pattern: 1-15/16" bolt circle; 1/4" dia. holes. Requires (2) P/N5710 spacers per axle. P/N 06-00601..... Ea.

For 600X6 Wheels w/Wheel Pant Stub - • Diameter: 1.5" • Material: Solid 2024-T3 aluminum w/anodized finish • Hole Pattern: 2.25" bolt circle; (2) 2-15/16" dia. bolt holes & (2) 2-3/8" dia. bolt holes. P/N 06-00602..... Ea.

RUDDER PEDAL RETURN SPRINGS

P/N 01-27300 Ea.

LG

SHOCK CORDS - RINGS



MILL FRESH SHOCK RINGS

An endless elastic ring composed of multiple strands of natural rubber, wound into a circular skein. Braided cover is high grade yarn. Manufactured to meet specification MIL-C-5651B, Type II. Shock cord is used in landing gear to

reduce shock transmitted to fuselage while landing and taxiing and on other shock mounting applications. Color coded to insure fresh stock.

| Ring No. | Ring Size* (In.) | Test (Lb.) | Aircraft | # Req. | Part No. | Price Ea. |
|----------|------------------|------------|---|--------|----------|-----------|
| 9044 | 9/16x4-1/2 | 400 | Hatz Bi-Plane | 4 | 9044 | . |
| 9090 | 9/16x9 | 425 | Taylorcraft B | 4 | 9090 | . |
| 9010HD | 9/16x10 | 475 | Taylorcraft BC | 4 | 06-00829 | . |
| 9010HDX | 9/16" X 10" | | Taylorcraft F-19/F-21 | 4 | 06-01132 | . |
| 1080 | 5/8x8 | 750 | Stolp Starduster.Rans S4/5 | 4 | 1080 | . |
| 1080HD | 5/8x8 | 900 | PA-16, PA-18 PA-20, PA-22, PA-25 | 4 | 06-00823 | . |
| 1174 | 11/16x7-1/2 | 730 | Piper J-2, Early J-3, J-5 | 4 | 06-00756 | . |
| 1192 | 11/16x9-1/4 | 750 | Taylorcraft D | 4 | 1192 | . |
| 11104 | 11/16x10-1/2 | 750 | Taylorcraft L-2 | 4 | 11104 | . |
| 1280 | 3/4x8 | 750 | Stolp Starduster Too | 4 | 1280 | . |
| 1280-HD | 3/4x8 | 950 | Piper J-3 (S/N8277 up) | 4 | 06-00826 | . |
| | | | PA-11, PA-12, PA-14 | 4 | | . |
| | | | PA-18 (thru S/N18-3013)Rans S10 Acrosport, Pitts S-2 | 4 | | . |
| 8097 | 1-1/2 x 9-7/8 | 400 | PA-24, PA-30 | 2 | 8097 | . |
| 1286 | 3/4x8-3/4 | 750 | Aeronca (S/N330 up) | 4 | 1286 | . |
| 1286HD | 3/4x8-3/4 | 950 | Skybolt | 6 | 06-00827 | . |
| | | | PA-20 (before 1952) | 2 | | . |
| 1380 | 13/16x8 | 1160 | Pitts (S-1, S-1C, S-1S) Husky Acrosport 2, Rans S9 | 4 | 1380 | . |

*1st dimension is cross section; 2nd dimension is inside dia. of ring.
HD - Heavy Duty, higher test rings. ***6 Rings for J-5.
HDX - Extra Heavy Duty.

CW (Cold Weather) shock rings available on Special Order basis. Prices are approx. twice that of standard shock rings. Add "CW" to standard part number when ordering.

SHOCK CORD

Made of fine natural rubber thread encased in a jacket of 2-ply woven cotton cord. Rubber strands are pre-stretched for an ultimate elongation of 120 to 140%. Treated to resist wear and oxidation. Meets specification MIL-C-5651B.

TYPE 1

| Dia. (In.) | Part No. | Price/Ft. Less Than 100 Ft. | 100 Ft. | Dia. (In.) | Part No. | Price/Ft. Less Than 100 Ft. | 100 Ft. |
|------------|----------|-----------------------------|---------|------------|----------|-----------------------------|---------|
| 1/8 | 06-12100 | . | . | 1/2 | 06-12500 | . | . |
| 1/4 | 06-12200 | . | . | 5/8 | 06-12600 | . | . |
| 5/16 | 06-12300 | . | . | | | | |
| 3/8 | 06-12400 | . | . | | | | |

SHOCK CORD FASTENERS

These cone spring hooks and locking rings are used as terminal fasteners. Insert cord through small end of cone. Apply and crimp locking ring about 1/2" from end of cord, pull cord back until locking ring contacts inside of fastener. Cut ends of cord may be sealed by dipping in rubber cement. Set includes Shock Cord Size, Fastener P/N, Price/Set

| Shock Cord Size | Fastener P/N | Price/Set |
|-----------------|--------------|-----------|
| 1/4" | 06-12800 | . |
| 3/8" | 06-12900 | . |
| 1/2" | 06-13000 | . |



SHOCK CORD INSTALLATION TOOL

This handy new tool installs standard shock rings on most aircraft without the great effort required in the past. This tool is designed for use with the shock cords shown above. Our price is the best anywhere. P/N 06-16600

BOGERT COMANCHE BUNGEE TOOL

Lower damage risk with the right tool • Complete control of bungee shock cords coming off • Complete control of bungee shock cords going on • E-Z instructions with detailed drawings • Safe landings depend on new cords every few years. P/N 06-00419

BOGERT COMANCHE GEAR RETRACTION TOOLS

Straight - Fits: PA-24, SN 24-1 through 24-4782 & 24-4784 through 24-4803 P/N 12-02095
Angled - Fits: All PA-30's, PA24, Serial number 24-4783, 24-4804 & up P/N 12-02094

BUNGEE-MASTER

At last... a tool that takes the hassle out of shock cord installation. Bungee-Master is quick, easy, and safe. A one man operation. It is small and compact, and features all metal construction with black anodized finish. Shock cords are stretched evenly with Bungee-Master using easy bench top operation. Requires only a shop vise. Will install shock cords on J-3 Cub, PA-18 Super Cub, PA-20 Pacer, PA-22 Tri-Pacer, PA-22 Colt, and the PA-25 Pawnee P/N 06-03910



SHOCK ABSORBER COIL RINGS

High pressure springs fabricated from alloy steel for top performance and long spring life. The Claude Gray shock absorber design has been service-proven on the EAA Biplane, Miniplane, Pitts and others. Over 1,000 pair in use. Length 6", 2" O.D., 1" I.D.. Wt. 4-1/2 lbs. per pair. Spring deflection 0.7" per 1,000 lb. force. Set of two springs. P/N 06-13200

Discount 10% on 6, 15% on 12



GRANVILLE'S STRUT SEAL

Landing gear strut packing seals shrink due to fluctuating weather conditions and age. This specially engineered hydraulic chemical additive leaves a protective coating on the strut shaft and allows the seal to expand to its normal size. It will stop strut leaks and is an excellent lubricant and corrosion preventative. Application is fast and easy - any owner or pilot can do the job in minutes. FAA approved.

Single-Strut Kit P/N 06-13300
3-Strut Kit (Single Engine)..... P/N 06-13400
3-Strut Kit (Medium Twins)..... P/N 06-13500
Large Twin kit (16 oz)..... P/N 06-00110
Granville Strut Additive (Pt.)..... P/N 06-00111

STRUT REBUILD KITS FOR CESSNA NOSE STRUTS

For Cessna models 150, 152, 172, 175, 182, R182, 205, 206, 210, T210, P210, 310-310Q, 320, 336, & 337. Includes 5 O-Rings, 2 Back-Up Rings, Scraper Ring. P/N 06-03960

FOR PIPER NOSE STRUTS

For Piper PA28-140, 150, 151, 160, 161, 180, 181, & 235. PA32-260 & 300. Includes O-Rings, Back-Up Ring, Seal, Wiper & Aluminum Gasket. P/N 06-03965

For Piper PA28R & PA32R series retractable nose struts. Includes Seals, O-Rings & Gasket. P/N 06-03970

FOR PIPER MAIN STRUTS

For Piper PA28-140, 150, 151, 160, 161, 180, 181 & 235, PA32-260 & 300. Includes O-Rings, Scraper, Seal & Aluminum Gasket. P/N 06-03975

For Piper PA28R & PA32R series retractable main struts, Includes Seals, O-Rings & Gasket. P/N 06-03980

STRUT SEAL KITS FOR PIPER



Kits contain Mil-Spec & Industry Standard Seals and Components required for various Piper Strut application

Seal kit for nose or main strut for Piper Apache/Aztec 06-00126
Strut seal kit for Piper PA-24 main gear 06-00127
Strut seal kit for Piper PA24 nose gear..... 06-00128
Strut seal kit for Piper PA30 main gear..... 06-00129
Strut seal kit for Piper PA30 nose gear..... 06-00130
Main Strut seal kit for Piper PA28 140, 150, 151, 160, 161, 180, 181, 235, & PA32-260, 300 06-03975
Nose strut seal kit for PA28-140, 150, 151, 160, 161, 180, 181, 235, & PA32-260, 300 06-03965
Main strut seal kit for PA28R & PA32R-300, 301, 301T, & PA32RT-300, 300T 06-03980
Nose strut seal kit for PA28R & PA32R-300, 301, 301T, & PA32RT-300..... 06-03970

HOMEBUILT AIRCRAFT LANDING GEAR

These custom landing gear are fabricated from aircraft grade 2024T3 aluminum. After cutting and milling, they are annealed to "O" condition for bending, and then heat-treated to "T6" condition for exceptional strength and durability. Top quality landing gear at exceptional pricing.



NOTE: Request landing gear layout sheet when placing order or quotation Request for custom landing gear to verify correct gear for application.

| Aircraft Type | Part No. | Price |
|-------------------------------------|----------|-------|
| KITFOX - Mod 3&4 TD | 06-04025 | . |
| PITTS - S1 | 06-03915 | . |
| S1-11B SuperStinker | 06-04035 | . |
| Baby Lakes | 06-04070 | . |
| VP1 - 1100B Free Standing No Cables | 06-04040 | . |
| Zenair CH701 | 06-00058 | . |

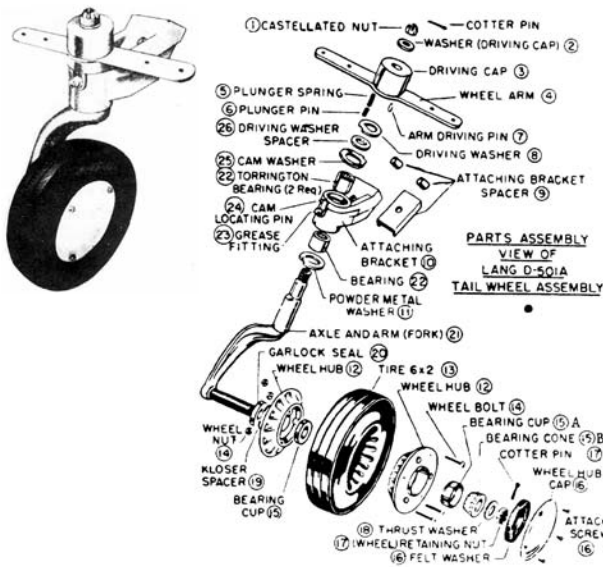
NOTE:

ALL GROVE AIRCRAFT LANDING GEAR IS NON-CANCELLABLE / NON-RETURNABLE.

LG

TAILWHEELS

LANG TAILWHEEL PARTS



| Ref No. | Lang No. | Part No. | Qty | Price Each | Ref No. | Lang No. | Part No. | Qty | Price Each |
|---------|----------------------|----------|-----|------------|---------|----------------------|----------|-----|------------|
| 1&2 | A-501, A521 | 06-13601 | 1 | . | 16 | A-522, A-523 & A-524 | -- | -- | -- |
| 3&7 | A503, A507 | 06-13637 | 1 | . | | | 06-13600 | 1 | . |
| 4 | A-504 | 06-13604 | 1 | . | 17 | A-521 | 06-13617 | 1 | . |
| 5&6 | A-505, A506 | 06-13656 | 1 | . | 18 | A-531 | 06-13618 | 1 | . |
| 8 | A-509 | 06-13608 | 1 | . | 19 | A-546 | 06-13619 | 1 | . |
| 9 | A-512, A560-1 A560-2 | 06-13609 | 1 | . | 20 | A-547 | 06-13620 | 1 | . |
| 10 | C-501 | 06-13610 | 1 | . | 21 | C-503 | 06-13621 | 1 | . |
| 11 | A-516 | 06-13611 | 1 | . | 22 | A-554 | 06-13622 | 2 | . |
| 12 | A-544, A545 | 06-13800 | 2 | . | 23 | A-525 | 06-13623 | 1 | . |
| 13 | A-590 | 06-15800 | 1 | . | 24 | A-508 | 06-13624 | 1 | . |
| 14 | A-548, A549 | 06-13614 | 3 | . | 25 | A-511 | 06-13625 | 1 | . |
| 15A | A-518 | 13287 | 2 | . | 26 | A-510 | 06-13626 | 1 | . |
| 15B | A-519 | 13286 | 2 | . | | | | | |

HUB ASS'Y (2 #12 Hub Halves, 3 #14Bolts & Nuts).. P/N 06-13800
 HUB ASS'Y W/ BEARING CUPS..... P/N 06-13900
 WHEEL ASS'Y (Hub Ass'y & 2 Bearing Cups & Cones). P/N 06-14000
 WHEEL & TIRE ASS'Y (Wheel Ass'y & 6 x 2 Tire) P/N 06-14100

THE LANG TAILWHEEL – FAA APPROVED STEERABLE – FULL SWIVEL

THE ONLY TAILWHEEL TO MEET THE EXACTING REQUIREMENTS OF THE CHRISTEN EAGLES - The Lang Model D-501-A Tailwheel is full swivel, fully automatic and steerable. It is impossible to throw the Lang tailwheel into full swivel unintentionally regardless of rough field conditions or cross winds. This tailwheel will not lock in any position except steerable, but releases easily when plane is pushed sideways or backwards by hand or when maneuvering plane on ground using brakes. The Lang tailwheel fits both 1-1/4" and 1-1/2" leaf springs. Drop forged, heat-treated 4130 chromoly steel fork of single arm type. The cast aluminum wheel is grease packed for 100 hours service. The 6 x 2.00 solid rubber tire has interior wire reinforcement for added strength. Manufactured by ACS Products Co. under FAA-PMA. All replacement parts available. The Lang tailwheel is FAA-approved for installation on many light aircraft including Aeronca 7AC, Piper J-3 and PA-12, Cessna 140, Luscombe and Taylorcraft. Comparable to Scott Model 2000. Wt. 6 Lbs. **OEM & DISTRIBUTOR PRICING AVAILABLE** P/N 06-00398

LG

HOMEBUILDERS SPECIAL TAILWHEELS

FULL SWIVEL AND STEERABLE 4 INCH DIAMETER FULL SWIVEL/STEERABLE



P/N L-691 Standard 45° spring angle, for 1-1/4" or 1-1/2" flat spring.
 P/N L-692 Optional 20° spring angle, for 1-1/4" or 1-1/2" flat spring.
 P/N L-693 10° Angle, for 5/8" round spring.
 Any Model (Wt. 3 Lbs.)
***Note: Requires spacer P/N 06-13609 for use w/ 1.25" spring**

HEAVY DUTY DOUBLE FORK 6 INCH DIA. FULL SWIVEL / STEERABLE



Locks in steerable mode when aircraft is moved forward. Releases to full swivel when pushed sideways or backwards, or when maneuvering on the ground using brakes. Tire is solid soft rubber, with sealed ball bearings.
P/N 6131 - Std. - 45° Angle for 1-1/4 or 1-1/2 flat spring.

P/N 6133 - Optional-20° Angle for 1-1/4 or 1-1/2 flat spring.
P/N 6135 - 10° Angle for 5/8 round spring.
 Any Model (wt. 6lbs.)
****Note: Requires spacer P/N 06-13609 for use with 1-1/4" spring.**

6 INCH DIAMETER FULL SWIVEL/STEERABLE



P/N L-694 Standard 45° spring angle, for 1-1/4" or 1-1/2" flat spring.
 P/N L-695 Optional 20° spring angle, for 1-1/4" or 1-1/2" flat spring.
 P/N L-696 10° Angle, for 5/8" round spring.
 Any Model (Wt. 5 Lbs.)
***Note: Requires spacer P/N 06-13609 for use w/ 1.25" spring.**

REPLACEMENT WHEELS FOR HOMEBUILDER'S SPECIAL TAILWHEELS



Replacement wheels with tires & bearings for the Homebuilder's tailwheels shown above.
 4X1.5X5/8 BB Natural P/N 06-03500.....
 4X1.5X3/8 BB Natural P/N 06-00067.....
 6X2.125X5/8 Balloon* P/N 06-03600.....
 *This is a solid Tire

LONG LIFE SEALED BALL BEARINGS

These high quality bearings are superior to standard bearings furnished with homebuilder tailwheels P/N 06-00060.....

RAVEN LOCKING TAILWHEELS



4" Bolt-On Model



6" Weld-In Model

We have 5 versions of Raven locking tailwheel assemblies. They come with polished stainless springs plus any and all brackets and tubing to mount the tailwheel. 4" models are for aircraft like the Pitts S-1 etc. and are good up to 1250 lbs gross weight. The tailwheel assembly is 21" long

and weighs 5lbs. 6" models are for aircraft like the Christen Eagle Pitts S-2 etc. and are good up to 1900 lbs gross weight. The tailwheel assembly is 24" long and weighs 7lbs.

- 4" weld in tube model, straight spring with tube to weld into fuse P/N 06-00121
- 4" bolt on model, angled spring with 3/8" hole and bracket for tail post P/N 06-00122
- 6" weld in tube model, straight spring with tube to weld into fuse P/N 06-00123
- 6" bolt on model, angled spring with 3/8" hole and bracket for tail post P/N 06-00124
- 4" direct replacement for RV aircraft with 7/8" ID fuse tube(23", 7lbs. P/N 06-00125

BERINGER TAILWHEEL



Tail wheel, fully CNC machined, static load: 330Lbs, for tyre 200x50 • Aluminum anodized Tailwheel • for 200x50 or 200x65 tube type tyre • In 2 parts easily removable, with ball bearings • Alloy: 2017 (AU4G) machined from billet on CNC • For axis 08 mm (0.32") • Weight: 9oz. P/N 06-00957

REPLACEMENT TAILWHEEL FOR VAN'S TAILWHEEL ASSEMBLY



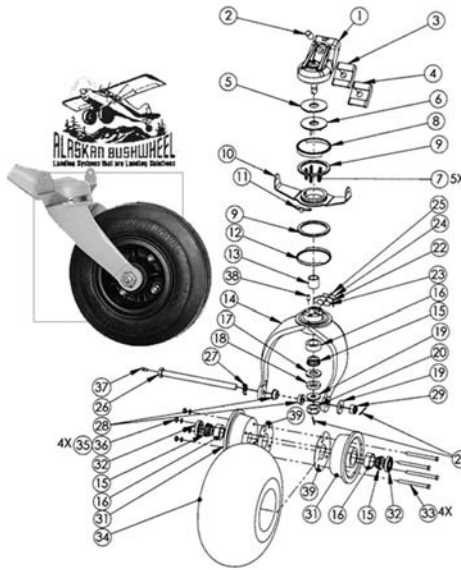
This is a replacement tail wheel for the Van's tail wheel assembly. The hub is made from 6061-t6 aircraft aluminum with a tire molded from 65 durometer SBR rubber. The design includes precision sealed bearings. 5-1/2" Diameter X 1-1/2" Thick P/N 06-01284.....

TAILWHEELS

ALASKAN BUSHWHEEL INC. 3200 TAILWHEEL ASSEMBLY

The Alaskan Bushwheel Tailwheel Assembly is an FAA-PMA (PMA # PQ1557NM, Supplement 9) replacement part for the Scott 3200 assembly and parts contained therein, includes Heavy Duty Steering Arm. One Year Warranty.

| | |
|---|--------------------|
| ABI-3200 Standard Tailwheel Assembly(3214 Standard Arm) | P/N 06-00836 |
| ABI-3224A Standard Tailwheel Assembly(3214T Heavy Duty Arm) | P/N 06-00722 |
| ABI-3200B Tailwheel Tundra Assembly..... | P/N 06-00723 |
| ABI-800613-00 Pawnee 2-bolt Tailwheel Head | P/N 06-00820 |
| ABI-2600A 4" wheel halves with 2.80x2:50x4 tire & tube mounted and ready to go..... | P/N 06-01190 |



| # | Part No. | Description | Part No. | Price | # | Part No. | Description | Part No. | Price |
|-----|-----------------|--------------------------------------|----------|-------|-----|------------------|--------------------|-------------|-------|
| 1 | ABI-3216-00 | Bracket Assy. | 06-00724 | . | 17 | ABI-1863 | Grease Retainer | 06-00746 | . |
| 2 | ABI-3241-3S**** | Spacer | 06-00725 | . | 18 | ABI-2504-1 | Spacer | 06-00752 | . |
| 3 | ABI-3243-02**** | Leaf Spring Adapter 1-3/4" to 1-1/4" | 06-00810 | . | 19 | AN960-816 | Washer | AN960-816 | . |
| 4 | ABI-3243-01**** | Leaf Spring Adapter 1-3/4" to 1-1/2" | 06-00811 | . | 20 | AN320-8 | Shear Nut | AN320-8 | . |
| 5 | ABI-3207-00 | Fiber Thrust Washer | 06-00726 | . | 21 | MS24665-283 | Cotter Pin | MS24665-283 | . |
| 6 | ABI-3235-00 | Thrust Plate Assy. | 06-00727 | . | 22 | ABI-3222-00 | Compression Spring | 06-00737 | . |
| 7 | ABI-3233-00 | Compression Spring | 06-00728 | . | 23 | ABI-3258-00 | Spacer | 06-00738 | . |
| 8 | ABI-3256-02 | Hvy-Dty Dust Cap, Upper | 06-00729 | . | 24 | ABI-3258-01 | Spacer | 06-00739 | . |
| | ABI-3255-02 | Std. Dust Cap, Upper | 06-00814 | . | 25 | ABI-3257-00 | Pin | 06-00740 | . |
| 9 | ABI-3206-00 | Thrust Washer | 06-00730 | . | 26 | ABI-872* | Axle | 06-00741 | . |
| 10 | ABI-3214T | Hvy-Dty Standard steering arm assy. | 06-00731 | . | 26A | ABI-3236** | Axle | --- | --- |
| 10A | ABI-3214-00 | Standard Standard steering arm assy. | 06-00812 | . | 27 | ABI-3225-00 | Tab Lock Washer | 06-00742 | . |
| 11 | ABI-3219-00 | PAWL | 06-00732 | . | 28 | ABI-3227-00 | Spacer | 06-00743 | . |
| 12 | ABI-3256-1 | Hevt-Duty Dust Cap, Lower | 06-01264 | . | 29 | 33475-008 | Castle Nut | AN310-8 | . |
| | ABI-3256-1 | Std. Duty Dust Cap, Lower | 06-00733 | . | 30 | ABI-S2* | Rim Spacer | 06-00744 | . |
| | ABI-3235-01 | Std. Duty Dust Cap, upper | 06-00813 | . | 31 | ABI-3244-00 | Wheel Half | 06-00745 | . |
| 13 | ABI-3205-00 | Bushing | 06-00734 | . | 32 | ABI-7024 | Bearing Race Seal | 06-00746 | . |
| 14 | ABI-F1* | Tailwheel Fork | 06-00735 | CALL | 33 | AN4-34A* | Wheel Bolt | AN4-34A | . |
| 14A | ABI-3224** | Tailwheel fork Std. | 06-00736 | . | 33A | AN4-7A** | Wheel Bolt | AN4-7A | . |
| 15 | A4050 | Cone Bearing | 13286 | . | 34 | 1154R* | Tire | --- | --- |
| 16 | A4138 | Bearing Race | 13287 | . | 34A | 280 x 2.50 x 4** | Tire | 06-00748 | . |
| | | | | | 35 | 33478-202 | Self Locking Nut | 33478-202 | . |
| | | | | | 36 | 1/4" Washer | Flat Washer | AN960-416 | . |
| | | | | | 37 | T7201 | Zerk Fitting | 06-00753 | . |
| | | | | | 38 | ABI-232-046 | Dowel Pin | 06-00749 | . |
| | | | | | 39 | ABI-2602** | Gasket | 06-00750 | . |

* Parts not included in ABI-3200/ABI-3224A Assembly

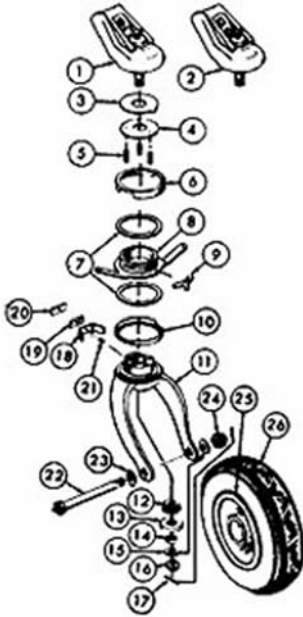
** Parts not included in ABI-3200B Assembly
Parts in red are not sold individually.

*** Parts not included in assemblies.



REPLACEMENT PARTS FOR SCOTT 3200 TAILWHEEL

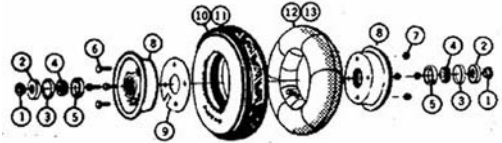
The Scott Model 3200 tailwheel, with 8" pneumatic tire, is designed to give years of trouble-free service. The swivel mechanism is designed to keep out water, sand and mud. Grease fittings are provided for lubrication. Bracket fits 1-3/4" wide tailwheel leaf spring. Wt. 7-1/2 lbs. Attaching hardware not furnished.



| Item No. | Part No. | Description | No. Req'd | Price Ea. |
|----------|----------|----------------------|-----------|-----------|
| 1 | 3216 | Bracket Ass'y | 1 | . |
| 2 | 800613 | Bracket Ass'y* | 1 | . |
| 3 | 3207 | Washer, Thrust | 1 | . |
| 4 | 3234 | Thrust Plate Ass'y | 1 | . |
| 5 | 3233 | Spring, Compression | 5 | . |
| 6 | 3235-2 | Dust Cap | 1 | . |
| 7 | 3206 | Washer, Thrust | 2 | . |
| 8 | 3214 | Arm Assembly | 1 | . |
| 9 | 3219 | Pawl | 1 | . |
| 10 | 3235-1 | Dust Cap | 1 | . |
| 11 | 3224 | Fork Ass'y | 1 | . |
| 12 | 13286 | Cone Bearing | 1 | . |
| 13 | 1863 | Retainer, Grease | 1 | . |
| 14 | 2504-1 | Spacer | 1 | . |
| 15 | 18107 | Washer, AN960-816 | 2 | . |
| 16 | 18450 | Nut, Shear AN320-8 | 1 | . |
| 17 | 18482 | Pin, Cotter | 2 | . |
| 18 | 3222 | Spring | 1 | . |
| 19 | 3258 | Spacer | 1 | . |
| 20 | 3258-1 | Spacer | 1 | . |
| 21 | 3257 | Pin | 1 | . |
| 22 | 3236 | Axle Ass'y | 1 | . |
| 23 | 3225 | Washer, Lock | 1 | . |
| 24 | 18443 | Nut, Castle, AN310-8 | 1 | . |
| 25 | 3244 | Wheel Ass'y | 1 | ---- |
| 26 | 2600 | Tire & Wheel Ass'y | 1 | ---- |

SCOTT MODEL 2600 8-INCH PNEUMATIC TIRE

The Model 2600 8" pneumatic tire and wheel assembly is used on the 3200, 3250, 3400 and 3425 Series tailwheel assemblies. The Model 3245-1 10" pneumatic tire and wheel assembly is used on the 3425 & 3450 Series tailwheel assemblies. Total Wt. 3 lbs. 13 oz.



| Item No. | Part No. | Description | 8" Assy P/N 2600 | 10" Assy P/N 3245-1 | Price Each |
|----------|-----------|-----------------------|------------------|---------------------|------------|
| 1 | 3227 | Spacer | 2 | 2 | . |
| 2 | 1863 | Retainer, Grease | 2 | 2 | . |
| 3 | 1862 | Spacer | 2 | 2 | . |
| 4 | 13286 | Bearing Cone (A-4050) | 2 | 2 | . |
| 5 | 13287 | Bearing Cup (A-4138) | 2 | 2 | . |
| 6 | 18438 | Bolt | 4 | 4 | . |
| 7 | 33478-202 | Nut, Self Locking | 4 | 4 | . |
| 8 | 2598 | Hub | 2 | 2 | --- |
| 9 | 2602 | Gasket | 1 | 1 | . |
| 10 | 3228 | 8" Tire | 1 | | . |
| 11 | 06-08100 | 10" Tire | | 1 | . |
| 12 | 3223 | 8" Tube | 1 | | . |
| 13 | 3247 | 10" Tube | | 1 | . |

SCOTT LEAF SPRING SPACERS AND SPRING KITS

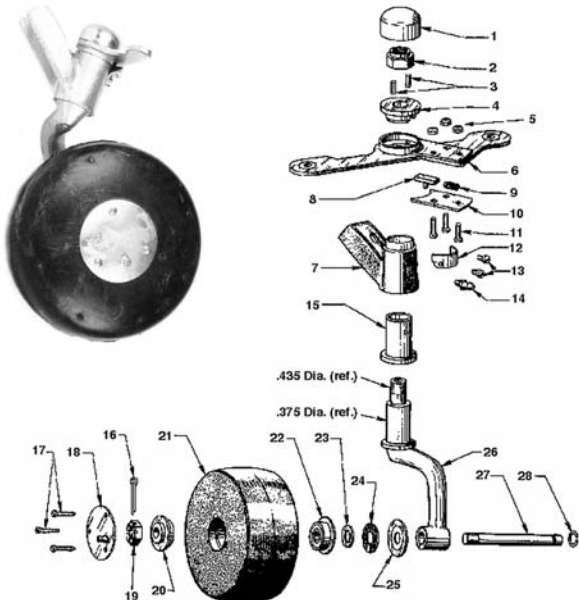
| | |
|---|--------------------|
| 3241-3S - Spacer Only..... | P/N 06-00406 |
| 3243-2 - Spacer Only | P/N 06-00407 |
| 3241-1S - Adapter Kit - Converts 1-3/4" 3216 (1 3/4") bracket to 1-1/2" width. | P/N 06-00408 |
| 3239 - Heavy Duty Tension Spring Kit..... | P/N 06-00008 |
| 3243-01 - Converts 1-3/4" Bracket to 1-1/4" Bracket. Used on 3200 Tailwheel..... | P/N 06-00421 |

TAILWHEELS

MAULE MODEL SFSA SOLID TAILWHEELS

The SFSA tailwheel assembly is of the same type construction as the SFS-P8A unit except for the tire, which is a 6.50 x 2.50 soft rubber solid tire. Spring connector kit not furnished with this model. FAA-approved. Wt. 6 lbs.

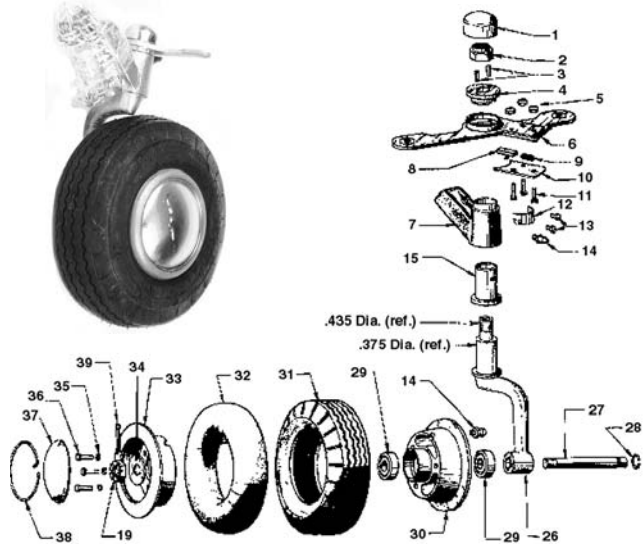
- SFSA-1-4, for 1-1/4" Spring P/N 06-16710.....
- SFSA-1-2, for 1-1/2" Spring P/N 06-16720.....
- Replacement Tire & Bearings P/N TW-23A.....



MAULE MODEL SFS-P8A PNEUMATIC TAILWHEELS

An inexpensive 8" pneumatic tailwheel assembly which is steerable and full swiveling, with new improved single arm shimmy-free fork. All working parts heat treated. FAA approved. Wt. 7 lbs.

- Maule Tailwheel #SFS-P8A-1-4* P/N 06-16760.....
 - Maule Tailwheel #SFS-P8A-1-2** P/N 06-16740.....
 - McCreary Tire 2.80/2.50-4 4 Ply P/N 06-08000.....
 - McCreary Tube 280 X 250 X 4 P/N 06-08101.....
- * - For 1-3/4" Leafspring ** - For 1-1/2" Leafspring



LG

MAULE P8B TUNDRA TAILWHEEL

A new tailwheel with 8" pneumatic tire designed and engineered to meet the toughest conditions on all types of airports and landing fields.

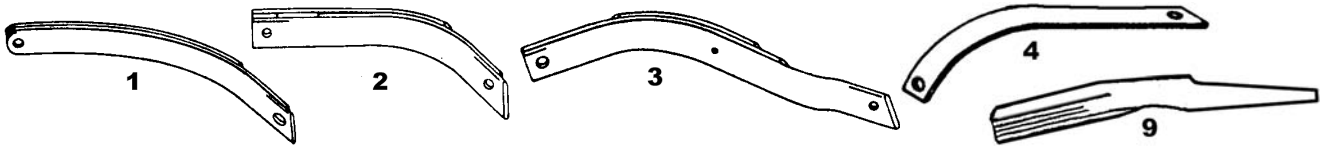
- SFS-P8B-1-4 For 1-1/4" Leaf Spring Width P/N 06-16750.....
- SFS-P8B-1-2..... For 1-1/2" Leaf Spring Width P/N 06-16760.....
- SFS-P8B-3-4..... For 1-3/4" Leaf Spring Width P/N 06-16770.....

MAULE TAILWHEEL PARTS LIST

| # | Description | Old Style SFS-P8 Pneumatic or SFS Solid Rubber | New Style SFS-P8A Pneumatic and SFSA Solid Rubber | Qty. Req. | Price Each |
|---|---------------------------|---|---|-----------|------------|
| | | Part Number | Part Number | | |
| 1 | Cover Cap | TW-18 (1-1/4") | TW-63A (1-3/8") | 1 | . |
| 2 | Nut | AN364-720A or AN365-720 | AN364-720A or AN365-720 | 1 | . |
| 3 | Lock Ring Pin | TW-17 | TW-60AB | 1/2 | . |
| 4 | Lock Ring | TW-16 | TW-57 | 1 | . |
| 5 | Nut | AN364-440A | AN364-440A | 3 | . |
| 6 | Steering Arm Assembly* | TW-15 (TW-13 & TW-16 are included in this Assembly) | TW-15A | 1 | . |
| 7 | Bracket Assy., 1-1/4 In | 06-16101 | 06-16201 | 1 | . |
| | Bracket Assy., 1-1/2 In | 06-16102 | 06-16202 | 1 | . |
| 8 | Lock Pin | TW-13 | TW-13 | 1 | . |
| 9 | Steering Arm Spring | TW-14 | TW-14 | 1 | . |
| 10 | Lock Cover Plate | TW-12 | TW-12 | 1 | . |
| 11 | Screw | MS35206-217 | MS35206-217 | 3 | . |
| 12 | Cam | TW-10 | TW-10 | 1 | . |
| 13 | Screw | AN501-A10-4 | AN501-A10-4 | 2 | . |
| | AN520-10-4 | AN520-10-4 | | | |
| 14 | Zerk Fitting | TW-7-A14 | TW-7-A14 | 1 | . |
| 15 | Oilite Bearing | TW-7 (3/4" I.D.) | TW-59A (7/8" I.D.) | 1 | . |
| Items 16 through 25 are for the solid rubber tire assembly only. | | | | | |
| 16 | Cotter Pin | AN380-3-3 | AN380-3-3 | 1 | . |
| 17 | Screw | TW-A18 | TW-A18 | 3 | . |
| 18 | Hub Cap | TW-27 | TW-27 | 1 | . |
| 19 | Axle Nut | AN320-8 | AN320-8 | 1 | . |
| 20 | Bearing | TW-3 | TW-3/A15 | 1 | . |
| 21 | Tire—solid, no bearings | TW-23 | TW-23 | 1 | . |
| | Tire—solid, with bearings | TW-23A | TW-23A | 1 | . |
| 22 | Bearing (with washer) | TW-A15 | TW-A15 | 1 | . |
| 23 | Washer | TW-28 | TW-28 | 1 | . |
| 24 | Felt Seal | TW-26 | TW-26 | 1 | . |

| # | Description | Old Style SFS-P8 Pneumatic or SFS Solid Rubber | New Style SFS-P8A Pneumatic and SFSA Solid Rubber | Qty. Req. | Price Each |
|---|--------------------------------------|--|---|-----------|------------|
| | | Part Number | Part Number | | |
| 25 | Retainer Washer Fork (with axle) | TW-64 | TW-64 | 1 | . |
| | Pneumatic | 06-00092 | TW-58A | 1 | . |
| | Solid Rubber | 06-00093 | TW-61A-1 | 1 | . |
| 27 | Axle | TW-5 | TW-5 | 1 | . |
| 28 | Axle Sircclip Ring | TW-6 | TW-6 | 1 | . |
| 29 | Bearing | TW-A7 | TW-A7 | 2 | . |
| 30 | Inboard Wheelhalf, with bearings | TW-30 | TW-30 | 1 | . |
| 31 | Tire, 8-inch | | | 1 | ----- |
| 32 | Tube | | | 1 | ----- |
| 33 | Outboard Wheelhalf | TW-31 | TW-31 | 1 | . |
| 34 | Washer | TW-A6 | TW-A6 | 1 | . |
| 35 | Lock Washer | AN935-516 | AN935-516 | 3 | . |
| 36 | Bolt | TW-A12 | TW-A12 | 3 | . |
| 37 | Hub Cap | TW-32 | TW-32 | 1 | . |
| 38 | Hub Cap Sircclip Ring | TW-33 | TW-33 | 1 | . |
| 39 | Cotter Pin | AN380-3-3 | AN380-3-3 | 1 | . |
| Items 40 through 44 are used on the "Old" style & Pneumatic tailwheel that have a shimmy dampener. | | | | | |
| 40 | Adjusting Screw | TW-40 | | 1 | . |
| 41 | Dampener Spring | TW-41 | | 1 | . |
| 42 | Friction Block | TW-42 | | 1 | . |
| 43 | Hex Housing | TW-43 | | 1 | . |
| 44 | Bracket Assembly, 1-1/4 inch drilled | TW-44-1-4 | | 1 | ----- |
| | Bracket Assembly, 1-1/2 inch drilled | TW-44-1-21 | ----- | | ----- |

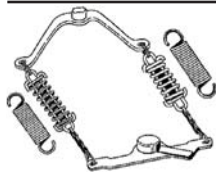
TAILWHEELS



STEEL TAILWHEEL LEAF SPRINGS

| Set No. | Spring Width | Hole Dia. Fuselage End | Hole Dia. Tailwheel End | Distance Between Bolt Centers | Original Application | Wt. Lbs. | No. of Springs | Part No. | Price |
|---------|--------------|------------------------|-------------------------|-------------------------------|--|----------|----------------|-----------|-------|
| 1 | 1-1/4" | 7/16" | 3/8" | 12" | Piper J3, PA11, PA11, PA12, PA14, PA15, PA17 | 3-1/8 | 3 | 06-14200 | . |
| 2 | 1-1/2" | 3/8" | 3/8" | 10" | T-Craft BC-12D | 2-3/4 | 3 | 06-14300 | . |
| 3 | 1-1/2" | 3/8" | 7/16" | 15" | Aeronca 7AC, 11AC | 3-1/2 | 3 | 06-14400 | . |
| 4 | 1-1/2" | 3/8" | 3/8" | 15" | Homebuilts | 1-3/4 | 1 | 06-14500 | . |
| 5 | 1-1/4" | 5/16" | 3/8" | 11-3/4" | Luscombe | 3-1/2 | 4 | 06-14600 | . |
| 6 | 1-1/4" | | Main Leaf Only | 11-3/4" | Luscombe | 1-1/2 | 1 | 06-14700 | . |
| 7* | 1-1/2" | 5/8" | 7/16" | 13-1/8" | Cessna 120-140 | 4 | 4 | 06-14800* | . |
| 8 | 1-1/2" | | Main Leaf Only | 13-1/8" | Cessna 120-140 | 1-1/2 | 1 | 06-14900 | . |
| 9 | 1-1/2" | 5/8" | 7/16" | 13" | Cessna 170 | 5 | 5 | 06-15000 | . |
| 10 | 1-1/2" | | Main Leaf Only | 13" | Cessna 170 | 1-3/4 | 1 | 06-15100 | . |

DISCOUNTS LESS 10% ON 6, 15% ON 10 (ASSORTED) *P/N 06-14800 has two bends



MAULE ANTI-SHIMMY CONNECTOR SPRING KITS

A high and low frequency spring is used to upset the natural frequency of the tailwheel. The lighter spring is used on the left side. Compression Type Kit
P/N 06-15150.....



TENSION TYPE CONNECTOR SPRING KITS

Kit consists of two tension type springs, two chains and two connector links.
Lightweight Spring Kit ScottP/N 2151Ea .
Connector Links.....P/N 06-15400Ea .
ChainP/N 06-15500Ft .



COMPRESSION TYPE CONNECTOR SPRING KIT

Replace conventional springs with new compression type. Original tension type springs keep rudder post under continuous tension which wears the hinges. Compression type springs keep rudder neutral - no tension on post. Assures more effective steering action.
Set of 2 stainless steel springs, (2) 1' chains, 4 connector clips: P/N 06-15600Ea .
Springs Only P/N 06-15700Ea .
Connector Clips P/N 06-15400Ea .
Chain P/N 06-15500J/Ft

RUDDER ARMS

SCOTT - Cast aluminum brackets with reinforced chain mounting holes. Originally used on Piper J-3, J-4, J-5, PA-11, PA-18, L-21B. 3/4" dia. post between mounting holes.
Scott..... P/N 1140.....



HOMEBUILDERS MODEL - Same style as Scott model. 3/4" dia. post and 3/4" arm (width)
P/N 06-15900.....



RUDDER ARM 1" SHANK - Originally designed for J-3 through PA-18 series, but adapts nicely to most homebuilts. Code 1
P/N 06-01045.....



MATCO TAILWHEELS



Matco tailwheels use a fiberglass reinforced nylon wheel with an operating load of 450 lbs. It takes over 5000 lbs to fail the wheel and it will hold up in the most rigorous conditions. Can be used with 1-.25" or 1.5" leaf spring. These tailwheels are fully steerable, full swivel, and are available with a 6" hard rubber solid tire or with 8" Shin pneumatic tire and tube for heavier aircraft. Tailwheel construction is anodized aluminum. Wt: 5 lbs.
Matco solid rubber tire tailwheel assy
P/N 06-01615.....

Replacement Tire (solid rubber) for T-6.P/N 06-00004.....
Matco 6" Pneumatic the tailwheel assy.P/N 06-00831.....
Replacement 6" Pneumatic Tire Tube.P/N 06-00832.....
Matco T8" full swiveling pneumatic tire tailwheel assy.P/N 06-01620.....
Matco T8" Replacement Wheel.....P/N 06-00565.....
McCreary Replacement 8" Tire 2.80/2.50-4 4PLY
P/N 06-08000.....
McCreary Replacement Tube 8" 280 X 250 X 4
P/N 06-08101.....

TAILWHEEL TIRES



6X2 AERO CLASSIC SOLID TIRE - Used on Scott 2000, Lang D-501A Tailwheels. Replaces Goodyear 6x2 tire. . P/N 06-01044.....

6X2 GENERAL SOLID TIRE - A flexible rubber tire with four knobs on center hole. This is Scott P/N 1879 used on Scott Model 2000 tailwheels and some Scott 3-24B tailwheels. Also used on Lang D-501A tailwheel. Replaces Goodyear
6x2 (11 knobs) solid tailwheel tire..... P/N 06-15800.....

6.50 X 2.50 SOLID TIRE - Maule P/N 23 for Model SFSA tailwheels.
Tire Only.....P/N 06-00409.....
Tire w/ Bearings P/N 06-00410.....

2.80/2.50 X4 MCCREARY PNEUMATIC TIRE - Used on Scott Model 2600 8" wheel assembly.
Tire P/N 06-08000.....
Tube P/N 06-08101.....

2.80/2.50 X4 AZUSA TIRE
Tire P/N 06-01287.....
Tube P/N 06-01288.....

10 X 3.50 X 4 MCCREARY PNEUMATIC TIRE - Used on Scott Model 3450 tailwheel and Scott Model 3245-1 10" wheel assembly.
Tire P/N 06-08100.....
Tube P/N 06-08102.....

400 X 4 AERO CLASSIC - used on Grove Model 49-1A; Tire: 11.5" Dia. Looks like scaled down 500x5 tire.
Tire P/N 06-00844.....
Tube P/N 06-08102.....

400X6 AERO CLASSIC - The New Light Sport Tire, 400-6 6 Ply with a Deep Aircraft Type Tread.
Tire P/N 06-00944.....
Tube P/N 06-00945.....



LANDING GEAR

TRICKAIR AIRCRAFT SKIS



Trick Air has developed simple and reliable light aircraft skis of fiberglass composite construction which are aerodynamic and easy to attach and detach from your plane. So easy, in fact, they attach or detach in less than half an hour!

These skis are made in the USA using the latest environmentally friendly technique in fiberglass called closed molding. This is a new "green" process of manufacturing the product. The 3000, 2250 and 1500 series skis have been static tested to exceed the requirements of TSO-C28 and have been TSO approved. EASY TO INSTALL - First time installation of hardware on the plane takes approximately 8 hours. After this initial installation, it only takes

15 MINUTES PER SKI to install or remove the skis from the airplane. Skis are available in a white, sandable gray, Cub yellow, and Torch red finish.

| SKIS | | | |
|---------------|------------------------|----------|-------|
| Series | Suspension | Part No. | Price |
| 3000 series | Strut Suspension | 05-04373 | . |
| 3000-A series | Spring Gear Suspension | 05-04374 | . |
| 2250 series | Strut Suspension | 05-04375 | . |
| 2250-A series | Spring Gear Suspension | 05-04376 | . |
| 1500 series | Strut Suspension | 05-04377 | . |
| 1500-A series | Spring Gear Suspension | 05-04378 | . |
| Tail Ski | | 05-04379 | . |
| GRAVEL GUARDS | | | |
| Series | Suspension | Part No. | Price |
| 3000 Series | Strut Suspension | 05-04380 | . |
| 2250 Series | Spring Gear Suspension | 05-04381 | . |
| 1500 Series | Strut Suspension | 05-04382 | . |

APPROVALS

The 3000 Series are STC approved for the following:

Oleo Strut Maule Models Bee Dee M-4, M-4, M-4C, M-4S, M-4T, M-4-210, M-4-210C, M-4-210S, M-4-210T, M-4-220, M-4-220C, M-4-220S, M-4-220T, M-5-210C, M-5-220C, M-5-235C, M-5-210TC, M-6-235, M-7-235, MX-7-235, M-4-180V, M-5-180C, M-5-200, M-5-210C, M-6-180, M-7-235A, M-7-235B, MX-7-160, MX-7-180, MX-7-180A, MX-7-180BA

Maule Spring Gear Models:

MX-7-180AC, MX-7-180C, MX-7-160C, M-7-235C, M-8-235

FULL LOTUS FLOATS



FLOATS SYSTEM

Full Lotus Manufacturing develops and manufactures inflatable floats for fixed wing aircraft and helicopters. They have extensive knowledge in fabric structural engineering and manufacturing, lightweight air retention membrane technology, and rotational molding.

PLEASE VISIT WWW.AIRCRAFTSPRUCE.COM FOR A COMPLETE LISTING OF LOTUS FLOATS AND PRICING

TOW PIN FOR BEECHCRAFT FAA/PMA APPROVED



Installation Eligibility:

Debonair35-A33, 35-B33, 35-33, E33, F33
Bonanza: G33, 35-C33A, E33A, F33A, F33C, N35, P35, S35, V35, V35A, V35B, 36, A36, A36TC, B36TC

Baron: 20-21-3 95-55, 95-55, 95-B55, 59-C55, D55, E55, 58, 56TC, A56TC, 58TC, 58P

RAPCO Tow Pin..... P/N 05-01625.....

REAR RUDDER PEDAL KIT



These were designed especially for RV4's and Rockets but can be used on any aircraft with rudder cables that are installed down the side skins. The pedals are 6" tall and 3-1/2" wide, 1/2" diameter 6061 anodized aluminum bar. The kit includes: pedals, floor mounting brackets, cable clamps and chains. Pedals will fold out of the way when not in use.

P/N 05-04372

BERINGER WHEEL COVER



Wheel cover made of aluminum red anodized, fully CNC machined and laser engraved. Protect external bearing and axle nut. Fixed on rim with O-ring.

For Beringer 5" wheel..... P/N 06-00956

For Beringer 6" wheel..... P/N 06-01121



BERINGER SPARE CLIPS

Stainless steel clips between wheel rim and disc. Includes: 10 left and 10 right (set for 1 wheel), procedure. Set of 20.

P/N 06-01111.....



BERINGER WHEEL O-RINGS

These O-rings need to be replaced at each tire changing. Includes: 2 large O-rings and 1 small O-ring.

For Beringer 5" wheel P/N 06-01112

For Beringer 6" wheel P/N 06-01113



TIRE TALC

Eases installation of tubes in tires. Size: 13oz.

DISCOUNT: LESS 15% ON 12

P/N 17-250.....

BERINGER TIRE CHANGING TOOL



Specific tire change tool for Beringer wheels with conical aluminum spacer to insert tire on wheel half. Plywood flanges maintain tire while positioning second wheel half with the O-ring. Includes:

Plywood flanges, bolts with butterfly nut and conical aluminum spacer
Tire change tool for BERINGER 5" wheels P/N 06-01109

Tire change tool for BERINGER 6" wheels P/N 06-01110

NITROGEN TIRE INFLATION SYSTEM 20CU, 40CU NITROGEN ACCESSORY KIT NOT FOR STRUT USE



GENTEC® Nitrogen aircraft tire inflation systems allow for easy, cost effective filling of General Aviation aircraft tires with pure Nitrogen. Due to the complex nature of construction and the severe operating conditions of aircraft tires, Michelin and other leading tire manufacturers recommend the use of Nitrogen as does the FAA. Nitrogen is a totally inert gas that will not support corrosion, oxidation or moisture within aircraft wheels and

tires. Nitrogen has a larger gas molecule than air, so low tire pressure due to allowable leakage is minimized. Nitrogen also maintains a lower thermal coefficient, thus minimizing thermal damage and extending tire life versus compressed air. Gentec Nitrogen aircraft tire inflation systems are available in two versions. The GKNAT20-TC is a 20 cubic foot high pressure nitrogen tank (empty) with stand, six foot hose; pressure reducing single stage regulator and tire inflator with resettable dial pressure gauge. The GKNAT40-TC is a 40 cubic foot high pressure nitrogen tank (empty) with stand, six foot hose; pressure reducing single stage regulator and tire inflator with resettable dial pressure gauge. Note: The kit is for someone who may already have a nitrogen cylinder and only needs the accessories.

Visit our website to locate a filling station near you.

Nitrogen Tire Inflation System 20CU..... P/N 12-01586

Nitrogen Tire Inflation System CU40..... P/N 12-01587

Nitrogen Accessory Kit- (This kit is for someone who may already have a nitrogen cylinder and only needs the accessories)

P/N 12-01588

HOMEBUILDERS TAIL SKID



The skid is 1" wide and 6" long. It is made out of 3/16" thick 347 Stainless Steel. It will accept up to a 1-3/4" O.D. 3/8" thread tie down ring. This skid will eliminate bending of the tie down ring and damage to the tail. This a must

have for training aircraft. The skid is currently mounted on several experimental and certified aircraft.

P/N 05-04383

CARBURETORS

REPLACEMENT CARBURETORS FROM KELLY AEROSPACE POWER SYSTEMS



Overhauling Lycoming and Continental carburetors & Providing FAA approved replacement parts for 20 years! Look to Kelly Aerospace Power Systems for Quality Fuel System Overhauled Units

Aircraft Spruce & Specialty, as a factory distributor, offers a carburetor exchange program covering all popular Marvel Schebler/Facet general aviation carburetors. These carburetors are overhauled to the strictest industry standards and carry a full one year warranty (from date of installation). Most carburetors are available from stock or within a week and are furnished complete with gaskets. Due to the various configurations of carburetor installations, we suggest you retain your carburetor core until receiving the exchange unit. This will enable you to transfer all external fittings and installation hardware to the new exchange unit. All cores being returned for credit shall be, as removed from the engine, complete and not disassembled. A reduction in core credit is charged for missing or damaged parts.

- Precision Carburetors
- TCM Fuel Systems
- Flow Dividers
- Fast Turn Time on Overhauls
- Unmatched Quality
- 100% calibration of fuel pumps and servos.
- Precision Fuel Servos
- Romec Fuel Pumps
- FAA/PMA Approved Replacement Parts
- Carburetor Overhaul Quick Kits
- Highly skilled/trained technicians

LYCOMING CARBURETORS

| Carb. Model | O.E.M. P/N | Vendor P/N | Our P/N | Price |
|-------------|------------|-------------|------------|-------|
| MA-3A | 61547 | A10-3103-1 | 10-03103-1 | . |
| MA-4SPA | 69250 | A10-3678-12 | 09-00984 | . |
| MA-4SPA | 72394 | A10-3678-32 | 07-00871 | . |
| MA-4-5 | 71098 | A10-3878 | 10-03878 | . |
| MA-4-5 | 71710 | A10-4164-1 | 07-00872 | . |

| Carb. Model | O.E.M. P/N | Vendor P/N | Our P/N | Price |
|-------------|------------|------------|----------|-------|
| MA-4-5 | 72740 | A10-4404 | 08-01543 | . |
| MA-4SPA | 78728 | A10-5009 | 07-00873 | . |
| MA-4SPA | 13659 | A10-5135 | 10-05135 | . |
| MA-3A | 15496 | A10-5199 | 07-00234 | . |
| MA-4SPA | 15986 | A10-5217 | 10-05217 | . |

*****NOTE*****

If you do not see your model # here please contact Aircraft Spruce Sales Department for pricing and availability.

*All prices shown are with factory acceptable exchange carburetor.

•Add . core charge on all models (except MA-4-5, MA-4-5AA, MA-6AA, MH-A-6. These have core charge of . to each price shown. Send exchange carburetor core to Aircraft Spruce. Upon factory approval of core, you will be refunded the core charge.

BE CERTAIN ALL FUEL IS REMOVED FROM THE CORE.

If Carburetor is not in stock we can have yours overhauled in 5-7 working days. Please call or email for more information.

EP

CONTINENTAL CARBURETORS

| Carb. Model | O.E.M. P/N | Part No. | Our Price |
|-------------|------------|-------------|----------------------------------|
| MA-3SPA | 40366 | A10-2848 | CALL FOR QUOTE 1-877-4-SPRUCE |
| MA-3SPA | 40796 | A10-2948 | |
| MA-4-5 | 520120 | A10-3168 | |
| MA-3SPA | 530490 | A10-3237 | |
| MA-4-5 | 535207 | A10-3649-1 | |
| MA-4-5 | 535207 | A10-3759 | |
| MA-4-5 | 538872 | A10-3859 | |
| MA-4-5 | 538872 | A10-3859-1 | |
| MA-4-5 | 539883 | A10-3965-1 | |
| MA-4-5 | 539883 | A10-3965-11 | |
| MA-4-5 | 539883 | A10-3965 | |
| MA-4-5 | 539883 | A10-3965-12 | |
| MA-3SPA | 627143 | A10-4115-1 | |
| MA-4-5 | 626789 | A10-4171 | |
| MA-4-5 | 626859 | A10-4191 | |

| Carb. Model | O.E.M. P/N | Part No. | Our Price | |
|-------------|------------|------------|----------------------------------|--|
| MA-3SPA | 627365 | A10-4233 | CALL FOR QUOTE 1-877-4-SPRUCE | |
| MA-3SPA | 627637 | A10-4240 | | |
| MA-3SPA | 628945 | A10-4439 | | |
| MA-3SPA | 629175 | A10-4457 | | |
| MA-4-5 | 633027 | A10-4893 | | |
| MA-4-5 | 641139 | A10-4893-1 | | |
| MA-3SPA | 633028 | A10-4894 | | |
| MA-3SPA | 633029 | A10-4895 | | |
| MA-3SPA | | A10-5067 | | |
| MA-3SPA | 637035 | A10-5082 | | |
| MA-3SPA | 640416 | A10-5128 | | |
| MA-3SPA | 641860 | A10-5192 | | |
| MA-4-5 | 646232 | A10-5284 | | |
| | | | | |
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| | | | | |

*All prices shown are with factory acceptable exchange carburetor. Add \$400 core charge on all models (except MA-4-5, MA-4-5AA, MA-6AA, MH-A-6. These have core charge of \$500.00) to each price shown. Send exchange carburetor core to Aircraft Spruce. Upon factory approval of core, you will be refunded the core charge.

FRANKLIN ENGINE CARBURETORS ALSO AVAILABLE. ADVISE EXACT ENGINE AND CARBURETORS ALSO AVAILABLE. ADVISE ENGINE AND CARBURETOR MODEL NUMBERS AND REQUEST QUOTATION.

CARBURETOR PARTS

MARVEL-SCHEBLER FACET REPLACEMENT CARBURETOR PARTS FROM KELLY AEROSPACE

| Mfg. Ref. | Part No. | Description. | Price |
|-----------|----------|-----------------|-------|
| CF16-A39 | 07-06601 | Gasket | . |
| CF16-A42 | 07-06602 | Gasket | . |
| CF16-A4B | 07-06603 | Gasket | . |
| CF16-A56 | 07-06604 | Gasket | . |
| CF16-B44 | 07-06605 | Gasket | . |
| CF16-B45 | 07-06606 | Gasket | . |
| CF16-B85 | 07-06608 | Gasket | . |
| CF17-372 | 07-06609 | Rod | . |
| CF17-383 | 07-06610 | Rod | . |
| CF194-580 | 07-06611 | Pump Plunger | . |
| CF194-581 | 07-06612 | Pump Plunger | . |
| CF194-591 | 07-06613 | Pump Plunger | . |
| CF194-593 | 07-06614 | Pump Plunger | . |
| CF194-605 | 07-06615 | Pump Plunger | . |
| CF233-614 | 07-06616 | Valve & Seat | . |
| CF233-615 | 07-06617 | Floater Valve | . |
| CF24-262 | 07-06618 | Spring | . |
| CF24-A10 | 07-06619 | Spring | . |
| CF24-A115 | 07-06620 | Spring | . |
| CF24-A30 | 07-06621 | Spring | . |
| CF24-A33 | 07-06622 | Spring | . |
| CF29-182 | 07-06623 | Clip | . |
| CF32-32 | 07-06624 | Shaft | . |
| CF32-35 | 07-06625 | Shaft | . |
| CF32-72 | 07-06626 | Valve | . |
| CF34-91 | 07-06627 | Valve | . |
| CF44-220 | 07-06628 | Packing | . |
| CF44-223 | 07-06629 | Packing O' Ring | . |
| CF44-224 | 07-06630 | Packing | . |
| CF44-49 | 07-06631 | Packing | . |
| CF60-260 | 07-06632 | Bushing | . |

| Mfg. Ref. | Part No. | Description. | Price |
|------------|----------|----------------|-------|
| CF60-A160 | 07-06633 | Bushing | . |
| CF778-1003 | 07-06634 | Throttle Shaft | . |
| CF778-1004 | 07-06635 | Throttle Shaft | . |
| CF15-483 | 07-06666 | Screw | . |
| CF15-58 | 07-06667 | Screw | . |
| CF15-A14 | 07-06668 | Screw | . |
| CF15-A23 | 07-06669 | Screw | . |
| CF15-B108 | 07-06670 | Screw | . |
| CF15-B109 | 07-06671 | Screw | . |
| CF15-B98 | 07-06672 | Screw | . |
| CF16-222 | 07-06673 | Gasket | . |
| CF16-224 | 07-06674 | Gasket | . |
| CF16-625 | 07-06675 | Gasket Kit | . |
| CF16-646 | 07-06677 | Gasket Kit | . |
| CF16-653 | 07-06678 | Gasket Kit | . |
| CF16-676 | 07-06679 | Gasket Kit | . |
| CF16-696 | 07-06680 | Gasket Kit | . |
| CF16-713 | 07-06681 | Gasket Kit | . |
| CF16-735 | 07-06682 | Gasket Kit | . |
| CF16-A107 | 07-06683 | Gasket | . |
| CF16-A108 | 07-06684 | Gasket | . |
| CF16-A16 | 07-06685 | Gasket | . |
| CF16-A28 | 07-06686 | Gasket | . |
| CF16-A30 | 07-06687 | Gasket | . |
| CF16-A31 | 07-06688 | Gasket | . |
| CF16-A32 | 07-06689 | Gasket | . |
| CF16-A36 | 07-06690 | Gasket | . |
| CF82-1 | 07-06691 | Pin | . |
| CF82-11 | 07-06692 | Pin-Cotter | . |
| CF82-14 | 07-06693 | Pin-Cotter | . |
| CF99-44 | 07-06694 | Plug | . |

| Mfg. Ref. | Part No. | Description. | Price |
|------------|----------|----------------|-------|
| CF99-8 | 07-06695 | Plug | . |
| CF47-850 | 07-06696 | Nozzle | . |
| CF47-851 | 07-06697 | Nozzle | . |
| CF47-852 | 07-06699 | Nozzle | . |
| CF778-1005 | 07-06636 | Throttle Shaft | . |
| CF778-1006 | 07-06637 | Throttle Shaft | . |
| CF778-1007 | 07-06638 | Throttle Shaft | . |
| CF778-1008 | 07-06639 | Throttle Shaft | . |
| CF78-121 | 07-06647 | Washer | . |
| CF78-388 | 07-06648 | Washer | . |
| CF78-A109 | 07-06649 | Washer | . |
| CF78-A110 | 07-06650 | Washer | . |
| CF78-A111 | 07-06651 | Washer | . |
| CF78-A40 | 07-06652 | Washer | . |
| CF78-A97 | 07-06653 | Washer | . |
| CF81-311 | 07-06654 | Nut | . |
| CF13-1519 | 07-06655 | Throttle Shaft | . |
| CF13-1520 | 07-06656 | Throttle Shaft | . |
| CF13-1521 | 07-06657 | Throttle Shaft | . |
| CF13-1522 | 07-06658 | Throttle Shaft | . |
| CF13-1523 | 07-06659 | Throttle Shaft | . |
| CF13-1531 | 07-06660 | Throttle Shaft | . |
| CF13-1533 | 07-06661 | Throttle Shaft | . |
| CF155-226 | 07-06662 | Lever | . |
| CF155-307 | 07-06663 | Lever | . |
| CF15-126 | 07-06664 | Screw | . |
| CF43-648 | 07-06702 | Needle | . |
| CF43-564 | 07-06701 | Needle | . |

EP

REPLACEMENT CARBURETOR VENTURI'S (ONE PIECE)

These one piece Venturis replace old type primary and main Venturis in Marvel-Schebler carburetors. Order by new Venturi part number.

| Old Main Venturi | New 1-Piece Venturi | Our Price | Old Main Venturi | New 1-Piece Venturi | Our Price |
|------------------|---------------------|-----------|------------------|---------------------|-----------|
| 46-462 | 46-F7 | . | 46-A2 | 46-F10 | . |
| 46-486 | 46-F8 | . | 46-A70 | 46-F12 | . |

FLOAT NEEDLE SEAT DRIVER



This Float Needle Seat Driver is applicable to Marvel-Schebler MA3 and MA4 carburetors and is quality made of alloy steel. It facilitates the easy removal of needle valve seats, prevents damage to the main casting and the new seat during installation, and insures proper torque application. Features 7/16" hex drive fitting. P/N 12-30190.....

BENDIX/PRECISION RSA

FUEL SERVOS & FLOW DIVIDERS

- Bendix/Precision (RSA-5, RSA-7da1, RSA-10 Overhaul/Exchange).
- Bendix/Precision (Flow Dividers Overhaul/Exchange).
- TMC Complete Fuel Injection Systems (IO-360, IO-550, L/T/SIO-360, T/SIO-520, GTSIO-520, TSI Overhaul Exchange).
- TCM Individual Fuel Injection Components Throttle Assemblies, Control Assemblies (without throttle Pumps, Manifold Valves, Pressure Regulators, No Assemblies (cleaning, rejetting, calibrating).
- FAA/PMA Replacement Parts.

Call or visit our website at: www.aircraftspruce.com for more info.

REPLACEMENT FLOAT KITS



1984 FAA Service Bulletin A1-84 recommends replacing old Marvel-Schebler floats with the following float kits which feature metal floats to replace old plastic floats:

- Kit 666-915** - For MA3, MA3-SPA, MA4-SPA P/N 07-00677
- Kit 666-916** - For MA4-5, MA5, MA6 P/N 07-00678
- Kit 666-917** - For HA-6 P/N 07-00679
- Needle and Seats for MA3-4 #233-615 P/N 07-06617
- Needle and Seats for MA4-5 #233-614 P/N 07-06616

REPAIR KITS & PARTS FOR COMMON MARVEL-SCHEBLER CARBURETORS

| Lycoming No. | Marvel-Schebler | | Major Repair Kit Price |
|--------------|-----------------|------------|------------------------|
| | Kit P/N | Carb P/N | |
| 62289 | 286-1628 | 10-3346-1 | . |
| 69250 | 286-1624 | 10-3678-12 | . |
| 62830 | 286-1630 | 10-3565-1 | . |

NOTE: Many Marvel-Schebler replacement parts are no longer available from Facet. On items not priced in table above, order a minor or major repair kit. Major kits are priced above and minor kits are quoted on request.

CARBURETOR HEAT BOX PARTS



Unique Elastomer Bearing Replaces Needle Bearing -

McFarlane's elastomer bearing is assembled with tension between the mating surfaces. This tension prevents micro-movement and its related metal erosion. The bearing contact area that transfers vibration motion from the heat box to the butterfly shaft is hundreds of times greater than that of the original needle bearing. This large surface effectively prevents localized metal erosion. • Absorbs shaft and butterfly vibration • Eliminates needle bearing failures • Increases service life of all components • Direct replacement for original parts. **Proven Design:** • Tested to over 700,000 cycles while exposed to avgas, heat and vibration without any change in performance • Extremely rugged and wear resistant in high temperature and fuel environments. **Convenient:** • Discontinued part numbers through the factory are now manufactured by McFarlane • Also available in kits containing the shaft, arm, bearing housings, monel rivets, and roll pin

CESSNA SHAFT

| Description | Part No. | Price |
|--|----------|-------|
| Cessna Shaft MC0450068-2 Model: FA152 Serial No: FA1520337 thru FA1520425 | 05-04430 | . |
| Cessna Shaft MC0550180-16 Model: 172B,C Serial No: 17247747 thru 17249544 | 05-04431 | . |
| Cessna Shaft MC0550180-28 Model: F172D,E,F, G Serial No: F172-0001 thru F172-0319 | 05-04432 | . |
| Cessna Shaft MC0509068-6 Model: 172Q Serial No: 17275869 thru 17276516 | 05-04433 | . |
| Cessna Shaft MC1752078-4 Model: 177A,B Serial No: 17701165 thru 17702752 | 05-04434 | . |
| Cessna Shaft MC0750112 Model: 180° Serial No: 30000 thru 32150 | 05-04435 | . |
| Cessna Shaft MC0750126-19 Model: 180°, 180A,B Serial No: 32151 thru 50661 | 05-04436 | . |
| Cessna Shaft MC0750133-8 Model: 175, 175A Serial No: 55001 thru 56777 | 05-04437 | . |
| Cessna Shaft MC0750173-3 Model: 185, 185A,B, C,D,E/ A185E* Serial No: 185-0001 thru 185-1300 | 05-04438 | . |
| Cessna Shaft MC0750173-4 Model: A185E* Serial No: 185-1301 thru 18501832 | 05-04439 | . |

*Partial model eligibility Partial model eligibility

CESSNA ARM

| Description | Part No. | Price |
|---|----------|-------|
| Cessna Arm MCS2280-8-00 Model: 152, A152, F152, FA152 Serial No: 15279406 thru 15286033 A152 A1520735 thru A1521049 F152 F15201429 thru F1520198 FA152 FA1520337 thru FA1520425 | 05-04440 | . |
| Cessna Arm MC0750111-19 | 05-04441 | . |
| Cessna Arm MCS2280-3-157 | 05-04442 | . |

CESSNA BEARING

| Description | Part No. | Price |
|---|----------|-------|
| Cessna Bearing HSG MC0750113-1 Model: 152 Serial No: MC0750113-1 | 05-04443 | . |
| Cessna Bearing HSG MC0750113-3 Model: 172Q Serial No: MC0750113-3 | 05-04444 | . |

CARBURETORS

CARBURETOR OVERHAUL QUICK KITS

Kelly Aerospace "Quick Kits" are easy to use, and are designed to save you time and money. Quick Kits include not only the recommended replacement parts used in every overhaul, but the additional parts used by all fuel professionals to insure the job is done right.

Kits include (where applicable): Throttle shaft lever, throttle shaft, throttle adjusting screw, throttle valve screws, inlet strainer screws, throttle body screws, mixture control lever screw, gasket kit, pump connection rod, throttle adjustment spring, throttle opening spring, idle adjustment spring, float lever shaft, pump stem, throttle shaft bushings, inlet strainer washer, pump stem retainer washer, mixture control lever washer, throttle body washers, throttle lever lock nut, float shaft cotter pin, throttle nut cotter pin, pump lever, pump plunger assembly and float valve seat assembly.

| KIT P/N | PRICE | Franklin Carburetors | | Continental Carburetors | | Lycoming Carburetors | | Lycoming Carburetors | |
|----------|-------|--------------------------------|-----------------|-----------------------------|-----------------|----------------------|-----------------|----------------------|-----------------|
| | | P/N | "Quick Kit" P/N | P/N | "Quick Kit" P/N | P/N | "Quick Kit" P/N | P/N | "Quick Kit" P/N |
| CF286-00 | . | 10-2971-P | CF286-02 | 10-4457 | CF286-02 | 10-3856-1 | CF286-06 | 10-5142 | CF286-01 |
| CF286-01 | . | 10-3007 | CF286-06 | 10-4893 | CF286-05 | 10-3856-11 | CF286-06 | 10-5180 | CF286-10 |
| CF286-02 | . | 10-3063-2 | CF286-06 | 10-4893-1 | CF286-05 | 10-3856-12 | CF286-06 | 10-5189 | CF286-10 |
| CF286-03 | . | 10-3148-1 | CF286-06 | 10-4894 | CF286-02 | 10-3878 | CF286-08 | 10-5193 | CF286-08 |
| CF286-04 | . | 10-3479 | CF286-06 | 10-4894-1 | CF286-02 | 10-4057 | CF286-09 | 10-5199 | CF286-00 |
| CF286-05 | . | 10-5069 | CF286-02 | 10-4895 | CF286-03 | 10-4057-1 | CF286-09 | 10-5206 | CF286-10 |
| CF286-06 | . | 10-5093 | CF286-00 | 10-4895-1 | CF286-03 | 10-4164 | CF286-08 | 10-5206-1 | CF286-10 |
| CF286-07 | . | Continental Carburetors | | 10-5067 | CF286-02 | 10-4164-1 | CF286-07 | 10-5206-11 | CF286-10 |
| CF286-08 | . | Continental Carburetors | | 10-5082 | CF286-02 | 10-4404 | CF286-09 | 10-5210 | CF286-10 |
| CF286-09 | . | Continental Carburetors | | 10-5128 | CF286-02 | 10-4404-1 | CF286-09 | 10-5217 | CF286-04 |
| CF286-10 | . | Continental Carburetors | | 10-5192 | CF286-05 | 10-4910 | CF286-04 | 10-5219 | CF286-11 |
| CF286-11 | . | Continental Carburetors | | 10-5284 | CF286-05 | 10-4910-1 | CF286-04 | 10-5220-E | CF286-01 |
| CF286-12 | . | Continental Carburetors | | Lycoming Carburetors | | 10-4953 | CF286-00 | 10-5220 | CF286-01 |
| | | Continental Carburetors | | Lycoming Carburetors | | 10-4978-1 | CF286-01 | 10-5221 | CF286-12 |
| | | Continental Carburetors | | Lycoming Carburetors | | 10-5009 | CF286-04 | 10-5224 | CF286-11 |
| | | Continental Carburetors | | Lycoming Carburetors | | 10-5009N | CF286-04 | 10-5227 | CF286-12 |
| | | Continental Carburetors | | Lycoming Carburetors | | 10-5034 | CF286-07 | 10-5230 | CF286-11 |
| | | Continental Carburetors | | Lycoming Carburetors | | 10-5042 | CF286-00 | 10-5235 | CF286-11 |
| | | Continental Carburetors | | Lycoming Carburetors | | 10-5045 | CF286-10 | 10-5253 | CF286-11 |
| | | Continental Carburetors | | Lycoming Carburetors | | 10-5045-1 | CF286-10 | 10-5255 | CF286-11 |
| | | Continental Carburetors | | Lycoming Carburetors | | 10-5050 | CF286-01 | 10-5257 | CF286-01 |
| | | Continental Carburetors | | Lycoming Carburetors | | 10-5054 | CF286-09 | 10-5267 | CF286-01 |
| | | Continental Carburetors | | Lycoming Carburetors | | 10-5062 | CF286-04 | 10-5282 | CF286-11 |
| | | Continental Carburetors | | Lycoming Carburetors | | 10-5092 | CF286-10 | 10-5283 | CF286-11 |
| | | Continental Carburetors | | Lycoming Carburetors | | 10-5126 | CF286-01 | 10-5288 | CF286-08 |
| | | Continental Carburetors | | Lycoming Carburetors | | 10-5135 | CF286-04 | 10-6014 | CF286-11 |

See which Part No. is for your application in the charts to the right.

EP

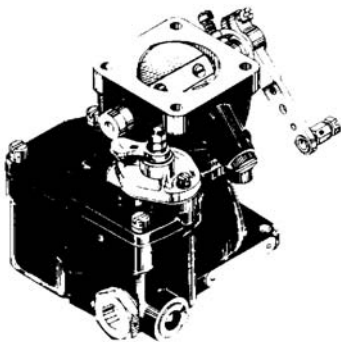
ELLISON CARBURETORS



Ellison variable venturi throttle body injectors provide reliable fuel metering for a variety of homebuilt engine applications. Features include uniform fuel distribution, inverted flight operation, few moving parts, instantaneous response, easy starting, light weight, and low maintenance. When ordering, specify: Engine make, engine model/HP and displacement and RPM.

| MODEL | EFS4-5 | EFS-3A |
|------------------------------|---------------------------------|-------------------------|
| Part Number | 07-00961 | 07-00959 |
| Airflow Capacity* | 400 CFM | |
| Fuel Regulation | Dual Value Diaphragm Controlled | SV Diaphragm Controlled |
| Application | 180-260 HP Aircraft | >80 HP |
| Fuel Pressure Requirements** | 2-6 PSI | 1/2 - 3 PSI |
| Controllable Mixture | Yes | Yes |
| Fuel Fitting | 3/8 Flared Tube | 3/8 Flared Tube |

BENDIX STROMBERG NA-S3A1 CARBURETOR OVERHAUL PARTS FOR NA-S3A1 CARBURETOR



The NA-S3A1 carburetor is no longer in production. Only the parts listed are carried in stock. Others may be special ordered. Originally used on Cont. A-65, A-75, A-80, C-75, C-85 and C-90 engines.

| | |
|--|--------------------|
| Gasket & Ring Set (Incl. gaskets for under seat) | P/N 07-02200 |
| P-14222 Needle(Steel) & P17247 Set | P/N 07-14222 |
| Needle (Delrin) | P/N 2523047 |
| Metering Jet (C-85) | P/N 07-00684 |
| Metering Jet (A-65) | P/N 07-00685 |

Throttle Shaft (Ref. #34 in Manual) not available.

STROMBERG NA-S3A1 CARBURETOR OVERHAUL MANUAL

P/N 07-02400

*The P/N 2523047 needle is still available but recent testing has determined that neoprene needles can expand when used with 100 LL avgas and unleaded auto fuels leading to engine damage from excessively lean operation. Recommended substitute is the P/N 2523047 Delrin needle or P14222 Steel Needle. Use P/N 390077 needle at your own discretion only.

BING CARBURETORS



COMPLETE CARBURETORS – TYPE 54

To Order, Specify:

1. Model indicated by engine number 277, 377, 447, 503, or 532.
2. With intake silencer or Without intake silencer.
3. Single Carb or Dual Carb.
4. Hand Choke or Remote Choke.

Model # 54/36/2040

P/N 07-00303

TYPE 54 REBUILD KIT

- #17 Top O Ring
- #29 Bowl Gasket
- #25 Hinge Pin
- #21 Cable Grommet
- #7 Air Screw O Ring
- #26 Float Needle
- #10 Sieve Sleeve (Screen)

P/N 07-00304

TYPE 54 FIX-IT KIT

- #12 New Spring Cup
- #56 Jet Needle O Ring
- #11 Clip

P/N 07-00305

COMPLETE CARBURETORS – TYPE 84

To Order, Specify:

1. Model indicated by engine number 277, 377, 447, 503, or 532.
2. With intake silencer or Without intake silencer.
3. Single Carb or Dual Carb.
4. Hand Choke or Remote Choke.

Model # 84/32/3437

P/N 07-00306

TYPE 84 REBUILD KIT

- #17 Top O Ring
- #29 Bowl Gasket
- #25 Hinge Pin
- #21 Cable Grommet
- #7 Air Screw O Ring
- #26 Float Needle
- #10 Sieve Sleeve (Screen)

P/N 07-00307



ROTAX FLOAT & BOWL KIT

This float and bowl kit replaces a single float system. Includes float needle valve, clip float needle, float pin, float bracket, float chamber, and the float.

P/N 261-010

BING CARBURETOR ACCESSORIES

- Bing Remote Choke Kit (w/8' cable) P/N 07-00308
- Bing Remote Choke Kit (w/o cable) P/N 07-00309
- Bing Aircraft Parts manual P/N 07-00310

CARBURETOR SYNCHRONIZATION



CARMATE

Quick & easy synchronizing by direct comparison of a set of carbs / Fuel Injector throttle bodies. Range adjustable from 2 to 0,05cmHg per LED. Hook up 2 or 5 cylinder with the optional adapter kit.

P/N 07-01265

SYNCHROMATE

Precise synchronizing by direct comparison of a set of carbs / Fuel Injection throttle bodies. Fixed resolution of 0,5cmHg. Includes absolute vacuum & 'wireless' RPM measurement. Hook up 3 or 4 cylinders with the optional adapter kit.

PN 07-01266

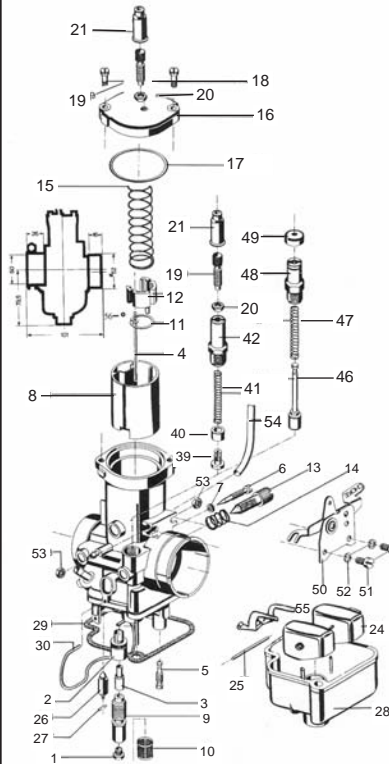


4-CHANNEL ADAPTER KIT

Converts the SynchroMate or CarbMate into a 4 carb/throttle valve synchroniser. This easy-to-mount & easy-to-use kit allows connection of SynchroMate's or CarbMate 2 channels (tubes) to 4 carbs / throttle valves at once.

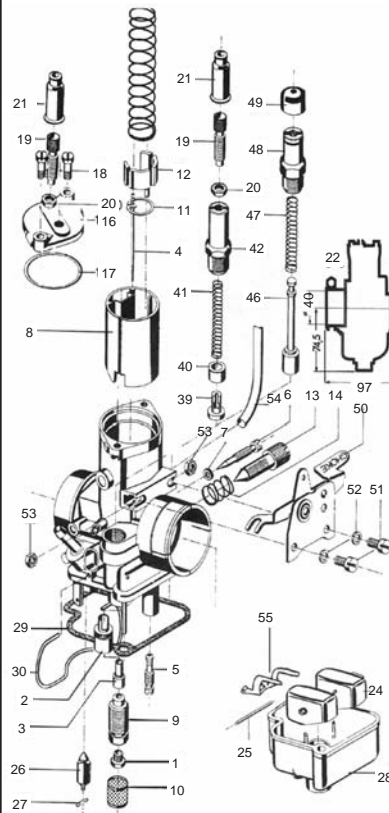
PN 07-01267

REPLACEMENT PARTS – TYPE 54



| No. | Part No. | Description | Price |
|-----|-------------|--------------------------|-------|
| 1 | 268-978-998 | Main Jet | . |
| 2 | 251-554 | Atomizer | . |
| 3 | 963-691-699 | Needle Jet | . |
| 4 | 963-711-719 | Jet Needle | . |
| 5 | 963-140-147 | Idler Jet | . |
| 6 | 963-155 | Air Screw | . |
| 7 | 831-710 | O Ring | . |
| 8 | 963-679 | Piston | . |
| 9 | 963-700 | Mixing Tube | . |
| 10 | 261-625 | Sieve Sleeve | . |
| 11 | 963-500 | Clip | . |
| 12 | 827-345 | Stock Spring Cup | . |
| 12 | 827-347 | New Style Spring Cup | . |
| 13 | 963-160 | Mix Screw | . |
| 14 | 938-640 | Spring | . |
| 15 | 938-655 | Slide Spring | . |
| 16 | 963-720 | Cover Plate | . |
| 17 | 831-450 | O Ring | . |
| 18 | 241-430 | Screw | . |
| 19 | 241-440 | Adjuster | . |
| 20 | 942-541 | Nut | . |
| 21 | 260-370 | Grommet | . |
| 24 | 861-181 | Indep. Float | . |
| 25 | 929-700 | Pivot Pin | . |
| 26 | 261-705 | Float Needle | . |
| 27 | 261-710 | Clip | . |
| 28 | 261-010 | Bowl Kit (bowl,24-27,55) | . |
| 29 | 830-720 | Gasket | . |
| 30 | 963-180 | Bowl Clip | . |
| 39 | 963-740 | Piston | . |
| 40 | 268-850 | Sleeve | . |
| 41 | 661-050 | Spring | . |
| 42 | 963-750 | Housing | . |
| 46 | 268-847 | Piston | . |
| 47 | 239-730 | Spring | . |
| 48 | 261-770 | Housing | . |
| 49 | 260-490 | Rubber Cap | . |
| 50 | 261-755 | Choke Lever | . |
| 51 | 240-791 | Screw(51) & | . |
| 52 | 945-750 | Washer(52) | . |
| 53 | 261-200 | Nut | . |
| 54 | 256-035 | Vent Tube | . |
| 55 | 861-190 | Float Arm | . |
| 56 | 831-715 | Jet Needle O Ring | . |

REPLACEMENT PARTS – TYPE 84



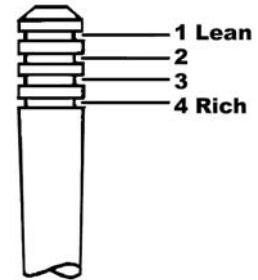
| No. | Part No. | Description | Price |
|-----|----------|----------------|-------|
| 1 | 268-980 | Main Jet 135 | . |
| 2 | 261-692 | Atomizer | . |
| 3 | 261-606 | Needle Jet 262 | . |
| 4 | 261-643 | Jet Needle 8H1 | . |
| 5 | 963-140 | Idler Jet 50 | . |
| 6 | 963-155 | Air Screw | . |
| 7 | 831-710 | O Ring | . |
| 8 | 261-635 | Piston | . |
| 9 | 963-130 | Jet Stock | . |
| 10 | 261-625 | Screen | . |
| 11 | 261-650 | Holding Plate | . |
| 12 | 227-635 | Spring Cup | . |
| 13 | 963-160 | Mix Screw | . |
| 14 | 938-640 | Spring | . |
| 15 | 239-700 | Slide Spring | . |
| 16 | 261-660 | Cover | . |
| 17 | 261-670 | O Ring | . |
| 18 | 241-430 | Screw | . |
| 19 | 241-440 | Adjust. Screw | . |
| 20 | 942-541 | Nut | . |
| 21 | 260-370 | Grommet | . |
| 24 | 963-192 | Float | . |
| 25 | 929-700 | Pin | . |
| 26 | 261-705 | Float Needle | . |
| 27 | 261-710 | Clip | . |
| 28 | 963-170 | Bowl | . |
| 29 | 830-720 | Gasket | . |
| 30 | 963-180 | Bowl Clip | . |
| 39 | 963-740 | Piston | . |
| 40 | 268-850 | Sleeve | . |
| 41 | 661-050 | Spring | . |
| 42 | 963-750 | Housing | . |
| 46 | 268-847 | Piston | . |
| 47 | 239-730 | Spring | . |
| 48 | 261-770 | Housing | . |
| 49 | 260-490 | Rubber Cap | . |
| 50 | 261-750 | Lever | . |
| 51 | 240-791 | Screw(51) & | . |
| 52 | 945-750 | Washer(52) | . |
| 53 | 261-200 | Nut | . |
| 54 | 256-033 | Vent Tube | . |

CARBURETOR PARTS



CARBURETOR JETTING CHART FOR ROTAX® UL ENGINES

Use this chart to identify part number you need, then use bottom chart to select correct part number to order.



1 = Without Rotax® intake silencer kit, with K&N RC1200 air filter, with or without Rotax® after muffler kit.

2 = With Rotax® intake silencer kit, with K&N CM0300 air filter, with or without Rotax® after muffler kit.

3 = With Rotax® dual intake silencer kit, with K&N RC1200 air filters, with or without Rotax® after muffler kit.

| ROTAX® ENGINE | MAIN JET | IDLER JET | NEEDLE JET | JET NEEDLE | CLIP POSITION | AIR SCREW |
|-------------------------|----------|-----------|------------|------------|---------------|-----------|
| 2771 | 148 | 45 | 2.72 | 8L2 | 2 | 1 |
| 2772 | 140 | 45 | 2.72 | 8L2 | 2 | 1 |
| 3771 | 165 | 45 | 2.70 | 8O2 | 2 | .5 |
| 3772 | 155 | 45 | 2.70 | 8O2 | 2 | .5 |
| 4471 | 165 | 45 | 2.70 | 15K2 | 2 | .5 |
| 4472 | 155 | 45 | 2.70 | 15K2 | 2 | .5 |
| 447DC1 | 135 | 50 | 2.70 | 6G1 | 3 | 1 |
| 447DC3 | 128 | 50 | 2.68 | 15K2 | 2 | 1 |
| 503SC1 Up to #3785371 | 180 | 45 | 2.74 | 8G2 | 3 | .5 |
| 503SC2 Up to #3785371 | 158 | 45 | 2.74 | 6H2 | 3 | .5 |
| 503SC1 From #3785372 Up | 185 | 45 | 2.72 | 15K2 | 3 | .5 |
| 503SC2 From #3785372 Up | 165 | 45 | 2.70 | 15K2 | 3 | .5 |
| 503DC1 | 158 | 45 | 2.74 | 8L2 | 1 | .5 |
| 503DC3 | 148 | 45 | 2.68 | 11K2 | 2 | 1 |
| 532SC1 | 195 | 55 | 2.74 | 15K2 | 3 | 1 |
| 532SC3 | 170 | 55 | 2.74 | 15K2 | 3 | 1 |
| 532DC1 | 165 | 55 | 2.72 | 11G2 | 3 | 1 |
| 532DC3 | 145 | 55 | 2.68 | 15K2 | 3 | 1 |
| 5821 | 165 | 55 | 2.72 | 11G2 | 3 | 1 |
| 5823 | 145 | 55 | 2.68 | 15K2 | 3 | 1 |

KWIK TUNE FOR ROTAX ENGINES



An EAA member called his brother-in-law to ask if he knew of a way to hold the spring and plastic cup while changing the jet needle clip setting on a Rotax engine. Finding no solution, he decided to invent one; the handy Kwik Tune, a timesaving tool he launched at Sun 'n Fun. Kwik Tune helps remove and reinstall the aircraft throttle cable, cover, spring, and slide in a Bing carburetor. P/N 08-05206.....

SILVERHAWK EX FUEL INJECTION SYSTEMS



The Silver Hawk EX, non-certified Fuel Injection System is proven technology drawn from decades of fuel metering engineering by Precision Airmotive. Manufactured as experimental, the new Silver Hawk kit provides experimental pilots with precise, dependable, and reliable fuel metering. Just what you'd expect from Precision Airmotive.

At a price that will make you soar. Manufactured using the highest quality materials and components, the Silver Hawk EX features a machined finish with clear coat anodize. Designed for these major engine manufacturer applications: Lycoming 320, 360, & 540 series; Continental 470 series; Superior and others.

- Specifically engineered and built to meet the demands of aviation's growing experimental segment.
- Precision Airmotive appointed worldwide network of factory authorized product support centers
- Backed by a Precision warranty program.

| Model No. | Description | Part No. | Price |
|-----------|--|----------|-------|
| EX320-1 | Application: Lycoming O-320 and IO-320 engines with 150/160 HP | 07-00773 | . |
| EX360-1 | Application: Lycoming O-360 and IO-360 parallel valve engines with 160/180 HP Superior O-360 and IO-360 parallel valve engines with 180 HP | 07-00774 | . |
| EX360-2 | Application: Lycoming O-360 and IO-360 angle valve engines with 200 HP | 07-00775 | . |
| EX540-1 | Application: Lycoming O-540 and IO-540 parallel valve engines with 235-260 HP Continental O-470 engines | 07-00776 | . |

MAIN JET



- 125 = Part No. R268-978
- 128 = Part No. R261-085
- 130 = Part No. R268-979
- 135 = Part No. R268-980
- 138 = Part No. R268-998
- 140 = Part No. R268-981
- 145 = Part No. R268-982
- 148 = Part No. R268-995
- 150 = Part No. R268-983
- 155 = Part No. R268-984
- 158 = Part No. R268-996
- 160 = Part No. R268-985
- 162 = Part No. R268-990
- 165 = Part No. R268-986
- 170 = Part No. R268-987
- 175 = Part No. R268-988
- 180 = Part No. R268-989
- 185 = Part No. R261-080
- 190 = Part No. R261-084
- 195 = Part No. R268-992
- 200 = Part No. R261-082
- 205 = Part No. R261-087
- 220 = Part No. R261-081

IDLER JET



- 30 = Part No. R963-141
- 35 = Part No. R963-143
- 40 = Part No. R963-142
- 45 = Part No. R963-144
- 50 = Part No. R963-140
- 55 = Part No. R963-147
- 60 = Part No. R963-145
- 65 = Part No. R963-146

NEEDLE JET



- 2.62 = Part No. R261-606
- 2.68 = Part No. R963-691
- 2.70 = Part No. R963-698
- 2.72 = Part No. R963-697
- 2.74 = Part No. R963-699
- 2.76 = Part No. R963-693
- 2.78 = Part No. R963-696
- 2.80 = Part No. R963-695
- 2.82 = Part No. R963-694
- 2.94 = Part No. R961-022

JET NEEDLE



- 2H2 = Part No. R963-717
- 4E2 = Part No. R963-716
- 6G1 = Part No. R261-642
- 6H2 = Part No. R963-719
- 8G2 = Part No. R963-712
- 8H1 = Part No. R261-643
- 8L2 = Part No. R963-714
- 8O2 = Part No. R963-711
- 1O = Part No. R961-045
- 11G2 = Part No. R961-043
- 11K2 = Part No. R961-044
- 15K2 = Part No. R963-718

NEEDLE CLIP



P/N 07-00693
 Lower numbers indicate smaller jet size or opening.
 Low numbers = lean.
 High numbers = rich.
 First needle number denotes mixture above half-throttle.
 Needle letter denotes mixture below half-throttle.

FUEL PUMPS

BUZZ PUMP AC2001



The Buzz Pump AC2001 is lightweight positive displacement, high volume, manual dual stroke auxiliary fuel pump for experimental aircraft. The Buzz Pump has capacity to operate aircraft engines as large as 300 HP models at full power. Eliminates the connection to a complicated electrical system

and expensive high-pressure electrical fuel pump. The Buzz Pump is constructed with high quality engineered materials and components. It will bolt directly into standard Christen and D2 pump bolt patterns.

Specifications: • Weight: 2.4 lbs. • Aluminum billet housing construction • Double O-ring shaft seals • Triple precision bearing shaft support • Metal valves for long life • Pressure setting relief valve: 5-25psi • 90° stroke angle for comfortable operation • Housing dia.: 3.4" x 4.5" total length • Pump handle length: 4.5" • One input port and one output port @ 180° • 1/4-18 NPT tapped holes for fittings • Standard finish is clear anodize (light gray color) • Buzz Filter Sump AC2002, can bolt directly to the pump with an AN911-6D threaded nipple (not included)
P/N 07-00654

BUZZ FILTER SUMP



The Buzz Filter Sump, AC2002 is a fuel filter/moisture sump for high-pressure applications, 50psi ideally suited for precision fuel injection systems. The Buzz filter/sump can mount directly to the Buzz Pump AC2001 or to the fuselage or firewall. Easy to replace fuel filter. The Buzz Filter/Sump is engineered and constructed with high quality engineered materials and components and will mount directly to the Buzz Pump AC2001, with an AN911-6D threaded nipple.

Specifications: • High-pressure application to 50psi • Weight: 13 oz. • Aluminum billet housing construction • Large O-ring sump seal • 1/4-18 NPT tapped holes for fittings • CG-12 Fram filter with easy to replace insertion chamfer • Standard finish is clear anodize (light gray color) • Curtis drain fitting • AN fittings not included.
P/N 07-00655

MIKUNI FUEL PUMP



Genuine Mikuni fuel pumps. Replace original parts on Rotax®, Hirth, & many other engines.

Single Pump P/N 07-00777
Dual Pump P/N 07-00778
Single Pump P/N 07-01011
Dual Pump P/N 07-01010

BING FUEL PUMP



Bing High-capacity pump. Use when tank is more than 5' away or significantly lower than engine. P/N 07-00779
Diaphragm Repair kit... P/N 07-01007
Bing Low Vol. fuel pump. P/N 07-01008

Repair Kit for Low Vol pump. P/N 07-01009

ANDAIR FUEL BOOST PUMPS



The high pressure fuel boost pump from Andair features a brushless motor which is light weight, powerful, and reliable. The pump components are D2 tool steel providing unequalled wear characteristics. The model PX375-40A-5-25 boost pump is furnished with a BLX-150 controller that is needed to drive the pump. This pump was designed to meet the requirements of an engine such as the Lycoming IO-360 at full power. The model XP375-40A-5 has none of the pressure relief or bypass features of the boost pump and is designed for a smoke system or transfer fuel from tank to tank. This pump is furnished with a BLX-165 controller. **Features:** * Integral bypass and pressure relief valve. * 11-14V DC, 6 amps max * Flow: 16 GPH @ 25 PSI * Open Flow: 56 GPH @ 8 PSI * Pressure drop in bypass mode @ 36 GPH: <0.5 PSI * No flow max pressure: 26 PSI * Weight: 460g (16.23 oz) * Soft Start - Continuous Duty * Self Priming to 10ft (3M) Head through 3/8" tube. * Aerospace Grade Aluminium Body. * AN-6 male fittings. * Mounting bracket included.

Fuel Boost Pump P/N 07-01334
Smoke Transfer Pump..... P/N 07-01335

FACET FUEL-IT



The Facet FUEL-IT electric transfer fuel pump is the perfect tool to efficiently pump 1 gallon of gas per minute, 15' of minimum dry lift, quickly and easily from your gas can or canister into your boat, ATV, snowmobile, garden or compact tractor or even your automobile. It's also handy for filling up generators, rotor tillers or everyday lawn mowers.

The Facet FUEL-IT pump eliminates lifting and holding up heavy gas cans. It's environmentally friendly because it helps you put the gas in the tank and not on the ground. P/N 08-06287
Rechargeable Battery 12V P/N 08-06288

TEMPEST LYCOMING & TCM FUEL PUMPS



The Early Model Lycoming Fuel Pump The New Continental Pump

| MMO | Description | P/N | Price |
|---|------------------------|------------|-------|
| Overhauled Lycoming & TCM Diaphragm Fuel Pumps | | | |
| 40174 | Fuel Pump - Overhauled | 05-02530 | . |
| 40296 | Fuel Pump - Overhauled | 05-02531 | . |
| 40595 | Fuel Pump - Overhauled | 05-19015 | . |
| 41234 | Fuel Pump - Overhauled | 05-02532 | . |
| 41270 | Fuel Pump - Overhauled | 05-02533 | . |
| 41271 | Fuel Pump - Overhauled | 05-02534 | . |
| 41272 | Fuel Pump - Overhauled | 05-02536 | . |
| 41452 | Fuel Pump - Overhauled | 05-02537 | . |
| 41617 | Fuel Pump - Overhauled | 05-02538 | . |
| 41812 | Fuel Pump - Overhauled | 05-02539 | . |
| 75246 | Fuel Pump - Overhauled | 05-02540 | . |
| 75247 | Fuel Pump - Overhauled | 05-02541 | . |
| 103396-01 | Fuel Pump - Overhauled | 05-02542 | . |
| 103586-01 | Fuel Pump - Overhauled | 05-02543 | . |
| LW14282 | Fuel Pump - Overhauled | 05-02544 | . |
| LW15399 | Fuel Pump - Overhauled | 08-15399 | . |
| LW15472 | Fuel Pump - Overhauled | 05-19000 | . |
| LW15473 | Fuel Pump - Overhauled | 05-19010 | . |
| LW16335 | Fuel Pump - Overhauled | 05-02545 | . |
| LW16775 | Fuel Pump - Overhauled | 05-02546 | . |
| LW16947 | Fuel Pump - Overhauled | 05-02547 | . |
| RJ4033 | Fuel Pump - Overhauled | 05-02548 | . |
| R00253-1 | Fuel Pump - Overhauled | 05-02549 | . |
| R00253-2 | Fuel Pump - Overhauled | 05-02551 | . |
| R00253-501 | Fuel Pump - Overhauled | 05-02552 | . |
| R00253-502 | Fuel Pump - Overhauled | 05-02554 | . |
| AF1572 | Fuel Pump - Overhauled | 05-02555-1 | . |
| AF15473 | Fuel Pump - Overhauled | 05-02556-1 | . |
| New Lycoming Diaphragm Fuel Pumps | | | |
| AF15472 | Fuel Pump - New | 05-02555 | . |
| AF15473 | Fuel Pump - New | 05-02556 | . |
| Overhauled TCM Centurion Fuel Pumps | | | |
| 4036/9076 | Fuel Pump - Overhauled | 05-19030 | . |
| 6861 | Fuel Pump - Overhauled | 05-19035 | . |
| 9051/9867 | Fuel Pump - Overhauled | 05-19025 | . |
| 40585 | Fuel Pump - Overhauled | 05-02557 | . |
| 40695 | Fuel Pump - Overhauled | 05-02558 | . |
| AF40585 | Fuel Pump - Overhauled | 05-02562 | . |
| AF40695 | Fuel Pump - Overhauled | 05-19045 | . |
| AF631391 | Fuel Pump - Overhauled | 05-02563 | . |
| New TCM Centurion Fuel Pumps | | | |
| AF6561 | Screen Kit | 05-02560 | . |
| AF16335 | Fuel Pump - New | 05-02561 | . |
| AF40585 | Fuel Pump - New | 05-02564 | . |
| AF40695 | Fuel Pump - New | 05-02565 | . |
| AF631391 | Fuel Pump - New | 05-19050 | . |

\$100.00 CORE CHARGE ON TEMPEST OVERHAULED FUEL PUMPS.

FUEL PUMPS



LYCOMING & CONTINENTAL FUEL PUMPS

Proven to be a trouble-free mechanical pressure pump. Original equipment on numerous airframe installations and adaptable to most applications with one of 3 dual diaphragm types. Overboard vent of this design provides operating assurance throughout all flights.

| Engine Type | Engine Model No. | Our P/N | Lycoming Part No. | Our Price |
|-------------|---|--------------------------------|---------------------|-----------|
| Lycoming | O-235, O-290, O-320, O-340, O-360, HO-360, GO-480, O-540, VO-540 | 41271 4-6 PSI 05-02534 | 05-19000 LW15472 | (Core .) |
| | IO-320, IO-360, AIO-360 HIO-360, IVO-360, IO-540, IGO-540, IO-720 | 41234 25-30 PSI 05-02532 | 05-19010 LW15473 | (Core .) |
| | Can be used on A/C who formerly used low pressure (15 PSI) carb. | 41272 (old 40595) 25-30 PSI | LW15473 | (Core .) |
| Continental | C-75 (-12, -12F), C-90 (-8,-8F,-12,12F) | 05-19045 | AF40695 | (Core .) |
| | C-90 (-16F), O-200 | 05-19050 | AF631391 | . |

Adapt pump thread to AN fittings using AC Fuel pump adapters: P/N 75505 .. Fitting ... or P/N 75505-1 . Fitting & O-Ring

LYCOMING/AC FUEL PUMP FITTINGS

These fittings are designed to fit mechanical fuel pumps used on Lycoming engines. These fittings feature 3/8" AN flare outlets for connection to aircraft hoses, and are available in straight, 45° and 90° angle versions. Straight fitting..... P/N 07-00780..... 45° fitting..... P/N 07-00781..... 90° fitting..... P/N07-00782..... Tee fitting w/1/8" pipe thread tapping for fuel pressure..... P/N 07-00783



WELDON HIGH PRESSURE ELECTRIC FUEL PUMP

Weldon's 8150 series high pressure electric fuel pump is a positive displacement "cammed vane" type used primarily in airborne applications. It features a low pressure relief valve and integral bypass valve. Applications include in-line fuel transfer priming of fuel-injected engines and an emergency fuel pump. The permanent-magnet, explosion resistant motor is rated for continuous duty. These self-priming, lightweight (2.6 lbs. max.) pumps have been used for over 15 years by major aircraft manufacturers.

| Model No. | Flow GPH | Output | Fluid | Power | Price Ea |
|-----------|----------|---------|-------------------|-------------|----------|
| 8150-B | 35 Min. | 4.5 PSI | Av Gas | 24V DC @ 2A | . |
| 8163-A | 35 Min. | 21 PSI | Av Gas MIL-G-5572 | 14V DC @ 5A | . |
| 8170-A | 35 Min. | 4.5 PSI | Gasoline | 12V DC @ 4A | . |

WELDON OVERHAUL FUEL PUMPS

We have the complete line of FAA approved overhauled fuel pumps. These pumps are warranted the same as OEM with guaranteed performance.

Weldon 18000A (14Volt) Replaces: Cessna C291504-0101, Duke 4140-00-17
Weldon 18000B (28Volt) Replaces: Cessna C291504-0201, Duke 4140-00-15

18000-A WELDON PUMP 14V P/N 08-07082
18000-A WELDON PUMP 28V P/N 08-07083

MOUNTING BRACKET FOR WELDON FUEL PUMPS

This T-bolt quick release band clamp with mounting bracket fits all Weldon fuel pumps with 2-1/2" diameter motors. Made from certified aerospace quality stainless steel, this bracket offers secure holding power under extreme vibration. The band clamp rotates within the mounting foot to offer easy access to the quick release latch for a variety of mounting positions. P/N 05-00021..... ea.



ACS FUEL PUMP COOLING SHROUD

Designed to keep the fuel pump cooler in the hot engine compartments, and reduce the risk of fuel vapor lock. The cooling shroud will fit carbureted or fuel injector Lycoming engines using a diaphragm style pump. P/N 08-06097



FUEL PUMPS COOLING SHROUD

Designed to keep the fuel pump cooler in the hot engine compartments, and reduce the risk of fuel vapor lock. The cooling shroud will fit carbureted or fuel injector Lycoming engines using a diaphragm style pump. Black Anodized Coating P/N 08-07098



FACET ELECTRIC FUEL PUMPS

SOLID-STATE TYPE PUMPS - These pumps measure less than 3" in any direction and weigh only 18 oz. Fuel is supplied as soon as the ignition is turned on so the engine will start faster at colder temperatures. Built-in pressure relief prevents flooding and assures fast re-starts on hottest days. The all-steel plated case is water tight. Mounts with two bolts. For best results, mount the pump close to the fuel tank and below the liquid level. The tank is self-priming to 18" fuel lift. Standard 12 V models require only 1 amp at max. delivery. Many models are available, but these are the ones recommended by Rutan Aircraft Factory, Stoddard Hamilton and many other aircraft designers. All of the pumps shown feature the all nylon valve and plunger as specified by Rutan Aircraft in the Canard Pusher newsletter.

FACET NO. 40105 - 12V Negative Ground, 2-1/2-4-1/2 PSI Max., 30 GPH. 1/8 x 27 internal pipe ports..... P/N 40105.....
FACET NO. 40106 - 12V Negative Ground, 4-6 PSI Max., 30 GPH. 1/8 x 27 internal pipe ports..... P/N 40106.....
FACET NO. 40164 - 24V Negative Ground, 4-C PSI Max, 30 GPH, 1/8 x 27 internal pipe ports..... P/N 40164.....
FACET NO. 40108/40154 - Aircraft Spruce now carries 12V and 24V electric fuel pumps which have AN-style 37° male "dash 6" fittings built into the fuel pump to provide a simpler fuel line hookup than with the internal pipe threads on the older Facet fuel pumps.

4-6 Psi P/N 40108 (12V)
15 GPH. P/N 40154 (24V)
Facet filter for solid-state pumps..... P/N 479735..... ea.
The pumps above do not feature an anti-siphoning valve and fuel will flow through them in event of pump failure.

AEROQUIP FITTING FOR FACET PUMPS

On the recommendation of Rutan Aircraft Factory, we now stock Aeroquip #2071-6-6S fitting which is a steel elbow with a swivel nut which fits the 37 flares on the Facet 40108 and 40154 fuel pumps. This Aeroquip fitting makes installation of the pumps easy & economical. P/N 04-05800



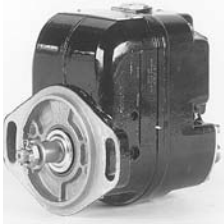
INTERRUPTER TYPE PUMPS

Fuel Compatibility: All models of the Facet High Performance Gold-Flo Solid State Fuel Pumps are compatible with gasoline, diesel, biodiesel, blended alcohol fuels and fuel additives. **Reliability:** The new Gold-Flo Solid State Fuel Pump is an enhanced version of our Interrupter model. It has Solid State circuitry and will meet or exceed all performance specifications and is totally interchangeable. (These pumps have demonstrated an endurance life almost double that of the nearest competitor, according to our test data). **Easy to Install-Easy to Service:** Two bolt mounting makes installations easy. Nothing to adjust. For best results, mount the pump close to the fuel tank and below the fuel level. The pump is self-priming to 24 inches vertical fuel lift. Vertical mounting is preferred to assure maintenance of rated pressures. An installation kit is available for replacement applications. The only service normally required is a simple cleaning of the filter and fuel inlet cavity. **Eliminates Vapor Lock:** When properly installed on most vehicles a constant, smooth, dependable supply of fuel under pressure is assured in the hottest weather or in high altitudes. **AVAILABLE FEATURES:** • 12 - 24 inches dry lift • 20 - 45 GPH • 1 - 8 PSI • Transient Protection - 24 volt only • State of the art Electronics • Sealed Electronics • Built in Anti-Siphon Valve (Positive shut-off) • UL Certified • VCA Certified • Complies to Mil-std-461D • Replaceable 74 micron filter • Built in magnet to collect metal particles for additional filtration • 1.6 amp average • Self Priming and Self Regulating • 32 ounces and 5 inches • Corrosion Resistant over 100 hours of salt spray

| Facet No. | Part # | Price |
|---|----------|-------|
| 480545-12V Neg. Ground, 4-5 psi, 30gph. Incl. anti-siphoning valve. Used on Maule aircraft. | 480545 | . |
| 478360-12V Neg. Ground, 4-5 psi, 30 gph. W/o anti-siphoning valve. Used on some Piper aircraft. | 478360 | . |
| 476088-24V Negative Ground, 4-5 psi, 30 gph. Used on some Piper and Grumman models. | 476088 | . |
| 480543-12V Neg. Ground, 6.5-7.5 psi, 45gph. Used by some engine rebuilders and aircraft modification shops. | 480543 | . |
| Facet filter for interrupter pumps. | 479729 | . |
| 476410- 12V Negative Ground, 4-5 psi, 20gph. | 476410 | . |
| 480534E- 12V Negative Ground, 8-.6 psi, 45gph, 1/4-18 fitting | 05-00802 | . |
| 480564E- 24V Negative Ground, 4-5 psi, 32gph. Includes anti-siphoning valve. 1/4-18 fitting. | 05-01003 | . |
| 476549E- 12V Negative Ground, 8-.6.5 psi, 32gph, 1/8-27 fitting | 05-00813 | . |



BENDIX-SCINTILLA MAGNETOS



BENDIX MAGNETOS (Outright Purchase)

S4LN-20 (RH).....P/N 10-600644-1..... S4LN-21 (LH)..... P/N 10-500514-1

All above magnetos have impulse coupling.

REMANUFACTURED BENDIX MAGNETOS

| | | | | | |
|-------------|-----------------|--------------|------------------|-----------|-------------------|
| S4LN-20(RH) | 10-51360-29R | S4LN-21..... | 10-51360-26R | D3000.... | 10-68255-11R |
| S4LN-21(LH) | 10-51360-37R | S4LN-21..... | 10-51360-37R | 1200..... | 10-68255-14..... |
| 200 Series | 10-16305-9..... | 1200..... | 10-34937-4..... | | 10-34931-1..... |
| | 10-51365-47R | D3000..... | 10-68256-11..... | | 10-51360-27R..... |
| | 10-51360-28R | | 10-51365-39..... | | 10-79020-10..... |

Exchange Price. Add \$180.00 core charge to price above. Refundable with return of rebuildable exchange magneto.

ALL MODEL NUMBERS AVAILABLE

BENDIX MAGNETO ENGINE APPLICATIONS

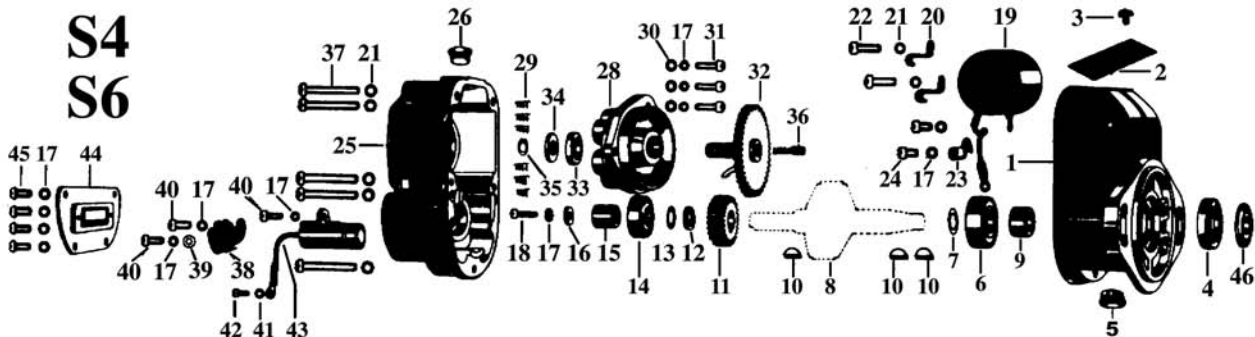
| Make | Engine Model | Magneto Type | Magneto Replacement | Units per Engine |
|-------------|--|--------------|------------------------|------------------|
| Continental | A-65-8, A-75-8, | S4RN-20 | 10-51360-27 (Rt. Side) | 1 |
| | C-75-8, C-85-8 with original crankcase | S4RN-21 | 10-51360-28 (Lt. Side) | 1 |
| | A65-8, A-75-8, C-75-8, C-85-8 with current crankcase castings No. 6794 & No. 6795 | S4RN-21 | 10-51360-28 | 2 |
| | C-75-12F, C-85-8F, C-85-12F, C-90-12, | S4LN-21 | 10-51360-26 | 2 |
| | C-115, C-125-2, C-145-2, C-145-4 | S6LN-21 | 10-51365-39 | 2 |
| | E-165-2, E-185-2 (above S/N 10111) E-185-3, E-185-9 (above S/N 5937) (above S/N 20922), E-225-4, E-225-8 (all), O-470-7 (above S/N 5937) | S6LN-20 | 10-51365-43 | 2 |
| | GO-300A, GO-300B | S6RN-21 | 10-51365-35 | 2 |
| | O-470-2, -4, -13, -A, -B, -E, -G, -J, -K, -L, -M, BGSO-526-A | S6RN-25 | 10-79020-8 | 2 |
| | O-470-13A | S6LN-23 | 10-52350-20 | 2 |
| | PF-150-2, -6 Packette | S6LN-23 | 10-52350-20 | 1 |
| Franklin | 6A4-150-B3, 6A4-165-B3 | S6RN-21 | | 2 |
| | 6V4-178-B3, -B33, O-335-2, -3 | S6RN-21 | 10-51365-48 | 2 |

| Make | Engine Model | Magneto Type | Magneto Replacement | Units per Engine |
|--|--|--------------|--------------------------|------------------|
| Franklin | 6V4-200-C32, -C33, O-335-2, -3, -5, -6 | S6RN-23 | 10-52350-19 | 2 |
| | 6A4-200-C6 | S6RN-23 | 10-52350-21 | 2 |
| | ††O-145-B2, -B3, -C2, -C3, ††O-235-C, | S4LN-20 | 10-51360-29 | 1 |
| Lycoming | O-235-C1, -C1A, | S4LN-21 | 10-51360-30 | 1 |
| | O-320-A1A, -A2A, -B1A, -B2A, O-340-A, -A1A, | S4LN-21 | 10-51360-30 (25° Lag) or | 2 |
| | -A2A, -B1A, B2A, O-360-A, -A1A, -A1B, -B1A, -B2A | S4LN-21 | 10-51360-25 (35° Lag) | 2 |
| | O-290-G (single ignition) | S4LN-21 | 10-51360-25 | 1 |
| | GO-435-C2, -C2A, -C2B, -C2B2, -C2C, -C2E, GO-480, -B, -B1A6, -B1C, | S6LN-20 | 10-51365-31 | 1 |
| | -B1D, -C1A, -C1D6, -C2E6, -F1A6, -F2A6, -F3A6, -F4A6 | S6LN-21 | 10-51360-32 | 1 |
| | O-435-19, -20, VO-435A, -A1A, -A1B, -A1C, -A1D, GO-480-C1B6, -D1A, | S6LN-20 | 10-51365-33 | 1 |
| | -G1B6, GSO-480-A1A6, -A1C6, -B1A6, -B1B6, -B1C6 | S6LN-21 | 10-51365-34 | 1 |
| | O-435-6, -6A, -23, -23A, | S6LN-22 | 10-52350-22 | 1 |
| | -23B, -A1C (optional), O-480-1 | S6LN-23 | 10-52350-23 | 1 |
| O-435-17, GO-435-C2, -C2A, -C2B, -C2D, | S6LN-20 | 10-51365-44 | 1 | |
| GO-480-B1, -B1B, -C2C6, -F3B6, -F4B6 | S6LN-21 | 10-51365-45 | 1 | |
| O-540 | S6LN-20 | 10-51365-46 | 1 | |
| | S6LN-21 | 10-51365-47 | 1 | |

*See Listing Below.

New P/N 10-357584. *New P/N 10-357586.

PARTS COMMON TO S4N & S6N MAGNETOS



| Ref. No. | Part No. | Description | Price Ea. |
|----------|------------|---------------------------|-----------|
| 1 | 10-50727Y | Housing - Magneto | |
| 2 | 10-400012 | Plate - Mag Ident | |
| 3 | 10-22067 | Drive Screw - Ident Plate | |
| 4 | 10-357592 | Oil Seal - Drive Shaft | |
| 5 | 10-157134 | Vent - Mag Housing | |
| 6 | 10-81806 | Bearing - Mag, Drive End | |
| 7 | 2-161-1 | Shim Washer - .0025" | |
| | 2-161-2 | Shim Washer - .004" | |
| | 2-161-3 | Shim Washer - .005" | |
| | 2-161-4 | Shim Washer - .008" | |
| | 2-161-5 | Shim Washer - .010" | |
| | 2-161-6 | Shim Washer - .012" | |
| | ----- | (Drive End Bearing) | |
| 8 | ----- | Magnet - Rotating | |
| 9 | 10-25788 | Bushing - Drive Shaft | |
| 10 | 10-90788-5 | Key - Woodruff | |
| 11 | 10-157123Y | Gear-Distrib., Small (S4) | |
| 11A | 10-157120Y | Gear-Distrib., Small (S6) | |
| 12 | 10-3503 | Spacer-Bkr End Bearing | |
| 13 | 2-199-1 | Shim Washer - .002" | |
| | 2-199-2 | Shim Washer - .004" | |

| Ref. No. | Part No. | Description | Price Ea. |
|----------|-------------|----------------------------|-----------|
| 13 | 2-199-3 | Shim Washer - .005" | |
| | 2-199-4 | Shim Washer - .008" | |
| | 2-199-5 | Shim Washer - .010" | |
| | 2-199-6 | Shim Washer - .012" | |
| | ----- | (Breaker End Bearing) | |
| 14 | 2-202 | Bearing-Magnet, Bkr End | |
| 15 | 10-88543-1 | Cam - Breaker | |
| 16 | 10-51354 | Washer-Plain (Cam Screw) | |
| 18 | 10-35936-10 | Screw - Cam | |
| 19 | 10-357164 | Coil | |
| 20 | 10-50765 | Clamp - Coil Core | |
| 21 | ----- | Washer - Lock | |
| 22 | 10-35937-8 | Screw - Coil Core Clamp | |
| 23 | 10-5752 | Clip - Primary Lead | |
| 24 | 10-16479 | Screw | |
| 25 | ----- | Housing - Distributor | |
| 26 | 10-157135 | Plug - Distributor Housing | |
| 27 | ----- | Bushing - Ground Terminal | |
| 28 | 10-52949 | Block - Distributor (S4) | |
| 28A | 10-52958 | Block - Distributor (S6) | |
| 29 | 10-50737 | Spring-H.T. Cable Contact | |

| Ref. No. | Part No. | Description | Price Ea. |
|----------|-------------|-------------------------------|-----------|
| 30 | ----- | Washer - Plain | |
| 31 | ----- | Screw - Distributor Block | |
| 32 | 10-357584 | Gear-Distrib., Large (S4)** | |
| 32A | 10-357586 | Gear-Distrib., Large (S6)*** | |
| 33 | 10-50752 | Washer - Felt | |
| 35 | 10-92815-37 | Ring-Retain. (Distrib., Gear) | |
| 36 | 10-9595 | Brush - Carbon | |
| 37 | 10-157158 | Screw | |
| 38 | ----- | Breaker Assembly* | |
| 39 | 10-14268 | Washer - Plain | |
| 40 | 10-35936-6 | Screw | |
| 41 | ----- | Washer - Lock | |
| 42 | ----- | Screw - Lead to Breaker | |
| 43 | 10-51676 | Condenser | |
| 44 | ----- | Cover - Breaker | |
| 45 | 10-157161 | Screw - Breaker Cover | |
| 46 | 10-51678 | Oil Slinger - Drive Shaft | |

BENDIX-SCINTILLA MAGNETOS

BENDIX BREAKER ASSEMBLIES

Early S4, S6 Mags
P/N 07-06305 (10-357173) with spring
(current production) Ea.
P/N 07-06306 (10-357174) without spring
(current production) Ea.

**All above breaker assemblies used on either Right or Left Magnetos.
Late S4/S6 Mags, S200 Mags***

P/N 10-382584 (LH) Ea.
P/N 10-382585 (RH) Ea.

Used on many late Lyc. engines.

Note: Specify Bendix mag P/N e.g., 10-51369-29

REPLACEMENT COIL FOR BENDIX S4, S6 MGS

Airborne FAA-PMA approved coil replaces both Bendix 10-357164 & 10-357165. Retrofits virtually the complete range of Bendix S20 & S200 series mags. Furnished with long & short "coil to points" leads.

NOTE: Part Nos. 10-357164-1, 10-357165-1, 07-06303, 07-06304 are all equivalents for ES-652

REPLACEMENT COIL FOR BENDIX 1200 SERIES MGS

Aero Accessories, Inc. FAA-PMA approved coil is a direct replacement for Bendix 10-391088 coil as used on Bendix 1200 series mags at tremendous savings.

REPLACEMENT COILS FOR CONTINENTAL ENGINES PER SERVICE BULLETIN NO. 637

TCM Ignition Systems has issued Service Bulletin No. 637 to retire from service certain older coils and rotating magnetos. The Bulletin applies to many S-20, S-200, S-600, and S-1200 series magnetos as identified in this chart. Compliance with this Bulletin is required at the next 100 inspection, annual inspection, or progressive maintenance inspection, whichever comes first. Order by new coil part number.

| Magneto Series | Old Coil P/N | Color | New Coil P/N | Color | Our Price |
|----------------|--------------|-----------------------------|--------------|------------------------------|-----------|
| S-20 | 10-51303 | Opaque amber to Dark Purple | 10-357164 | Bright Red to Dark Red | . |
| | 10-76384 | | | | |
| | 10-160886 | | | | |
| S-200 | 10-163172 | Opaque Amber to Dark Purple | 10-357165-1 | Bright Red to Dark Red | . |
| | 10-163209 | | | | |
| S-200 | 10-160887 | | | | |
| S-1200 | 10-349271 | Opaque Amber | 10-391088-1 | Blue to Olive Green to Black | . |



ALTERNATOR FILTER

Replacement part for existing alternator filters. Wire won't break at the case and its clamp is made from heavy gauge steel. Double the capacitance compared to OEM alternator filters. For stubborn alternator noise, this Alternator filter combined with the Eliminator (P/N 11-08055) can trap a wide frequency range of electronic noise. Both of these filters have been thoroughly tested under a DO 160D and are FAA/PMA approved. P/N 11-08060..... ea

MAGNETO FILTER



Eliminates ignition noise. Install in primary lead of magneto. Hooks up parallel to primary lead. Not FAA approved. P/N 07-03200 ea



MAGNETO FILTER FAA APPROVED

FAA approved ignition filters easily connect to the primary lead and grounds at the magneto and eliminate magneto noise. Size: 1"x1.8". 1yr warranty.

Specifications: • Heavy duty mounting clamp • Advanced feed-through design • Temp. range: -35°C to +80°C • Maximum current: 20 amps • Capacitance: .05 uf-self healing technology • Braided cable is shielded, silver plate over copper supplied in 8" lengths. • 1000 Vdc working voltage, 5000Vdc break down voltage P/N 07-00713

Magneto filters not for use on slick mags.



BENDIX MAGNETO GREASE

#10-27165 - Factory recommended lubricant for bearings in Bendix magnetos. 1 Lb. Can P/N 10-27165

#10-391200 - Grease for AD Note on 1200 Series magnetos. 1 Lb. Can P/N 10-391200

1 oz. tube P/N 07-02500



GROMMET STRETCHER

Stop Cutting Grommets!

- Stretch grommets over large plugs and fittings.
- Great for spark plug wires or molex plugs.

P/N 11-06946



CONTINENTAL MAGNETO DRIVE GEARS

#36066 Gear (Now 655845)



GROUND TERMINAL KITS

For S-20 series mags. Kit No. 10-52306 (AN3105)

| Reg. No. | Part No. | No. Req. | Description |
|----------|----------|----------|-----------------------------------|
| 1 | 10-30299 | 1 | NUT - Coupling (Ground Terminal) |
| 2 | 10-56507 | 1 | CROMMET Assy.(Ground Terminal) |
| 3 | 10-3383 | 1 | FERRULE - Inner (Ground Wire) |
| 4 | 10-25725 | 1 | SLEEVE - Insulating (Ground Wire) |



For 20 series mags. Kit No. P/N 10-52305

| Reg. No. | Part No. | No. Req. | Description |
|----------|----------|----------|-----------------------------------|
| 1 | 10-37669 | 1 | NUT - Coupling (Ground Terminal) |
| 2 | 10-7030 | 1 | FERRULE - Outer (Ground Wire) |
| 3 | 10-7029 | 1 | FERRULE - Inner (Ground Wire) |
| 4 | 10-37668 | 1 | SLEEVE - Insulating (Ground Wire) |
| 5 | 2-155 | 1 | WASHER - Ground Wire Contact |

TCM/BENDIX IMPULSE COUPLINGS

| Part No. | Price |
|----------------|-------|
| 10-40307 | |
| 10-40309 | |
| 10-40310 | |
| 10-40314 | |
| 10-40315 | |
| 10-40322 | |
| 10-40325 | |

\$50 core charge applies

TCM/BENDIX CAM ASSEMBLIES

| Part No. | Price |
|-------------------|-------|
| 10-40166-4 | |
| 10-40167-4 | |
| 10-40167-6 | |
| 10-40167-10 | |

\$25 core charge applies



BOGERT AVIATION P-LEADS

P-leads for all aircraft using a Slick or Bendix Style Magnetos. This includes nearly all piston aircraft such as: Cessna, Piper, Grumman, Mooney, as well as many homebuilt and experimental aircraft. As a general rule cables should be replaced when ever wear is apparent. Broken ground leads should not be permitted. A drop in rpm is expected when one magneto of the two mags is shut off. Should the propeller be moved by hand and a functional "hot" magneto exists, the engine may fire causing injury. If there is no drop in rpm the owner should call a mechanic immediately. Bogert is using 14gauge MS27500 wire with aviation approved terminals. The shrink tube has an adhesive inside the sleeve to improve durability and reduce the possibility of corrosion. Cables are ready to install.

| Length inches | Slick Style | | Bendix Round Nut | | Bendix Hex Nut | |
|---------------|-------------|-------|------------------|-------|----------------|-------|
| | Part No. | Price | Part No. | Price | Part No. | Price |
| 30 | 11-06869 | . | 11-06891 | . | 11-06914 | . |
| 36 | 11-06870 | . | 11-06892 | . | 11-06915 | . |
| 42 | 11-06871 | . | 11-06893 | . | 11-06916 | . |
| 48 | 11-06872 | . | 11-06894 | . | 11-06917 | . |
| 54 | 11-06873 | . | 11-06895 | . | 11-06918 | . |
| 60 | 11-06874 | . | 11-06896 | . | 11-06919 | . |
| 66 | 11-06875 | . | 11-06897 | . | 11-06920 | . |
| 7 | 11-06876 | . | 11-06898 | . | 11-06921 | . |
| 84 | 11-06877 | . | 11-06899 | . | 11-06922 | . |
| 96 | 11-06878 | . | 11-06901 | . | 11-06923 | . |
| 108 | 11-06879 | . | 11-06902 | . | 11-06924 | . |
| 120 | 11-06880 | . | 11-06903 | . | 11-06925 | . |
| 132 | 11-06881 | . | 11-06904 | . | 11-06926 | . |
| 144 | 11-06882 | . | 11-06905 | . | 11-06927 | . |
| 156 | 11-06883 | . | 11-06906 | . | 11-06928 | . |
| 168 | 11-06884 | . | 11-06907 | . | 11-06929 | . |
| 180 | 11-06885 | . | 11-06908 | . | 11-06930 | . |
| 192 | 11-06886 | . | 11-06909 | . | 11-06931 | . |
| 204 | 11-06887 | . | 11-06910 | . | 11-06932 | . |
| 216 | 11-06888 | . | 11-06911 | . | 11-06933 | . |
| 228 | 11-06889 | . | 11-06912 | . | 11-06934 | . |
| 240 | 11-06890 | . | 11-06913 | . | 11-06935 | . |



BENDIX MAGNETO REPAIR KITS FROM TEMPEST

REPAIR KIT

- 1 - Contact Assy. Kit (3)
- 1 - Capacitor
- 2 - Bearings
- 1 - Oil Seal
- 1 - Oil Slinger
- 3 - Woodruff Keys
- 1 - Cotter Pin
- 1 - Cam Screw
- 1 - Felt Washer
- 1 - Felt Strip
- 1 - Snap Ring
- 1 - Carbon Brush

These magneto repair kits are designed to simplify the Bendix magneto overhaul process by providing all of the commonly needed overhaul parts in one convenient kit. The Repair Kits contain the parts needed for minor repair such as a 500 hour inspection, and the Deluxe Repair Kits contain the parts needed for major repair such as a magneto overhaul. These parts are highest quality direct replacement parts and are approved for installation and use on certificated aircraft. The Repair Kit and Deluxe Repair Kit for the Bendix -200, -201, and -202 series magnetos contain two sets of contact assembly kits. Some parts that may be need replacing during magneto overhaul are not included in these kits.

DELUXE REPAIR KIT

- 1 - Contact Assy. Kit (3)
- 1 - Coil Kit
- 1 - dist. Block Kit
- 1 - Gear Kit
- 1 - Capacitor
- 2 - Bearings
- 1 - Oil Seal
- 1 - Oil Slinger
- 3 - Woodruff Keys
- 1 - Cotter Pin
- 1 - Cam Screw

EP

| Bendix series | Magneto P/N | Magneto Type | Repair Kit P/N | Kit Price | Deluxe Repair Kit P/N | Kit Price |
|---------------|-----------------------------|-----------------|----------------|-----------|-----------------------|-----------|
| S-20 & S21 | 10-51360-1 | S4R(L)N -20,21 | 07-00855 | . | 07-00854 | . |
| | 10-51360-3 | | | | | |
| | 10-51360-4 | | | | | |
| | 10-51360-6 | | | | | |
| | 10-51360-8 | | | | | |
| | 10-51360-10 | S4R(L)N -20,21 | 07-00825 | . | 07-00856 | . |
| | 10-51360-11 | | | | | |
| | 10-51360-12 | | | | | |
| | 10-51360-25 | | | | | |
| | 10-51360-26 | | | | | |
| | 10-51360-27 | S4R(L)N -20,21 | 07-00855 | . | 07-00854 | . |
| | 10-51360-28 | | | | | |
| | 10-51360-29 | S4R(L)N -20,21 | 07-00825 | . | 07-00856 | . |
| | 10-51360-30 | | | | | |
| | 10-51360-31 | S4R(L)N -20,21 | 07-00855 | . | 07-00854 | . |
| | 10-51360-33 | | | | | |
| | 10-51360-37 | S4R(L)N -20,21 | 07-00825 | . | 07-00856 | . |
| | 10-51360-40 | | | | | |
| | 10-51360-41 | | | | | |
| | 10-51360-45 | | | | | |
| | 10-51360-46 | | | | | |
| | 10-51360-47 | S4RN-21 | 07-00860 | . | 07-00859 | . |
| | 10-51360-48 | S4R(L)N -20,21 | 07-00825 | . | 07-00856 | . |
| | 10-51360-54 | S4RN-21 | 07-00860 | . | 07-00859 | . |
| | 10-51360-55 | S4RN-21 | 07-00858 | . | 07-00857 | . |
| | 10-51360-58 | S4R(L)N -20,21 | 07-00825 | . | 07-00856 | . |
| | 10-51360-1 up to S.N.238468 | S4R(L)N-20, 21 | 07-00860 | . | 07-00859 | . |
| | 10-51365-1 up to S.N.238469 | S6R(L)N-20, -21 | 07-00862 | . | 07-00861 | . |
| | 10-51365-2 | S6R(L)N | 07-00864 | . | 07-00863 | . |
| | 10-51365-5 | | | | | |
| | 10-51365-7 | S6R(L)N -20,21 | 07-00862 | . | 07-00861 | . |
| | 10-51365-9 | | | | | |
| | 10-51365-13 | | | | | |
| | 10-51365-14 | | | | | |
| | 10-51365-15 | | | | | |
| | 10-51365-16 | | | | | |
| | 10-51365-17 | | | | | |
| | 10-51365-20 | | | | | |
| | 10-51365-25 | | | | | |
| | 10-51365-26 | | | | | |
| | 10-51365-27 | S6R(L)N -20,21 | 07-00864 | . | 07-00863 | . |
| | 10-51365-28 | | | | | |
| | 10-51365-29 | | | | | |
| | 10-51365-30 | | | | | |
| | 10-51365-31 | | | | | |
| | 10-51365-32 | | | | | |
| | 10-51365-33 | | | | | |
| | 10-51365-34 | | | | | |
| | 10-51365-35 | | | | | |
| | 10-51365-39 | | | | | |
| 10-51365-40 | S6R(L)N -20,21 | 07-00862 | . | 07-00861 | . | |
| 10-51365-41 | | | | | | |
| 10-51365-42 | S6R(L)N -20,21 | 07-00864 | . | 07-00863 | . | |
| 10-51365-43 | | | | | | |
| 10-51365-44 | | | | | | |
| 10-51365-45 | | | | | | |
| 10-51365-46 | | | | | | |
| 10-51365-47 | | | | | | |
| 10-51365-48 | | | | | | |
| 10-51365-53 | S6R(L)N -20,21 | 07-00862 | . | 07-00861 | . | |
| 10-51365-54 | | | | | | |
| 10-51365-57 | S6R(L)N -20,21 | 07-00864 | . | 07-00863 | . | |
| | S6LN -20,21 | 07-00868 | . | 07-00867 | . | |

BENDIX MAGNETO REPAIR KITS FROM TEMPEST

| Bendix Series | Magneto P/N | Magneto Type | Repair Kit P/N | Kit Price | Deluxe Repair Kit P/N | Kit Price |
|---------------|--------------|------------------|----------------|-----------|-----------------------|-----------|
| S-24 & S25 | 10-79020-5 | S6R(L)N -24,25 | 07-00864 | . | 07-00863 | . |
| | 10-79020-6 | | | | | |
| | 10-79020-8 | | | | | |
| | 10-79020-10 | | | | | |
| | 10-79020-11 | S6LN -25 | 07-00868 | . | 07-00867 | . |
| | 10-79020-13 | S6R(L)N -24, -25 | 07-00864 | . | 07-00863 | . |
| | 10-79020-14 | | | | | |
| | 10-79020-16 | | | | | |
| | 10-79020-17 | S6LN -25 | 07-00868 | . | 07-00867 | . |
| | 10-79020-18 | | | | | |
| | 10-79020-118 | | | | | |
| 10-79020-19 | S6RN-25 | 07-00866 | . | 07-00865 | . | |
| 10-79020-119 | | | | | | |
| S-200 | 10-163005-1 | S4R(L)N-200* | 07-00844 | . | 07-00843 | . |
| | 10-163005-2 | | | | | |
| | 10-163005-3 | | | | | |
| | 10-163005-4 | | | | | |
| | 10-163005-5 | | | | | |
| | 10-163005-7 | | | | | |
| | 10-163005-10 | | | | | |
| | 10-163005-11 | | | | | |
| | 10-163015-1 | S4R(L)N-201* | 07-00844 | . | 07-00843 | . |
| | 10-163015-2 | | | | | |
| | 10-163015-3 | | | | | |
| | 10-163015-4 | | | | | |
| | 10-163045-1 | S4LN -204 | 07-00757 | . | 07-00847 | . |
| | 10-163045-2 | S4RN -204 | 07-00846 | . | 07-00845 | . |
| | 10-163045-3 | S4LN -204 | 07-00757 | . | 07-00847 | . |
| | 10-163045-4 | S4RN -204 | 07-00846 | . | 07-00845 | . |
| | 10-163045-6 | S4LN -204 | 07-00757 | . | 07-00847 | . |
| | 10-163045-7 | S4RN -204 | 07-00846 | . | 07-00845 | . |
| | 10-163055-1 | S4RN -205 | 07-00846 | . | 07-00845 | . |
| | 10-163055-2 | S4LN -205 | 07-00757 | . | 07-00847 | . |
| | 10-163010-1 | S6R(L)N -200* | 07-00849 | . | 07-00848 | . |
| | 10-163010-2 | | | | | |
| | 10-163010-3 | | | | | |
| | 10-163010-4 | | | | | |
| | 10-163010-5 | | | | | |
| | 10-163010-6 | | | | | |
| | 10-163010-7 | | | | | |
| | 10-163010-8 | | | | | |
| | 10-163010-9 | | | | | |
| | 10-163010-10 | | | | | |
| | 10-163010-11 | | | | | |
| | 10-163010-15 | S6R(L)N-201* | 07-00849 | . | 07-00848 | . |
| | 10-163010-17 | | | | | |
| | 10-163020-1 | | | | | |
| | 10-163020-2 | | | | | |
| | 10-163020-3 | S6R(L)N-204 | 07-00849 | . | 07-00848 | . |
| | 10-163020-4 | | | | | |
| | 10-163030-1 | | | | | |
| | 10-163030-4 | S6LN-204 | 07-00853 | . | 07-00852 | . |
| | 10-163050-1 | | | | | |
| | 10-163050-2 | | | | | |
| | 10-163050-3 | | | | | |
| | 10-163050-5 | | | | | |
| 10-163050-6 | S6RN -204 | 07-00851 | . | 07-00850 | . | |
| 10-163050-7 | | | | | | |
| 10-163050-8 | | | | | | |
| 10-163050-9 | S6LN -204 | 07-00853 | . | 07-00852 | . | |
| 10-163060-1 | S6RN -205 | 07-00851 | . | 07-00850 | . | |
| 10-163060-2 | S6RN -205 | 07-00853 | . | 07-00852 | . | |
| 10-163070-1 | S6RN -206 | 07-00853 | . | 07-00852 | . | |
| 10-163070-3 | | | | | | |



*The Repair Kit and Deluxe Repair Kit for the Bendix -200, -201, and -202 Series Magnetos contain two sets of Contact Assembly Kits.

REPLACEMENT PARTS FOR BENDIX MAGNETOS FROM KELLY AEROSPACE

| P/N | Description | Price | P/N | Description | Price | P/N | Description | Price | P/N | Description | Price |
|-------------|-------------------|-------|-------------|-------------------|-------|----------|-------------------|-------|-----------|----------------|-------|
| 07-06301 | Bearing | . | 07-06315 | Breaker Points | . | 10-50737 | Spring | . | 07-06341 | Bushing | . |
| 10-357078 | Bushing | . | 07-06316 | Capacitor | . | 07-06329 | Felt Washer | . | 10-160844 | Brush | . |
| 10-357164 | Coil | . | 07-06317 | Washer | . | 07-06330 | Plug | . | 07-06343 | Bushing | . |
| 10-357165-1 | Coil | . | 07-06318 | Coil | . | 10-51676 | Capacitor | . | 07-06344 | Bushing | . |
| 10-35717-3 | Breaker Points | . | 07-06319 | Capacitor | . | 07-06332 | Washer | . | 07-06345 | Felt Strip | . |
| 10-35717-4 | Breaker Points | . | 07-06320 | Gasket | . | 07-06333 | Washer | . | 07-06346 | Packing | . |
| 10-357193 | Bushing | --- | 07-06321 | Bushing | . | 07-06334 | Distributor Block | . | 07-06347 | Capacitor | . |
| 07-06308 | Capacitor | . | 10-391088-1 | Coil | . | 07-06335 | Distributor Block | . | 07-06348 | Washer | . |
| 10-52949 | Distributor Block | . | 07-06323 | Gasket | . | 07-06336 | Bearing | . | 07-06349 | Breaker Points | . |
| 07-06311 | Breaker Points | . | 07-06324 | Gasket | . | 07-06325 | Ring | . | 07-06350 | Breaker Points | . |
| 10-382584 | Breaker Points | . | 07-06325 | Distributor Block | . | 07-06338 | Ring | . | 07-06351 | Bearing | . |
| 07-06313 | Coil | . | 07-06326 | Distributor Block | . | 07-06339 | Bearing | . | | | |
| 07-06314 | Breaker Points | . | 07-06327 | Vent | . | 07-00787 | Coil | . | | | |

KELLY AEROSPACE IGNITION HARNESSSES



PLATED STEEL NUT: Steel nuts offer superior strength compared to aluminum nuts and reduce the potential for galling during installation. **FAA/PMA APPROVED FOR:** - Franklin - Teledyne Continental Motors - Textron Lycoming. **ABRASION AND HEAT RESISTANT:** The abrasion resistant red polymer cover has been engineered specifically for the high-temperature environment of reciprocating engines. **UNIQUE SPRING DESIGN:** Kelly Aerospace ignition harnesses incorporate a negative-pitch spring design (the tip of the coil spring extends inward) allowing the coil spring tip to lie flat against the spark plug electrode, providing 360 contact. Ignition energy is maximized and flashover is reduced to a minimum. **REPLACEABLE CONTACT SPRINGS:** Replacement springs are available separately saving you time and money when a field repair is necessary. **STRAIGHT AND CLOCKABLE 90 DEGREE STEEL ELBOW LEADS AVAILABLE:** You have the option of using straight or clockable 90 degree elbow leads to make the installation neat and easy. **PERFORMANCE - Plus:** Using a tinned-copper, nickel plated braid shielding substantially reduces EMI and combined with a very flexible 19 strand conductor of stainless steel wire provides the ultimate in wire conductivity and ease of installation.

NOTE: PART NUMBERING SYSTEM and CROSS REFERENCE: The Kelly Aerospace part numbering system is "user Friendly" for quickly cross-referencing to both Champion and Unison Harnesses. The "KA1" prefix is equivalent to the Champion "CH1" or the Unison "M" with the balance of the part number remaining the same. Add the suffix "E" to the part number to designate the 90 degree steel elbow terminations whenever ordering an "Elbow" harness. (EXAMPLE: KA12121E).

| P/N | BEND | SLICK | 4 CYL | 6CYL | ELBOW | STRAIGHT | Our P/n | Price |
|----------|------|-------|-------|------|-------|----------|----------|-------|
| KA11480 | | X | | X | | X | 08-01095 | . |
| KA11480E | | X | | X | X | | 08-01096 | . |
| KA1730 | X | | | X | | X | 08-01098 | CALL |
| KA11730E | X | | | X | X | | 08-01099 | CALL |
| KA11740 | X | | | X | | X | 08-01101 | CALL |
| KA11740E | X | | | X | X | | 08-01102 | CALL |
| KA11780 | | X | X | | | X | 08-01103 | CALL |
| KA11780E | | X | X | | X | | 08-01104 | . |
| KA11878 | | X | | X | | X | 08-01105 | . |
| KA11878E | | X | | X | X | | 08-01106 | . |
| KA11884 | | X | | X | | X | 08-01107 | . |
| KA11884E | | X | | X | X | | 08-01108 | . |
| KA11950 | X | | | X | | X | 08-01109 | . |
| KA11950E | X | | | X | X | | 08-01110 | . |
| KA11978 | X | | | X | | X | 08-01111 | CALL |
| KA11978E | X | | | X | X | | 08-01112 | . |
| KA12007 | X | | X | | | X | 08-01113 | . |
| KA12007E | X | | X | | X | | 08-01114 | CALL |
| KA12015 | X | | | X | | X | 08-01115 | CALL |
| KA12015E | X | | | X | X | | 08-01116 | . |
| KA12037 | X | | | X | | X | 08-01117 | . |
| KA12037E | X | | | X | X | | 08-01118 | . |
| KA12112 | X | | X | | | X | 08-01119 | . |
| KA12112E | X | | X | | X | | 08-01120 | . |
| KA12120 | X | | | X | | X | 08-01121 | CALL |
| KA12120E | X | | | X | X | | 08-01122 | . |
| KA12121 | X | | | X | | X | 08-01123 | CALL |
| KA12121E | X | | | X | X | | 08-01124 | . |
| KA12130 | X | | | X | | X | 08-01125 | . |
| KA12130E | X | | | X | X | | 08-01126 | . |
| KA12154 | X | | | X | | X | 08-01127 | . |
| KA12154E | X | | | X | X | | 08-01128 | . |
| KA12157 | X | | | X | | X | 08-01129 | . |
| KA12157E | X | | | X | X | | 08-01130 | . |
| KA12176 | X | | | X | | X | 08-01131 | . |
| KA12176E | X | | | X | X | | 08-01132 | CALL |
| KA12216 | X | | | X | | X | 08-01133 | . |
| KA12216E | X | | | X | X | | 08-01153 | . |
| KA12235 | X | | X | | | X | 08-01134 | . |
| KA12235E | X | | X | | X | | 08-01135 | . |
| KA12244 | X | | | X | | X | 08-01155 | . |
| KA12244E | X | | | X | X | | 08-01156 | . |
| KA12247 | X | | | X | | X | 08-01157 | . |
| KA12247E | X | | | X | X | | 08-01158 | . |
| KA12259 | X | | | X | | X | 08-01159 | . |
| KA12259E | X | | | X | X | | 08-01160 | . |
| KA12318 | | X | | X | | X | 08-01161 | . |
| KA12318E | | X | | X | X | | 08-01162 | . |
| KA12339 | X | | | X | | X | 08-01163 | . |
| KA12339E | X | | | X | X | | 08-01154 | . |
| KA12360 | X | | X | | | X | 08-01136 | . |
| KA12360E | X | | X | | X | | 08-01137 | . |
| KA12364 | X | | X | | | X | 08-01138 | . |
| KA12364E | X | | X | | X | | 08-01139 | . |
| KA12365 | X | | X | | | X | 08-01082 | . |
| KA12365E | X | | X | | X | | 08-01141 | . |
| KA12381 | | X | | X | | X | 08-01142 | . |
| KA12381E | | X | | X | X | | 08-01143 | . |
| KA12423 | X | | X | | | X | 08-01144 | . |
| KA12423E | X | | X | | X | | 08-01164 | . |
| KA12447 | X | | | X | | X | 08-01165 | . |
| KA12447E | X | | | X | X | | 08-01166 | CALL |
| KA12474 | X | | | X | | X | 08-01167 | . |
| KA12474E | X | | | X | X | | 08-01168 | . |
| KA12508 | | X | X | | | X | 08-01145 | . |
| KA12508E | | X | X | | X | | 08-01169 | . |
| KA12616 | X | | X | | | X | 08-01170 | . |

| P/N | BEND | SLICK | 4 CYL | 6CYL | ELBOW | STRAIGHT | Our P/n | Price |
|----------|------|-------|-------|------|-------|----------|----------|-------|
| KA12616E | X | | X | | X | | 08-01171 | . |
| KA12628 | X | | | X | | X | 08-01172 | . |
| KA12628E | X | | | X | X | | 08-01173 | . |
| KA12709 | X | | | X | | X | 08-01174 | . |
| KA12709E | X | | | X | X | | 08-01175 | . |
| KA12712 | X | | | X | | X | 08-01176 | . |
| KA12712E | X | | | X | X | | 08-01177 | . |
| KA12742 | X | | | X | | X | 08-01178 | . |
| KA12745 | X | | | X | | X | 08-01180 | . |
| KA12745E | X | | | X | X | | 08-01181 | . |
| KA12778 | | X | | X | | X | 08-01146 | . |
| KA12778E | | X | | X | X | | 08-01182 | . |
| KA12790 | X | | | X | | X | 08-01183 | . |
| KA12790E | X | | | X | X | | 08-01184 | . |
| KA12828 | | X | | X | | X | 08-01185 | . |
| KA12828E | | X | | X | X | | 08-01186 | . |
| KA12851 | X | | | X | | X | 08-01188 | . |
| KA12851E | X | | | X | X | | 08-01189 | . |
| KA12854 | X | | | X | | X | 08-01190 | . |
| KA12854E | X | | | X | X | | 08-01191 | . |
| KA12865 | X | | | X | | X | 08-01192 | . |
| KA12865E | X | | | X | X | | 08-01193 | . |
| KA12890 | X | | | X | | X | 08-01194 | . |
| KA12890E | X | | | X | X | | 08-01195 | . |
| KA12932 | | X | | X | | X | 08-01147 | . |
| KA12932E | | X | | X | X | | 08-01196 | . |
| KA14001 | | X | X | | | X | 08-01148 | . |
| KA14001E | | X | X | | | X | 08-01086 | . |
| KA14002 | | X | X | | | X | 08-01150 | . |
| KA14002E | | X | X | | X | | 08-01151 | CALL |
| KA14004 | | X | X | | | X | 08-01152 | . |
| KA14004E | | X | X | | X | | 08-01197 | . |
| KA14033 | X | | X | | | X | 08-01198 | . |
| KA14033E | X | | X | | X | | 08-01199 | . |
| KA17001 | X | | | X | | X | 08-01202 | . |
| KA17001E | X | | | X | X | | 08-01203 | . |
| KA17002 | X | | | X | | X | 08-01204 | . |
| KA17002E | X | | | X | X | | 08-01205 | . |
| KA17005 | X | | X | | | X | 08-01206 | . |
| KA17005E | X | | X | | X | | 08-01207 | . |
| KA17006 | X | | X | | | X | 08-01208 | . |
| KA17006E | X | | X | | X | | 08-01209 | . |
| KA17007 | X | | X | | | X | 08-01210 | . |
| KA17007E | X | | X | | X | | 08-01211 | . |
| KA17008 | X | | X | | | X | 08-01212 | . |
| KA17008E | X | | X | | X | | 08-01213 | . |
| KA17011 | | X | X | | | X | 08-01214 | . |
| KA17011E | | X | X | | X | | 08-01215 | . |
| KA12365 | X | | X | | | X | 08-01082 | . |
| KA14001E | | X | X | | X | | 08-01086 | . |
| KA11730 | X | | | X | | X | 08-01098 | . |
| KA11730E | X | | | X | X | | 08-01099 | . |
| KA11740 | X | | | X | | X | 08-01101 | . |
| KA11740E | X | | | X | X | | 08-01102 | . |
| KA12007E | X | | X | | X | | 08-01114 | . |
| KA12120 | X | | X | | | X | 08-01121 | . |
| KA12176E | X | | | X | X | | 08-01132 | . |
| KA12508 | | X | X | | | X | 08-01145 | . |

| P/N | BEND | SLICK | 8 CYL | ELBOW | STRAIGHT | Our P/n | Price | |
|----------|------|-------|-------|-------|----------|---------|----------|---|
| KA17012 | X | | | X | | X | 08-01216 | . |
| KA17012E | X | | | X | X | | 08-01217 | . |

SLICK MAGNETOS



4300 AND 6300 SERIES SLICK MAGNETOS

These new lightweight aircraft magnetos are being used by many new equipment manufacturers. Weigh only 3-3/4 lbs. compared to 6-1/4 lbs. for typical old style magnetos. All units carry a six-month warranty after delivery to the user. These new model magnetos are completely rebuildable. The old 4000/4100 magnetos may not be returned as an exchange unit for a new magneto of the same model. Most other Magnetos may be returned for core credit. Drive gears are not included.

IF NO CORE IS RETURNED, ADD \$150 TO THE PRICE OF A NEW MAGNETO.

ALL SLICK MAGNETO AND HARNESS PRICES SHOWN ARE WELL BELOW SLICK FACTORY LIST PRICE. WE WILL BEAT ANY COMPETITOR'S ADVERTISED PRICE!

Slick Harnesses are available in Black and Red.

Please Specify color choice at the time of order.

4300 SERIES (4-CYLINDER) MAGNETOS

| Application (See Note) | Magneto* | Rotation & Impulse | New Magneto (Exchange) | Complete Harness(2 Mags) | | |
|--|----------|--------------------|------------------------|--------------------------|--------|---|
| | | | | Sparkplug Connector | | |
| Continental A65-8, A75-8, C75-8 C85-8, C90-8 | 4330 | R.H. with Impulse | . | M2045 | 5/8-24 | . |
| Continental C75-12,-15 C85-12,-14,-15 C85-12F,-14F,-15F*** C90-12,-14,-16*** 0-200A,B,C | 4301 | L.H. with Impulse | . | M1780 | 5/8-24 | . |
| Lycoming 0-235 0-290***, 0-320, 0-360 | 4370 | L.H., no Impulse | . | M4001/ M4004 | 5/8-24 | . |
| IO-320E1B,E2B AEIO-320E1B,E2B AEIO-360B1C6,H1A | 4371 | L.H. with Impulse | . | M2508 | 3/4-20 | . |
| VW Conversion Single Ignition | 4316 | R.H. with Impulse | . | M2266 (1Mag) | 5/8-24 | . |

*4300 series replaces 4200 and feature improved cases and new bearings.
Drive Gear No. 36066 applicable to Cont. A65-8, A75-8, C75-8, C85-8, C90-8, C85-12-14-15, C90-12-14-16 and 0-200A,B,C w/ light accessory case.....

*** The magnetos shown will fit the engine but installation is not FAA approved. Form 337 required. Note 2: Specify adapter thickness. M2638-1 (.560"), M2638-2 (.660"), M2638-3 (.760"), M2637 (.810"), measured from mounting pad to front of engine gear.

PLEASE REMOVE DRIVE GEARS BEFORE RETURNING MAGNETO CORES FOR CORE CREDIT.

EP

Starts determined by engine manufacturer. Lag angles: 4350 - no lag, 4351 - 20° lag, 4281 - 5° lag. Magneto Flange Gaskets not included. Order Lic. #62224 or Cont. #535324.

6300 SERIES (6-CYLINDER) MAGNETOS

| Application | Magneto* | Rotation & Impulse | New Magneto (Exchange) | Complete Harness (2 Mags) | | |
|-------------------------------------|-----------------------------|--------------------|------------------------|---------------------------|--------|-----|
| | | | | Sparkplug Connector | | |
| Continental 0-300, C125***, C145 | 6364 | L.H. with Impulse | . | M2932 | 5/8-24 | . |
| | | | | M2935 | 3/4-20 | . |
| Continental GO-300 | 6367 | R.H. with Impulse | . | M2938 | 5/8-24 | . |
| | | | | --- | 3/4-20 | --- |
| Continental | 6362 or 6382 0-470 (All) | R.H. with Impulse | . | M1878 | 5/8-24 | . |
| | | | | M1480 | 3/4-20 | . |
| Continental TSIO-470, IO-520 | 6362 or 6382 | R.H. with Impulse | . | M1878 | 5/8-24 | . |
| | | | | M1480 | 3/4-20 | . |
| Continental IO-470 (All) | 6362 or 6382 680 Series | R.H. with Impulse | . | M1878 | 5/8-24 | . |
| | | | | M1480 | 3/4-20 | . |
| | | | | M1990 | 3/4-20 | . |

SLICK REBATE PROGRAM

Champion Aerospace offers the following cash values for upgrading piston aircraft engines to Slick Ignition products under their popular "REBATE PROGRAM":

Complete Engine Upgrade (2 mags+harness)...\$150.00

One Magneto.....\$30.00

One Ignition Harness.....\$35.00

Rebate does not apply to Slick Magneto cores. Factory rebates subject to change by factory. Aircraft Spruce will issue rebate credit upon receipt of acceptable cores.

Slick Magneto upgrade kits available for most Continental & Lycoming Engines. Provide engine make & model and spark plug size and request quotation on applicable upgrade kit. 6300 Series Replaces 6210 & 6262 magnetos. Includes new improved case and bearings.

SLICK IGNITION KITS



SLICK IGNITION KITS

We offer complete Slick factory upgrade/conversion kits for virtually all general aviation aircraft. These kits include two factory new Slick magnetos, a complete Slick ignition harness, and conversion information. A \$150.00 factory rebate is available for these kits. Rebate does not apply to Slick Magneto Cores. Add . core charge to the kit prices which is refundable upon return of the two old magnetos to Aircraft Spruce. Specify aircraft and engine make and model when ordering. Aircraft Spruce will issue rebate credit upon receipt of acceptable cores.

aircraft and engine make and model when ordering. Aircraft Spruce will issue rebate credit upon receipt of acceptable cores.

| Slick Kit Part No. | Engine Application 4 Cyl. Single Impulse 2 Mags & 1 Set Ignition Harness | Spark Plug Size | Part No. | Price Add . Core Charge to all kits |
|--------------------|--|---------------------|----------|-------------------------------------|
| KA516 | Lycoming: 0-235-C1A, C1C, C2C, E1, E2B, F1, G2B, H2C, J2B 0-320-A1A, A2D, C1A, D1D, D2G, D2H, D3G, E1J, E2D, E2E, E2G, E3D10-320-B1B, E1B, E2B, A2B, AE10-320-E1B, E2B 0-360-A1NG, A2H, A4K, A4M, B1A, C1E, C1F, C2B, C2E, D1A 10-360-B1FG A10-360-A2B AE10-360-A2B, B1F6, B2F6, H1A | 5/8" PLUGS INCLUDED | 08-01472 | . |
| | | | 08-01473 | . |
| K4315 | Lycoming: 0-235-C1C, C2C, E2B, F1, G2B, J2B, N2C, 0-320-A1A, B1A, B2A, C1A, C2A, C2B, C2C, C3A, C3B, C3C, D1D, D2G, D2H, D3G, E1J, E2D, E2E, E2G, E3D, 0-320-B1B, E1B, A10-320-A2B, AE10-320-E1B, E2B 0-360-A1NG, A2H, A4K, B1A, C1E, C1F, C2B, C2E, D1A 10-360-B1F6 A10-360-A2B AE10-360-A2B, B1F6, B2F6, H1A | 3/4" PLUGS INCLUDED | 08-01389 | . |
| | | | 08-01391 | . |
| Slick Kit Part No. | Engine Application 4 Cyl. Single Impulse | Spark Plug Size | Part No. | Price Add . Core Charge to all kits |
| K4517 | Lycoming: 0-235-C1, C2A, E2A, F2A; G1, G2A, J2A 0-290-D 0-320-A1B, A2A, A2B, A3A, A3B B1A, B1B, B2A, B2B, B3A, B3B, C2A, C2B, C2C, C3A, C3B, C3C, D1A, E1A, E2A, E2H 10-320-B1C, B2A, E1A, E2A, AE10-320-E1A, E2A 0-360-A1AWD, A2A, A1H, A3A, A4A, A4J, B2A, C1A, C1G, C2A, D2A 10-360-A1B, B4A, AE10-360-A1D, B4A | 5/8" PLUGS INCLUDED | 08-01493 | . |
| | | | 08-01491 | . |
| K4317 | Lycoming: 0-235-C1, C2A, C2B, E2A, F2A, F2B; G1, G2A, J2A 0-290-D 0-320-A1B, A2A, A2B, A3A, A3B, B2B, B3A, B3B, D1A, D1C, D1F, D2A, D2C, E1A, E2A, E2H, E3H 10-320-B1C, B2A, D1A, D1B, E1A, E2A A10-320-A1B, B1B, C1B AE10-320-D1B, D2B, E1A, E2A 0-360-A1A, A1AWD, A1FG, A1G, A1G6, A1H, A2A, A2F A2G, A3A, A4A, AHG, A4J, B2A, C1A, C2A, D2A 10-360-A1B, B4A, C1D6, F1A AE10-360-B4A | 3/4" PLUGS INCLUDED | 08-01414 | . |
| | | | 08-01418 | . |
| K4520 | Continental: C-75-12, 15 C-85-14, 15, C-90-12, 14, 16, 16F 0-200-A, B, C | 5/8" | 08-01524 | . |
| K4335 | Consists of 4333 AMAG + One Drive Gear | N/A | K4335 | . |
| K4334 | A-65 All, A-75 All (Except -12,-15) C-85 All (Except-12, 14, & 15) Includes Drive Gears | 5/8" | 08-01458 | . |
| Slick Kit Part No. | Engine Application 6 Cyl. Single Impulse | Spark Plug Size | Part No. | Price Add . Core Charge to all kits |
| K6520 | 0-470, B-C1, C, E, G, | 5/8" | 08-02819 | . |
| | | | 08-02821 | . |
| K6320 | G-C1, H, J, K, K-C1, L, L-C1, M, M-C1, N, P, R, S, U 10-470-A, C, D, E, F, G, H, J, K, L, LO, M, N, P, R, S, T, U, V, VO10-520-A, B, BA, BB, C, CB, D, E, F, G, H, J, K, L, M, MB, N, NB | 3/4" PLUGS INCLUDED | 08-02578 | . |
| | | | 08-02581 | . |

The following information will aid you in selecting the correct magneto, upgrade kit, or ignition harness:

1. Engine Manufacturer: _____

2. Engine Model Number: _____

3. Engine Type (4 or 6 Cylinder): _____

4. Current Ignition System Manufacturer: _____

a) Number of impulse coupled magnetos (1 or 2): _____

Magneto Shaft Rotation (Right or Left) - See dataplate on current magneto _____
Lag Angle _____

b) Number of Direct Drive (Non-Impulse) Magnetos _____

c) Number of Retard Breaker Magnetos _____

d) Are the magnetos pressurized? _____

e) Spark plug size (5/8" or 3/4") _____

5. Do you want to upgrade from a single impulse to a dual impulse system? _____

If yes, an additional drive gear and/or adapter purchase may be required.

6. Are you upgrading from a 600 Series to a 6200 Series magneto? _____

If yes, you will need to purchase an M3154 Adapter or a magneto equipped with an M3154 Adapter to be able to reuse the existing harness. Alternately, purchase a new harness configured for 6200 Series magnetos.

7. Are you upgrading a complete engine form a TCM/ Bendix to a Slick system? _____

If yes, purchase a complete Engine Upgrade Kit.

Add \$300.00 core charge to all kit prices (refundable with return of old Magnetos) Request quotation for kits for unlisted engines.

* Plugs included.


SLICK HARNESSSES – SLICK START – LASAR

SLICK IGNITION HARNESSSES

| Engine | Magneto | Plug | Model | Part No. | Price | Engine | Magneto | Plug | Model | Part No. | Price |
|--------------------------|-----------------|--------|-------|----------|-------|-------------------------|------------------|--------|-------|----------|-------|
| Cont A65, A75, C85, C90 | SLK 4300 series | 5/8-24 | M2045 | 08-02346 | . | Cont O/IO-470, 10-520 | SLK 6300 series | 3/4-20 | M2381 | 08-03213 | . |
| Cont C75, C85, C90, O200 | BDX S4-20/S-200 | 5/8-24 | M2007 | 08-02127 | . | Cont O/IO-520 | BDX S6-20/S6-200 | 5/8-24 | M1978 | 08-02106 | . |
| Cont O-200 | BDX S4-20/S-200 | 5/8-24 | M2007 | 08-02127 | . | Cont TSIO-520 | BDX S6-20/S-200 | 3/4-20 | M1730 | 08-02079 | . |
| Cont O-200 | SLK 4301 | 5/8-24 | M1780 | 08-02140 | . | LYC O-320 | BDX S4-20/S-200 | 5/8-24 | M2364 | 08-03193 | . |
| Cont O-300 | BDX S6-20/S-200 | 5/8-24 | M2130 | 08-03134 | . | LYC O-360 | BDX S4-1200 | 5/8-24 | M2365 | 08-03197 | . |
| Cont O-300 | SLK 6300 series | 5/8-24 | M2932 | 08-05029 | . | LYC O-320, O-360 | BDX S4-20/S-200 | 3/4-20 | M2360 | 08-03179 | . |
| Cont C-125/145, O-300 | SLK 664 | 5/8-24 | M1884 | 08-04033 | . | LYC O-235, O-320, O-360 | SLK 4300 series | 5/8-24 | M4004 | 08-05302 | . |
| Cont O/IO-470 | SLK 662 | 3/4-20 | M1480 | 08-02049 | . | LYC O-235, O-320, O-360 | SLK 4300 series | 3/4-20 | M2508 | 08-03749 | . |
| Cont O/IO-470 | SLK 662 | 5/8-24 | M1878 | 08-04024 | . | LYC O-540 | BDX S6-20/S-200 | 5/8-24 | M2121 | 08-02885 | . |
| Cont O/IO-470, 10-520 | BDX S-1200 | 3/4-20 | M1740 | 08-02084 | . | LYC O-540 | BDX S6-20/S-200 | 3/4-20 | M2120 | 08-02881 | . |
| Cont O/IO-470, 10-520 | SLK 6300 series | 5/8-24 | M2828 | 08-04812 | . | LYC O-540 | SLK 6300 series | 5/8-24 | M6000 | 08-05452 | . |
| | | | | | | LYC O-540 | SLK 6300 series | 3/4-20 | M6003 | 08-05468 | . |


*Available in Black or red. Part Numbers listed in chart above are for black. Please specify color at time of order.





SLICK START

The FAA-PMA approved SlickStart™ magneto booster system integrates solid state electronics with conventional ignition hardware to deliver optimum spark energy for improved engine starting under all operating conditions. SlickStart™ delivers over 400% more spark energy during start than conventional impulse coupled or retard breaker systems. This added energy enables the magnetos to fire partially fouled spark plugs, ignite less than optimum fuel mixtures, improve hot engine restarts and improve starting performance during extreme cold weather operations. SlickStart™ is designed to replace all TCM/Bendix starting vibrators used in conjunction with Slick Aircraft Products magnetos. SlickStart™ is also approved for use with Slick impulse coupled magnetos to enhance engine starting performance. SlickStart™ is not approved for installation on any airframe equipped with TCM/Bendix 20, 200, 1200, D-2000, or D-3000 series impulse coupled or retard breaker magnetos. SlickStart™ can be installed with either impulse coupled or retard breaker magnetos and can be used with either 12V or 24V electrical systems. Fits all Slick impulse coupled and retard breaker 4200/6200 Series and 4300/6300 Series magnetos. Slick Start for Slick Magnetos P/N 08-01000



LASAR ELECTRONIC IGNITION SYSTEM BY CHAMPION

LASAR®, which stands for Limited Authority Spark Advance Regulator, is the first microprocessor based engine control system approved by the FAA for general aviation piston aircraft. With the system operating in its automatic mode, cylinder head temperature, manifold pressure, and engine speed (RPM) are monitored by the LASAR controller to establish and command the optimum ignition timing and spark energy to produce maximum torque from the engine. LASAR has an inherent mechanical magneto backup system that automatically assumes control if electrical power is interrupted or if the microprocessor detects a system fault. STC approval has been granted for most 320, 360 and 540 engines. Installation requires replacement of standard magnetos with Lasar magnetos, a LASAR Control Box, which is mounted to the firewall, a low-voltage control harness that carries the electronic signals between the system components. Specify exact aircraft and Engine Models for quotation or Lasar systems.

Benefits from LASAR include:

- * Better engine starting with 3 times more spark energy and higher output voltage.
- * Faster Rate of Climb
- * Smoother transition in ignition timing from engine start to idle
- * EGT reduced by 150°F on average
- * Increased spark plug life
- * Up to 8% Increased Horsepower.
- * Up to 12% Reduced Fuel Consumption

| Components | Part No. | Price |
|--------------------------------|----------|-------|
| Champion 4771 Slick Lasar Mag. | 08-06224 | . |
| Champion 4755 Slick Lasar Mag. | 08-06162 | . |
| Champion 4776 Slick Lasar Mag. | 08-06163 | . |
| Champion 6755 Slick Lasar Mag. | 08-06164 | . |
| Champion 6766 Slick Lasar Mag. | 08-06165 | . |
| Champion 6776 Slick Lasar Mag. | 08-06166 | . |

| Components | Part No. | Price |
|---------------------------------------|----------|-------|
| Champion LC1011-04 Lasar Controller | 08-06167 | . |
| Champion LC1011-10 Lasar Controller | 08-06168 | . |
| Champion LC1011-14 Lasar Controller | 08-06169 | . |
| Champion LC101115 Lasar Controller | 08-06170 | . |
| Champion Lasar Controller Core Charge | 08-14778 | . |

CALL AIRCRAFT SPRUCE FOR THE BEST PRICE ON LASAR SYSTEMS!



SLICK MAGNETO ASSEMBLY & TIMING KIT

T-100 Assembly and Timing Kit for field-repairable Slick 4300/6300 Series Magnetos. P/N 07-00788.....

CHAMPION IGNITION HARNESSSES



- Heat resistant polymer coating has been specially engineered for high temperature engine environments.
- 5 mm conductor contains 19 strand of stainless steel wire.
- Flexible, copper-tin, nickel plated braid reduces EMI. Performance-proven leads offered in straight or elbowed configurations.
- Plated-steel nut offers greater strength than aluminum nuts.
- Replaceable spring saves you time and money.

COMPLETE HARNESS ASSEMBLIES STRAIGHT SPARK PLUG CONNECTOR

| | |
|---------|---|
| CH11480 | . |
| CH11730 | . |
| CH11740 | . |
| CH11780 | . |
| CH11878 | . |
| CH11884 | . |
| CH11950 | . |
| CH11978 | . |
| CH12007 | . |
| CH12015 | . |
| CH12037 | . |
| CH12120 | . |
| CH12121 | . |
| CH12130 | . |

| | |
|---------|---|
| CH12154 | . |
| CH12157 | . |
| CH12176 | . |
| CH12216 | . |
| CH12235 | . |
| CH12360 | . |
| CH12364 | . |
| CH12365 | . |
| CH12381 | . |
| CH12423 | . |
| CH12508 | . |
| CH12778 | . |
| CH12779 | . |
| CH12932 | . |

COMPLETE HARNESS ASSEMBLIES ELBOW SPARK PLUG CONNECTOR

| | |
|----------|---|
| CH14001 | . |
| CH14002 | . |
| CH14004 | . |
| CH11730E | . |
| CH11740E | . |
| CH11780E | . |
| CH12007E | . |
| CH12015E | . |
| CH12121E | . |
| CH12154E | . |
| CH12364E | . |
| CH12365E | . |
| CH12381E | . |
| CH14001E | . |

IGNITION HARNESS ASSEMBLIES

| | |
|----------|---|
| CH12037E | . |
| CH12120 | . |
| CH12120E | . |
| CH12130E | . |
| CH12157E | . |
| CH12176E | . |
| CH12235E | . |
| CH12360E | . |
| CH14002E | . |
| | |
| | |
| | |
| | |

E-MAG ELECTRONIC IGNITION



Replacement Drive Gear

E-Mag is a next-generation electronic ignition, designed to serve as an upgrade or replacement for traditional aircraft engine magnetos. The idea behind a next-generation "anything" is that it 1) builds on what came before, and 2) gives more of what the customer wants. EICAD™ expanded controls - E-MAG interactive control and display is an optional set of ignition control capabilities built into our newest series ignitions. • Customize Tach Output Signal • Monitor/Change/Store your preferred timing shift • Ignition status reports (roughly 3 pounds and 6.25" long with plug wires attached). Sealed electronics are impervious to water, dirt, and oil. The P model draws power from the aircraft buss, but is backed up by a built-in three phase brushless alternator. Forget about batteries or keeping a magneto for back-up. Includes a lockout feature that guarantees the ignition will not fire before TDC during start-up. Were this to occur, an expensive starter motor can be damaged or destroyed. Designed to endure significant voltage dips. Should take about two to three hours to install. Will let you set timing for one or both ignitions in about 60 seconds - without the need for any special tools. Detects whether it's installed on a right or left rotating engine, and adjusts automatically. Reuse your existing keyed (or other) kill switch to control E-MAG operation.

| Description | Part No. | Price |
|--|--|-------|
| "E" Model (E-MAG) Ignition - Ignition compatible with 4 cylinder Lycoming engines - includes mounting gasket and control plug. MAP sensor built in. | 07-01291 | . |
| "P" Model (P-MAG) Ignition - Same as the E model above, but has a built-in backup alternator. | 07-01292 | . |
| E-MAG Aircraft Harness - Trim-to-fit harness kit. Aircraft Harness kits include with the coil end fittings, tool, and appear on forms as "Air Packs". | 07-01293 (one ignition) 07-01294 (two ignition) | . |
| E-Mag P Model Ignition with Alternator 4C Continental - Ignition compatible with most 4 cylinder Lycoming and Continental O-200 engines. Specify Ignition type as follows: Lycoming (and like) engine P114-L4, Continental O-200 engines P114-C4 | 07-01311 | . |
| E-Mag E Model Ignition 4C Continental - Same as P model above, but without built-in alternator. Specify Ignition type as follows: Lycoming (and like) engine E114-L4, Continental O-200 engines E114-C4 | 07-01310 | . |
| Replacement E-MAG Lycoming Drive Gear | 07-01295 | . |
| Replacement E-MAG Continental drive gear adapter | 07-01314 | . |



ELECTROAIR IGNITION SYSTEMS



Electroair Ignition Systems come complete with everything needed to install the EIS. Comprehensive installation procedure leaves little room for error when installing your system. For more information on these kits please visit: www.aircraftspruce.com

| EIS-1 KIT | P/N | PRICE |
|--|----------|-------|
| 4-cylinder Electronic Ignition System comes with: Coil Pack, Controller, Mag Timing Housing, MAP Sensor, spark plug wires, instruction manual. Specify engine make and model. | 08-05953 | . |
| EIS-2 KIT | P/N | PRICE |
| 6-cylinder Electronic Ignition System comes with: Coil Pack, Controller, Crankshaft Timing Wheel, MAP Sensor, spark plug wires, instruction manual. Specify engine make and model. | 08-05954 | . |

| EIS-3 KIT | P/N | PRICE |
|--|----------|-------|
| Subaru EJ-22 4-cylinder Electronic Ignition System comes with: Coil Pack, Controller, Subaru Timing Wheel Kit (replaces COG pulley & factory pick-up), and instruction manual. | 08-05955 | . |
| EIS-4 KIT | P/N | PRICE |
| Rotorway RW 152 4-cylinder Electronic Ignition System comes with: Coil Pack, Controller, Trigger Wheel Kit (mounts on V-Belt Pulley), spark plug wires, and instruction manual. | 08-05956 | . |

CHAMPION IGNITION HARNESSSES

AIRCRAFT ENGINE APPLICATION CHART

| Engine Model | 5/8"-24 Spark Plugs (REM) | Magneto Type | 3/4"-20 Spark Plugs (RHM) | Magneto Type | Engine Model | 5/8"-24 Spark Plugs (REM) | Magneto Type | 3/4"-20 Spark Plugs (RHM) | Magneto Type | | |
|-------------------------|--|-------------------|---------------------------|-------------------|-------------------------|-----------------------------|--|---------------------------|----------------|-------------------|------------|
| TEXTRON LYCOMING | | | | | TEXTRON LYCOMING | | | | | | |
| O-235 | -C1, -C1A, -C1B, -C1C, -C2A, -C2C, -E1, -E1B, -E2A, -F1, -F1B, -F2A, -G1, -G1B, -G2A, -H2C, -J2A, -K2A, -K2C, -L2A, -L2C, -M1, -M2C, -M3C, -N2A, -N2C, -P1, -P2A, -P2C, -P3C | CH12364, CH12364E | BX S4-20, -200 | CH12360, CH12360E | BX S4-20, -200 | O-540 | -C4B5 | CH12154, CH12154E | BX S6-1200 | CH12157, CH12157F | BX S6-1200 |
| O-235 | -C2B, -E2B, -F2B, -G2B, -J2B, -K2B | CH12365, CH12365E | BX S4-1200 | CH12235, CH12235E | BX S4-1200 | O-540 | -C1B5, -N1A5, -C2C, -C4C5, -D4A5, -A1A, -A1A5, -A1B5, -A1C5, -A1D, -A1D5, -A2B, -A2D, -A3D5, -A4A5, -A4B5, -A4C5, -A4D5, -B1A5, -B1B5, -B2A5, -B2B5, -B4A5, -B4B5, -D1A5, -E4A5, -E4B5, -F1A5, -F1B5, -H1A5, -H2A5 | CH12121, CH12121E | BX S6-200 | CH12120, CH12120E | BX S6-200 |
| O-235 | -C1, -C1A, -C1B, -C1C, -C2A, -C2C, -E1, -E1B, -E2A, -F1, -F1B, -F2A, -G1, -G1B, -G2A, -H2C, -J2A, -K2A, -K2C, -L2A, -L2C, -M1, -M2C, -M3C, -N2A, -N2C, -P1, -P2A, -P2C, -P3C | CH14001, CH14001E | SL 4000 | CH12508, CH12508E | SL 4000 | TIO-540 | -C1A | CH12154, CH12154E | BX S6-1200 | | |
| O-235 | -D1, -D2, -D2A, -D2B, -D2C | CH14004, CH14004E | SL 4000 | | | TIO-540 | -A1A, -A1B, -A2A, -A2B | | | CH12037, CH12037E | BX S6-1200 |
| O-290 | -D1, -D2, -D2A, -D2B, -D2C | CH12364, CH12364E | BX S4-20, -200 | CH12360, CH12360E | BX S4-20, -200 | TELETYPE CONTINENTAL | | | | | |
| O-290 | -D2, -D2B | CH12365, CH12365E | BX S4-1200 | CH12235, CH12235E | BX S4-1200 | C-75 | -12, -15 | CH11780, CH11780E | SL 4000 | | |
| O-290 | -D, -D2, -D2A, -D2B, -D2C | CH14001, CH14001E | SL 4000 | CH12508, CH12508E | SL 4000 | C-75 | -12, -15 | CH12007, CH12007E | BX S4-20, -200 | | |
| O-290 | -D, -D2, -D2B, -D2C | CH14004, CH14004E | SL 4000 | | | C-85 | -12, -12FJ, -14, -15 | CH11780, CH11780E | SL 4000 | | |
| AEIO-320 | -E1A, -E1B, -E2A, -E2B | CH12364, CH12364E | BX S4-20, -200 | CH12360, CH12360E | BX S4-20, -200 | C-85 | -12, -12FJ, -14, -15 | CH12007, CH12007E | BX S4-20, -200 | | |
| AEIO-320 | -D1B, -D2B | CH12365, CH12365E | BX S4-1200 | CH12235, CH12235E | BX S4-1200 | C-90 | -12, -14, -16, -16F | CH11780, CH11780E | SL 4000 | | |
| AEIO-320 | -E1A, -E1B, -E2A, -E2B | CH14001, CH14001E | SL 4000 | CH12508, CH12508E | SL 4000 | C-90 | -12, -14, -16, -16F | CH12007, CH12007E | BX S4-20, -200 | | |
| AIQ-320 | -A1A, -A1B, -A2A, -A2B, -B1B, -C1B | CH12365, CH12365E | BX S4-1200 | CH12235, CH12235E | BX S4-1200 | C-125 | -ALL | CH11884, CH11884E | SL 600 | | |
| IO-320 | -A1A, -A2A, -B1A, -B1B, -B1C, -B2A, -C1A, -C1B, -E1A, -E1B, -E2A, -E2B, -F1A | CH12364, CH12364E | BX S4-20, -200 | CH12360, CH12360E | BX S4-20, -200 | C-125 | -2, -2H | CH12130, CH12130E | BX S6-200 | | |
| IO-320 | -B1D, -B1E, -D1A, -D1B, -D1C | CH12365, CH12365E | BX S4-1200 | CH12235, CH12235E | BX S4-1200 | C-125 | -ALL | CH12932, CH12932E | SL 6000 | CH12318, CH12318E | SL 600 |
| IO-320 | -A1A, -A2A, -B1A, -B1B, -B1C, -B2A, -C1A, -C1B, -E1A, -E1B, -E2A, -E2B, -F1A | CH14001, CH14001E | SL 4000 | CH12508, CH12508E | SL 4000 | C-145 | -ALL | CH11884, CH11884E | SL 600 | | |
| IO-320 | -E2A | CH14004, CH14004E | SL 4000 | | | C-145 | -2, -2H | CH12130, CH12130E | BX S6-200 | | |
| LIO-320 | -B1A, -C1A | CH12364, CH12364E | BX S4-20, -200 | CH12360, CH12360E | BX S4-20, -200 | C-145 | -ALL | CH12932, CH12932E | SL 6000 | CH12318, CH12318E | SL 600 |
| LIO-320 | -B1A, -C1A | CH14001, CH14001E | SL 4000 | CH12508, CH12508E | SL 4000 | E-165 | -2 | CH12176, CH12176E | BX S6-200 | CH12339, CH12339E | BX S6-200 |
| O-320 | -A1A, -A1B, -A2A, -A2B, -A2C, -A2D, -A3A, -A3B, -A3C, -B1A, -B1B, -B2A, -B2B, -B2C, -B3A, -B3B, -B3C, -C1A, -C1B, -C2A, -C2B, -C2C, -C3A, -C3B, -C3C, -D1A, -D1B, -D1D, -D2A, -D2B, -D2G, -D2H, -D2J, -D3G, -E1A, -E1B, -E2A, -E2B, -E2D, -E2G, -E2H, -E3D, -E3H | CH12364, CH12364E | BX S4-20, -200 | CH12360, CH12360E | BX S4-20, -200 | E-185 | -1, -3, -8, -9, -11 | CH12176, CH12176E | BX S6-200 | CH12339, CH12339E | BX S6-200 |
| O-320 | -D1C, -D1F, -D2C, -D2F, -E1C, -E1F, -E1J, -E2C, -E2F | CH12365, CH12365E | BX S4-1200 | CH12235, CH12235E | BX S4-1200 | O-200 | -A, -B, -C | CH11780, CH11780E | SL 4000 | | |
| O-320 | -A1A, -A1B, -A2A, -A2B, -A2C, -A2D, -A3A, -A3B, -A3C, -B1A, -B1B, -B2A, -B2B, -B2C, -B3A, -B3B, -B3C, -C1A, -C1B, -C2A, -C2B, -C2C, -C3A, -C3B, -C3C, -D1A, -D1B, -D1D, -D2A, -D2B, -D2G, -D2H, -D2J, -D3G, -E1A, -E1B, -E2A, -E2B, -E2D, -E2G, -E2H, -E3D, -E3H | CH14001, CH14001E | SL 4000 | CH12508, CH12508E | SL 4000 | O-200 | -A, -B, -C | CH12007, CH12007E | BX S4-20, -200 | | |
| O-320 | -A2A, -A2B, -A2C, -A3A, -A3B, -A3C, -B3C, -D1A, -D2A, -D2B, -E1A, -E2B | CH14004, CH14004E | SL 4000 | | | E-225 | -4, -8 | CH12176, CH12176E | BX S6-200 | CH12339, CH12339E | BX S6-200 |
| O-340 | -A1A, -A2A, -B1A | CH12364, CH12364E | BX S4-20, -200 | CH12360, CH12360E | BX S4-20, -200 | O-300 | -A, -B, -C, -D, -E | CH11884, CH11884E | SL 600 | | |
| O-340 | -A1A, -A2A, -B1A | CH14001, CH14001E | SL 4000 | CH12508, CH12508E | SL 4000 | O-300 | -A, -B, -C, -D, -E | CH12130, CH12130E | BX S6-200 | | |
| O-340 | -A1A, -A2A | CH14004, CH14004E | SL 4000 | | | O-300 | -A, -B, -C, -D, -E | CH12932, CH12932E | SL 6000 | CH12318, CH12318E | SL 600 |
| AEIO-360 | -A1A, -A1D, -A1E, -A2A, -B1B, -B4A, -H1A | CH12364, CH12364E | BX S4-20, -200 | CH12360, CH12360E | BX S4-20, -200 | IO-360 | -A, -C, -CB, -D, -DB, -G, -GB, -H, -HB, -J, -JB, -K, -KB | | | CH12015, CH12015E | BX S6-200 |
| AEIO-360 | -A1B, -A1B6, -A2B, -B1F, -B1F6, -B1G6, -B2F | CH12365, CH12365E | BX S4-1200 | CH12235, CH12235E | BX S4-1200 | IO-360 | -C, -D, -G | | | CH12778, CH12778E | SL 6000 |
| AEIO-360 | -A1A, -A1D, -A1E, -A2A, -B1B, -B4A, -H1A | CH14001, CH14001E | SL 4000 | CH12508, CH12508E | SL 4000 | ITSIO-360 | -E, -EB, -KB | | | CH12015, CH12015E | BX S6-200 |
| AIQ-360 | -A1A, -A1B, -A2A, -A2B, -B1B | CH12365, CH12365E | BX S4-1200 | CH12235, CH12235E | BX S4-1200 | TSIO-360 | -A, -B, -C, -D, -DB, -E, -EB, -F, -FB, -GB, -H, -HB, -JB, -KB, -LB, -MB | | | CH12778, CH12778E | SL 6000 |
| AIQ-360 | -A1A, -B1A, -B1B, -C1A | CH12364, CH12364E | BX S4-20, -200 | CH12360, CH12360E | BX S4-20, -200 | GIO-470 | -A | CH11978, CH11978E | BX S6-200 | CH11730, CH11730E | BX S6-200 |
| HIO-360 | -C1B, -D1A | CH12365, CH12365E | BX S4-1200 | CH12235, CH12235E | BX S4-1200 | IO-470 | -A, -C, -D, -E, -F, -G, -H, -J, -K, -L, -L, -M, -N, -P, -R, -S, -T, -U, -V, -VO | CH11878, CH11878E | SL 600 | CH11480, CH11480E | SL 600 |
| HIO-360 | -A1A, -B1A, -B1B, -C1A | CH14001, CH14001E | SL 4000 | CH12508, CH12508E | SL 4000 | IO-470 | -C, -D, -E, -F, -G, -H, -L, -M, -N, -P, -R, -S, -U, -V | CH11978, CH11978E | BX S6-200 | CH11730, CH11730E | BX S6-200 |
| HIO-360 | -B1A | CH14004, CH14004E | SL 4000 | | | IO-470 | -F, -J, -K, -L, -N, -S | | | CH11740, CH11740E | BX S6-1200 |
| HO-360 | -A1A, -B1A, -B1B | CH12364, CH12364E | BX S4-20, -200 | CH12360, CH12360E | BX S4-20, -200 | IO-470 | -F, -J, -K, -L, -N, -S | | | CH12216, CH12216E | BX S6-1200 |
| HO-360 | -A1A, -B1A, -B1B | CH14001, CH14001E | SL 4000 | CH12508, CH12508E | SL 4000 | IO-470 | -A, -C, -D, -E, -F, -G, -H, -J, -K, -L, -L, -M, -N, -P, -R, -S, -T, -U, -V, -VO | | | CH12381, CH12381E | SL 6000 |
| HO-360 | -A1A | CH14004, CH14004E | SL 4000 | | | IO-470 | -F, -J, -K, -L, -N, -S | | | CH12778, CH12778E | SL 6000 |
| IO-360 | -A1A, -A1D, -A2A, -B1A, -B1B, -B1C, -B1D, -B4A, -C1A, -K2A | CH12364, CH12364E | BX S4-20, -200 | CH12360, CH12360E | BX S4-20, -200 | O-470 | -A, -B, -C, -D, -E, -G, -G-C, -H, -J, -K, -K-C, -L, -L-C, -M, -M-C, -N, -P, -R, -S, -U | CH11878, CH11878E | SL 600 | CH11480, CH11480E | SL 600 |
| IO-360 | -A1B, -A1B6, -A1C, -A1D6, -A2B, -A2C, -B1E, -B1F, -B2E, -B2F, -B2F6, -C1B, -C1C, -C1C6, -D1A, -E1A, -F1A | CH12365, CH12365E | BX S4-1200 | CH12235, CH12235E | BX S4-1200 | O-470 | -A, -B, -E, -M, -P, -R | CH11978, CH11978E | BX S6-200 | CH11730, CH11730E | BX S6-200 |
| IO-360 | -C1F6 | CH12423, CH12423E | BX S4-1200 | CH12616, CH12616E | BX S4-1200 | O-470 | -R, -S, -U | | | CH11740, CH11740E | BX S6-1200 |
| IO-360 | -A1A, -A1D, -A2A, -B1A, -B1B, -B1C, -B1D, -B4A, -C1A, -K2A | CH14001, CH14001E | SL 4000 | CH12508, CH12508E | SL 4000 | O-470 | -R, -S, -U | | | CH12216, CH12216E | BX S6-1200 |
| IO-360 | -A1C, -A2B, -A2C, -B2E, -C1B, -C1C, -D1A | CH14002, CH14002E | SL 4000 | | | O-470 | -A, -B, -B-C, -C, -E, -G, -G-C, -H, -J, -K, -K-C, -L, -L-C, -M, -M-C, -N, -P, -R, -S, -U | | | CH12381, CH12381E | SL 6000 |
| IO-360 | -B1A, -B1B, -B1D, -B4A | CH14004, CH14004E | SL 4000 | | | O-470 | -R, -S, -U | | | CH12778, CH12778E | SL 6000 |
| IYO-360 | -A1A | CH12364, CH12364E | BX S4-20, -200 | CH12360, CH12360E | BX S4-20, -200 | TSIO-470 | -B, -C, -D | CH11978, CH11978E | BX S6-200 | CH11730, CH11730E | BX S6-200 |
| IYO-360 | -A1A | CH14001, CH14001E | SL 4000 | CH12508, CH12508E | SL 4000 | GTSIO-520 | -C, -D, -F, -H, -K, -L, -M, -N | | | CH11950, CH11950E | BX S6-1200 |
| LIO-360 | -A1H6, -C1E6 | CH12365, CH12365E | BX S4-1200 | CH12235, CH12235E | BX S4-1200 | IO-520 | -A, -B, -BA, -BB, -C, -CB, -D, -E, -G, -H, -J, -K, -L, -M, -N, -NB, -P, -R, -T, -U, -V, -WB | CH11878, CH11878E | SL 600 | CH11480, CH11480E | SL 600 |
| LIO-360 | -C1E6 | CH12423, CH12423E | BX S4-1200 | CH12616, CH12616E | BX S4-1200 | IO-520 | -A, -B, -BA, -BB, -C, -CB, -D, -E, -G, -H, -J, -K, -L | CH11978, CH11978E | BX S6-200 | CH11730, CH11730E | BX S6-200 |
| O-360 | -A1A, -A1C, -A1D, -A1H, -A1NG, -A2A, -A2D, -A2E, -A2H, -A3A, -A3D, -A4A, -A4D, -A4J, -A4K, -A4N, -A4N, -B1A, -B1B, -B2A, -B2B, -C1A, -C1C, -C1E, -C1G, -C2A, -C2B, -C2C, -C2D, -C2E, -D1A, -D2A, -D2B, -F1A6, -G1A6 | CH12364, CH12364E | BX S4-20, -200 | CH12360, CH12360E | BX S4-20, -200 | IO-520 | -A, -B, -BA, -BB, -C, -CB, -D, -E, -G, -H, -J, -K, -L | | | CH12216, CH12216E | BX S6-1200 |
| O-360 | -A1F, -A1F6, -A1G, -A1G6, -A2F, -A2G, -A4G, -C1F | CH12365, CH12365E | BX S4-1200 | CH12235, CH12235E | BX S4-1200 | IO-520 | -M, -NB, -N, -NB | | | CH12381, CH12381E | SL 6000 |
| O-360 | -A1A, -A1C, -A1D, -A1H, -A1NG, -A2A, -A2D, -A2E, -A2H, -A3A, -A3D, -A4A, -A4D, -A4J, -A4K, -A4N, -A4N, -B1A, -B1B, -B2A, -B2B, -C1A, -C1C, -C1E, -C1G, -C2A, -C2B, -C2C, -C2D, -C2E, -D1A, -D2A, -D2B, -F1A6, -G1A6 | CH14001, CH14001E | SL 4000 | CH12508, CH12508E | SL 4000 | IO-520 | -A, -B, -BA, -BB, -C, -CB | | | CH12778, CH12778E | SL 6000 |
| VO-360 | -A1A, -A1B, -B1A | CH12364, CH12364E | BX S4-20, -200 | CH12360, CH12360E | BX S4-20, -200 | IO-520 | -D, -E, -F, -J, -K, -L | | | CH12778, CH12778E | SL 6000 |
| VO-360 | -A1A, -A1B, -B1A | CH14001, CH14001E | SL 4000 | CH12508, CH12508E | SL 4000 | ITSIO-520 | -AE | | | CH11740, CH11740E | BX S6-1200 |
| AEIO-540 | -D4A5 | CH12121, CH12121E | BX S6-200 | CH12120, CH12120E | BX S6-200 | ITSIO-520 | -AE | | | CH12216, CH12216E | BX S6-1200 |
| IO-540 | -A1A5, -B1A5, -B1B5, -B1C5, -C1B5, -C1C5, -C2C, -C4B5, -D4A5, -E1A5, -G1A5, -K1C5, -K1D5, -N1A5 | CH12121, CH12121E | BX S6-200 | CH12120, CH12120E | BX S6-200 | ITSIO-520 | -AE | | | CH12778, CH12778E | SL 6000 |
| | | | | | | IO-550 | -A, -B, -BB, -BE, -C, -CE, -D, -DB, -E, -EB, -F, -G, -H, -J, -JB, -K, -KB, -L, -LB, -M, -N, -NB, -P, -R, -T, -U, -V, -WB | CH11878, CH11878E | SL 600 | CH11480, CH11480E | SL 600 |
| | | | | | | IO-550 | -AE, -AF, -B, -C, -D, -DB, -E, -G, -H, -J, -JB, -K, -KB, -L, -LB, -M, -N, -NB, -P, -R, -T, -U, -V, -WB | | | CH11740, CH11740E | BX S6-1200 |
| | | | | | | IO-550 | -G, -H, -J, -JB, -K, -KB, -L, -LB, -M, -N, -NB, -P, -R, -T, -U, -V, -WB | | | CH11740, CH11740E | BX S6-1200 |
| | | | | | | IO-550 | -AE, -AF, -C, -D, -DB, -G, -H, -J, -JB, -K, -KB, -L, -LB, -M, -N, -NB, -P, -R, -T, -U, -V, -WB | | | CH12216, CH12216E | BX S6-1200 |
| | | | | | | IO-550 | -A, -B, -BB, -BE, -C, -CE, -D, -DB, -E, -EB, -F, -G, -H, -J, -JB, -K, -KB, -L, -LB, -M, -N, -NB, -P, -R, -T, -U, -V, -WB | | | CH12381, CH12381E | SL 6000 |
| | | | | | | IO-550 | -AE, -AF, -B, -C, -D, -DB, -E, -G, -H, -J, -JB, -K, -KB, -L, -LB, -M, -N, -NB, -P, -R, -T, -U, -V, -WB | | | CH12778, CH12778E | SL 6000 |
| | | | | | | IO-550 | -AE, -AF, -B, -C, -D, -DB, -E, -G, -H, -J, -JB, -K, -KB, -L, -LB, -M, -N, -NB, -P, -R, -T, -U, -V, -WB | | | CH11730, CH11730E | BX S6-200 |
| | | | | | | IO-550 | -B, -C, -D, -E, -L | CH11978, CH11978E | BX S6-200 | CH11740, CH11740E | BX S6-1200 |
| | | | | | | IO-550 | -B, -C, -D, -E, -L | | | CH12216, CH12216E | BX S6-1200 |
| | | | | | | IO-550 | -A, -B, -C, -D | | | CH12381, CH12381E | SL 6000 |
| | | | | | | ITSIO-550 | -B | | | CH11740, CH11740E | BX S6-1200 |
| | | | | | | ITSIO-550 | -B | | | CH12216, CH12216E | BX S6-1200 |
| | | | </ | | | | | | | | |

SHIELDED IGNITION HARNESSSES



AERO-LITE FAA APPROVED SHIELDED IGNITION HARNESSSES

Skytronics Aero-Lite harnesses are manufactured to rigid FAA-PMA and MIL-3702 specifications and are warranted to T.B.O. They are available for Lycoming, Continental and Franklin engines and come complete with all tiedowns and clamps. Original Aero-Lite harnesses feature the unique, screw-in magneto plate for easy replacement of worn-out leads. Aero-Lite II harnesses are built with new swaged (PMA) magneto plates, similar to those on original factory harnesses. Aero-Lite Custom harnesses use the customers original swaged magneto plates and are rebuilt to rigid Aero-Lite harness standards. Aero-Lite harnesses are available with or without 90° brass spark plug elbow fittings (see price table). Specify wire color choice of sky blue (standard), black, or red.



| Continental Engines | | | Lycoming Engines | | |
|---------------------|----------------|-------------------|--------------------|----------------|-------------------|
| Aero-Lite Part No. | replaces Slick | replaces Champion | Aero-Lite Part No. | replaces Slick | replaces Champion |
| C16-2BS-II | M1730 | CH11730 | A20-2AS-II | M2121 | CH12121 |
| C16-4BS-II | M1740 | CH11740 | A20-4AS-II | M2154 | CH12154 |
| C16-2AS-II | M1978 | CH11978 | A30-1BS-II | M2360 | CH12360 |
| C31-1AS-II | M2007 | CH12007 | A30-1AS-II | M2364 | CH12364 |
| C9-2BS-II | M2015 | CH12015 | A30-3AS-II | M2365 | CH12365 |
| C1-5AS-II | M2045 | CH12045 | A30-5AS-II | M4001 | CH14001 |
| C3-2AS-II | M2130 | CH12130 | DUALS* | | |
| C1-1AS-II | M2351 | CH12351 | A45-10AS | M2917 | 10-821414-4 |
| C16-11BS-II | M2381 | CH12381 | | | |
| C19-11AS-II | M2932 | CH12932 | | | |

Stock 4 Cylinder Harnesses
 Stock 6 Cylinder Harnesses
 Stock 4 Cyl Dual Harnesses

SEE WWW.AIRCRAFTSPRUCE.COM FOR LISTING OF STOCKED AEROLITE HARNESSSES.

*Core deposit of \$125 required unless dual magneto cover accompanies order.

**Call us for prices on 8-cylinder harnesses or individual leads.

PRICES FOR SPECIAL ORDER AERO-LITE HARNESSSES

| | | |
|---|--|--|
| Aero-Lite Original harnesses machined lead fittings screw into threaded magneto plate ports | 4-cyl. Engines \$195.00 | 6-cyl. Engines \$275.00 |
| Aero-Lite II** machined with new swaged magneto plates | 4-cyl. Engines From \$159.00 | 6-cyl. Engines From \$220.00 |
| Aero-Lite Custom harnesses Rebuilt to customer specifications using original swaged magneto plate.** An example of the Aero-Lite Custom harness is the dual Bendix harness. | 4-cyl. Bendix | 6-cyl. Bendix |
| CALL FOR QUOTE | | |
| * Core deposit of \$125 required unless dual magneto accompanies order. **Call for prices on 8-cylinder harnesses or individual leads. | | |
| Note: For 90° brass spark plug elbow fittings, add \$60 to 4-cylinder prices, and \$80 to 6-cylinder prices. | | |
| All other Aero-Lite harnesses normally ship within 2 days. | | |

ORDERING IS SIMPLE! JUST SPECIFY:

Harness Leads: Threaded or Swaged
 Lead Termination: 90° Elbows or Straight fittings
 Spark Plug Size: REM (5/8") or RHM (3/4")
 Complete Engine Make and Model: _____

Complete Magneto Type: _____

Wire Color; Blue, Black, Red or Yellow: _____

... AND WE'LL DO THE REST!

LIGHTWEIGHT HIGH TEMPERATURE SHIELDED IGNITION HARNESSSES

MFG. BY ACS PRODUCTS CO.



New production ignition harnesses at remarkably low prices. Late type 5MM wire constructed of 16 strands of tightly braided copper wire impregnated with scuff resistant white silicone. All strands must fracture before a complete open circuit type failure occurs thus extending lead life. Lead flexibility is retained from -65° to 400° F. Moisture and cleaning solvent penetration is eliminated by the impregnated silicone coating. This extremely flexible wire lends itself to sharp bends thereby eliminating the need for old style harness elbows. No soldered joints in the grounding circuit. Custom made for most 4 cylinder and 6 cylinder engines using Bendix or Eisemann magnetos and 4 cylinder engines using Slick magnetos. Cable outlet plates are not furnished for Bendix and Eisemann mags as these are already installed on the magnetos in service. They must be purchased separately for new magneto installations. Harnesses for Slick magnetos are furnished with the backplates installed. Standard harnesses for the Bendix S4/S6 mags are fitted with a male nut which screws into the threaded outlet plate on the back of the mag. On some installations, the wires run through an unthreaded plate and attach directly to the mag terminals eliminating the use of the nut. If such a harness is required, send the old harness to us and it will be duplicated. Add \$60.00 to price of harness for custom work required. Harnesses for old style Bendix SF4 and SF6 magnetos are fitted with female nuts.

HARNESSSES FOR BENDIX AND EISEMANN MAGNETOS

All 4-Cylinder Harnesses (8 wires)
 All 6-Cylinder Harnesses (12 wires)
 (Not Available for Bendix S1200 Magnetos)
 Replacement Leads to 48" (Specify Length) **Call For Quote**
 (Bendix & Eisemann only)

HARNESSSES FOR SLICK MAGNETOS

For 4000, 4200 & 4300 Series Mags (4 Cyl.) Only

All Harnesses Furnished with Cable Ties and Clamps
 For plugs with 5/8-24 barrel size only.

| BENDIX MAGNETOS | | SLICK MAGNETOS | |
|-----------------|----------|---|-----------------|
| Engine/Magneto | Part No. | Engine/Magneto | Part No. |
| Cont. A-65/S4 | 12301-02 | VW (M2266) * | 12304-32 |
| C-85/S4 | 12301-05 | Lyc 0-235 (M2363) | 12304-33 |
| C-90/S4 | 12301-06 | 0-290 (M2363) | 12304-33 |
| 0-200/S4 | 12301-05 | 0-320,0-360 (M2363) | 12304-33 |
| LYC. 0-100/S4 | 12301-21 | Cont. 0-200 (1780) | 12304-31 |
| 0-235/S4 | 12301-21 | C-75 (1780) | 12304-31 |
| 0-290/S4 | 12301-21 | C-85 (1780) | 12304-31 |
| 0-320/S4 | 12301-22 | C-90 (1780) | 12304-31 |
| 0-360/S4 | 12301-22 | EISEMANN MAGNETOS | |
| Cont. A-65/SF4 | 12302-02 | Engine/Magneto | Part No. |
| A-75/SF4 | 12302-03 | Cont A65/LA-4 | 12303-04 |
| Lyc. 0-100/SF4 | 12302-20 | A75/LA-4 | 12303-04 |
| 0-235/SF4 | 12302-20 | C-85/LA-4 | 12303-07 |
| 0-290/SF4 | 12302-20 | E-185/LA-6 | 12306-12 |
| Cont. E-185/S6 | 12305-10 | Franklin 150/LA-6 | 12306-40 |
| E-225/S6 | 12305-11 | *This harness only comes with 4-leads. | |
| O-470/S6 | 12305-13 | ACS Products ignition harnesses can be used on experimental aircraft or on certified aircraft with field approval (FAA Form 337). If FAA/PMA harness is mandatory or if for use with 3/4" spark plugs, use Slick Bendix, Aero-Lite or Champion harnesses. | |
| C-145/S6 | 12305-09 | | |
| O-300/S6 | 12305-09 | | |
| Lyc. 0-540/S6 | 12305-22 | | |
| IO-540/S6 | 12305-22 | | |
| Franklin165/S6 | 12305-41 | | |
| Cont.C-125-SF6 | 12307-08 | | |
| Lyc.0-435/SF6 | 12307-23 | | |

EP

AUTOLITE® AVIATION SPARK PLUG APPLICATION CHART

| FAA-PMA Approved Engine Applications | Massive Electrode | | | | Fine-Wire Electrode | | | | | | | | |
|--|-------------------|----------------|----------------|----------------|---------------------|----------------|----------------|----------------|---------|---------|---------|---------|---------|
| | 5/8"-24 thread | 3/4"-20 thread | 5/8"-24 thread | 3/4"-20 thread | 5/8"-24 thread | 3/4"-20 thread | 5/8"-24 thread | 3/4"-20 thread | | | | | |
| | UREB37E | UREM37BY | UREM38E | UREM40E | URHB32E | URHB37E | URHM38E | URHM40E | UREB36S | UREM38S | URHB32S | URHB36S | URHM38S |
| Textron Lycoming | | | | | | | | | | | | | |
| AEIO-320: D1B, D2B, E1A, E1B, E2A, E2B | x | x | x | x | | | x | x | x | x | | | x |
| AEIO-360: A2A, A2C | x | x | x | x | | | x | x | x | x | | | x |
| AEIO-360: A2B | x | x | x | x | | | x | x | x | x | | | x |
| AEIO-360: A1D, A1E | x | x | x | x | | | x | x | x | x | | | x |
| AEIO-360: B1D, B1F6, B2F6, H1A | x | x | x | x | | | x | x | x | x | | | x |
| AEIO-360: B1H | | | | | | | | | x | x | | | x |
| AEIO-360: A1C | x | x | x | x | | | x | x | x | x | | | x |
| AEIO-360: A1A, A1B, A1B6 | x | x | x | x | | | x | x | x | x | | | x |
| AEIO-360: A1E6 | x | x | x | x | | | x | x | x | x | | | x |
| AEIO-360: B1B, B1F, B1G6, B2F, B4A, H1B | x | x | x | x | | | x | x | x | x | | | x |
| AEIO-540: D4B5 | | | x | x | | | x | x | x | x | | | x |
| AEIO-540: D4A5, D4C5, D4D5, L1B5, L1B5D | | | x | x | | | x | x | x | x | | | x |
| AEIO-540: L1D5 | | | | | | | | | x | x | | | x |
| AIO-320: A1B, A2A, A2B, B1B, C1B | x | x | x | x | | | x | x | x | x | | | x |
| AIO-320: A1A | | | | | | | x | x | | | | | |
| AIO-360: A1A, A1B, A2A, A2B | | | x | x | | | x | x | x | x | | | x |
| AIO-360: B1B | | | x | x | | | x | x | | | | | |
| GO-435: C2, C2A, C2A2, C2B, C2B1, C2B2, C2C, C2D, C2E, D1 | x | x | x | x | | | x | x | x | x | | | x |
| GO-480: G1A6 | x | | | | x | | | | | | x | x | |
| GO-480: B, B1A6, B1B, B1C, B1D, C1B6, C1D6, C2C6, C2D6, C2E6, C3A6, D1A, F1A6, F2A6, F2D6, F3A6, F3B6, F4A6, F4B6, F6 | | | x | x | | | x | x | x | x | | | x |
| GO-480: G1B6, G1D6, G1H6, G1J6, G2D6, G2F6 | | | x | x | | | x | x | | | x | x | |
| GO-480: E1A6 | | | | | | | | | x | x | | | x |
| GSD-480: A1C6, A2A6 | | | x | x | | | x | x | x | x | | | x |
| GSD-480: B1A6, B1B3, B1B6, B1C6, B1E6, B1G6, B1J6, B2C6, B2D6, B2G6, B2H6 | | | x | x | | | x | x | x | x | | | x |
| GSD-480: A1A6 | | | | | | | | | x | x | | | x |
| HIO-360: E1B0 | | | | | x | | | | x | x | | | x |
| HIO-360: A1A, A1B, B1A, B1B | x | x | x | x | | | x | x | x | x | | | x |
| HIO-360: C1A, C1B, D1A | | | x | x | | | x | x | | | | | |
| HIO-360: E1AD, F1AD | | | | | x | | | | x | x | | | |
| HO-360: A1A, C1A | x | x | | | x | | | | x | x | | | x |
| HO-360: B1A, B1B | | | x | x | | | | | x | x | | | x |
| IGO-480: A1A6, A1B6 | | | | | | | | | x | x | | | x |
| IGO-540: A1A, A1B, A1C, B1A, B1B, B1C | x | | | | x | | | | x | x | | | x |
| IGSO-480: 13/16" reach cyl. | x | | | | x | | | | x | x | | | x |
| IGSO-480: 1/2" reach cyl. | | | x | x | | | | | x | x | | | x |
| IGSO-540: B1A, B1C | x | | | | x | | | | x | x | | | x |
| IGSO-540: A1A, A1C, A1D, A1E, A1F, A1H | x | | | | x | | | | x | x | | | x |
| IO-320: F1A | x | | | | x | | | | x | x | | | x |
| IO-320: C1B | x | x | x | | x | x | x | | x | x | | | x |
| IO-320: A1A, A2A, B1A, B1B, B1C, B1D, B1E, B2A, D1A, D1B, D1C | x | x | x | | x | x | x | | x | x | | | x |
| IO-320: E1A, E1B, E2A, E2B | x | x | | | x | x | | | x | x | | | x |
| IO-320: 1/2" reach cyl. | | | x | | x | | | | x | x | | | x |
| IO-320: 13/16" reach cyl. | | | | | x | | | | x | x | | | x |
| IO-360: C1A | x | | | | x | | | | x | x | | | x |
| IO-360: F1A | x | | | | x | | | | x | x | | | x |
| IO-360: A1B6 | | x | x | | x | | | | x | x | | | x |
| IO-360: A1B6D | | | | | x | | | | x | x | | | x |
| IO-360: A1A, A1B, A1C, A1D, A1D6, A2A, A2B, A2C, A3B6, A3D6, C1B, C1C, C1D6, C1E6, C1E6D, C1F, D1A, J1A6D, J1A6 | x | x | | | x | | | | x | x | | | x |
| IO-360: B1A, B1B, B1C, B1D, B1E, B1F, B1F6, B1G6, B2E-nd, B2E-wd, B2F, B2F6, B4A, E1A | x | x | x | | x | | | | x | x | | | x |
| IO-360: A3B6D | x | x | | | x | | | | x | x | | | x |
| IO-360: K2A, L2A | | x | x | | x | | | | x | x | | | x |
| IO-360: M1A | | | x | | | | | | x | x | | | x |
| IO-360: C1G6 | | | | | | | | | | | | | |
| IO-540: P1A5, R1A5 | x | | | | x | | | | x | x | | | x |
| IO-540: K1A5, K1A5D, K1B5D, K1G5D, K1H5, K1J5, K2A5 | | x | x | | x | | | | x | x | | | x |
| IO-540: K1C5, K1D5, K1E5D, K1F5, K1F5D, K1G5, K1J5D, K1K5 | | x | x | | x | | | | x | x | | | x |
| IO-540: E1A5, E1B5, E1C5, K1B5 | | | | | x | | | | x | x | | | x |
| IO-540: J4A5 | | | | | x | | | | x | x | | | x |
| IO-540: K1E5 | | | | | x | | | | x | x | | | x |
| IO-540: S1A5, U1A5D, U1B5D | x | | | | x | | | | x | x | | | x |
| IO-540: N1A5 | x | | | | x | | | | x | x | | | x |
| IO-540: M1A5, M1A5D, M1B5D, M1C5, M2A5D | x | | | | x | | | | x | x | | | x |
| IO-540: AA1A5, AA1B5 | x | | | | x | | | | x | x | | | x |
| IO-540: G1A5, G1B5, G1C5, G1D5, G1E5, G1F5 | x | x | | | x | | | | x | x | | | x |
| IO-540: A1A5, AC1A5, B1A5, B1B5, B1C5, C1B5, C1C5, C2C, C4B5, C4C5, C4D5, C4D5D, D4A5, D4B5, D4C5, L1A5, L1A5D, L1B5D, L1C5, T4A5D, T4B5, T4B5D, T4C5D, V4A5D | | | x | x | | | | | x | x | | | x |
| IO-540: AB1A5, W1A5, W1A5D, W3A5D | | | x | x | | | | | x | x | | | x |
| IO-540: C4B5D | | | | | | | | | x | x | | | x |
| IO-720: 13/16" reach cyl. | x | | | | x | | | | x | x | | | x |
| IO-720: 1/2" reach cyl. | | | x | | x | | | | x | x | | | x |
| IYO-360: A1A | x | | | | x | | | | x | x | | | x |
| IYO-540: A1A | | | | | x | | | | x | x | | | x |
| LHIO-360: C1A, C1B | | | x | | x | | | | | | | | |
| LHIO-360: F1AD | | | | | x | | | | | | | | |
| LIO-320: C1A | x | | | | x | | | | x | x | | | x |
| LIO-320: B1A | x | x | x | | x | | | | x | x | | | x |
| LIO-360: C1E6 | x | x | x | | x | | | | x | x | | | x |
| LO-360: A1G6D, A1H6 | x | x | x | | x | | | | x | x | | | x |
| LO-360: E1A6D, E1AD, E2AD, E2BD | x | x | | | x | | | | x | x | | | x |
| LTIO-540: F2BD, J2B, J2BD, N2BD, R2AD | | | | | x | | | | x | x | | | x |
| LTIO-540: K1AD, U2A, V2AD, W2A | | | | | x | | | | x | x | | | x |
| LTO-360: E1A6D | x | | | | x | | | | x | x | | | x |
| LTO-360: A1A6D | x | | | | x | | | | x | x | | | x |
| O-235: C1A, C1A, C1B, C1C, C2A, C2B, C2C, E1, E1B, E2A, E2B, F1, F1B, F2A, F2B, G1, G1B, G2A, G2B, H2C, J2A, J2B, K2A, K2B, K2C, L2A, L2C, M1, M2C, M3C, N2A, N2C, P1, P2A, P2C, P3C | x | x | x | | x | | | | x | x | | | x |
| O-290: A, AP, B, C, CP, D2A, D2B, D2C | x | x | x | | x | | | | x | x | | | x |
| O-290: D, D2 | | | x | | | | | | x | x | | | x |
| O-320: D1A, D1B, D1C, D1D, D1F, D2A, D2B, D2C, D2F, D2G, D2H, D2J, D3G, E2A, E2C | x | x | x | | x | | | | x | x | | | x |
| O-320: A1A, A1B, A2A, A2B, A2C, A2D, A3A, A3B, A3C, B1A, B1B, B2A, B2C, B2D, B3A, B3B, B3C, C1A, C1B, C2A, C2B, C2C, C3A, C3B, C3C, E1A, E1B, E1C, E1F, E1J, E2B, E2D, E2F, E2G, E2H, E3D, E3H | x | x | x | | x | | | | x | x | | | x |

| FAA-PMA Approved Engine Applications | Massive Electrode | | | | Fine-Wire Electrode | | | | | | | | |
|--|-------------------|----------------|----------------|----------------|---------------------|----------------|----------------|----------------|---------|---------|---------|---------|---------|
| | 5/8"-24 thread | 3/4"-20 thread | 5/8"-24 thread | 3/4"-20 thread | 5/8"-24 thread | 3/4"-20 thread | 5/8"-24 thread | 3/4"-20 thread | | | | | |
| | UREB37E | UREM37BY | UREM38E | UREM40E | URHB32E | URHB37E | URHM38E | URHM40E | UREB36S | UREM38S | URHB32S | URHB36S | URHM38S |
| Textron Lycoming | | | | | | | | | | | | | |
| O-320: H1AD, H1BD, H2AD, H2BD, H3AD, H3BD | | | x | x | | | x | x | | | x | x | |
| O-320: B2B | | | | | | | | | | | x | x | |
| O-340: A1A, A2A, B1A | | | x | x | | | x | x | | | x | x | |
| O-360: A1A-nd, A1A-wd, A1AD, A1C, A1D, A1F, A1F6, A1F6D, A1G, A1G6, A1G6D, A1H, A1H6, A1LD, A1P, A2A, A2D, A2E, A2F, A2G, A2H, A3A, A3AD, A3D, A4A, A4AD, A4D, A4G, A4J, A4K, A4M, A4N, A4P, A5AD, B1A, B1B, B2A, B2B, B2C, C1A, C1C, C1E, C1F, C1G, C2A, C2B, C2C, C2D, C2E, C4F, C4P, D1A, D2A, D2B, F1A6 | | | x | x | | | x | x | | | x | x | |
| O-360: E1A6D, E1AD, E1BD, E2AD, E2BD, G1A6, J2A | | | x | x | | | x | x | | | x | x | |
| O-435: A, A2, C2 | | | x | x | | | x | x | | | x | x | |
| O-435: C, C1, K, K1 | | | | | | | x | x | | | x | x | |
| O-435: B | | | | | | | | | | | x | x | |
| O-435: 1/2" reach cyl., 25 | | | | | | | | | | | x | x | |
| O-540: L3C5D | | | | | | | | | | | x | x | |
| O-540: A1A, A1A5, A1B5, A1C5, A1D, A1D5, A2B, A3D5, A4A5, A4B5, A4C5, A4D5, B1A5, B1B5, B1D5, B2A5, B2B5, B2C5, B2D5, B2E5, B2F5, B2G5, B2H5, B2J5, B2K5, B2L5, B2M5, B2N5, B2P5, B2Q5, B2R5, B2S5, B2T5, B2U5, B2V5, B2W5, B2X5, B2Y5, B2Z5, C1A5, C1B5, C1C5, C1D5, C1E5, C1F5, C1G5, C1H5, C1J5, C1K5, C1L5, C1M5, C1N5, C1P5, C1Q5, C1R5, C1S5, C1T5, C1U5, C1V5, C1W5, C1X5, C1Y5, C1Z5, D1A5, D1B5, D1C5, D1D5, D1E5, D1F5, D1G5, D1H5, D1J5, D1K5, D1L5, D1M5, D1N5, D1P5, D1Q5, D1R5, D1S5, D1T5, D1U5, D1V5, D1W5, D1X5, D1Y5, D1Z5, E1A5, E1B5, E1C5, E1D5, E1E5, E1F5, E1G5, E1H5, E1J5, E1K5, E1L5, E1M5, E1N5, E1P5, E1Q5, E1R5, E1S5, E1T5, E1U5, E1V5, E1W5, E1X5, E1Y5, E1Z5, F1A5, F1B5, F1C5, F1D5, F1E5, F1F5, F1G5, F1H5, F1J5, F1K5, F1L5, F1M5, F1N5, F1P5, F1Q5, F1R5, F1S5, F1T5, F1U5, F1V5, F1W5, F1X5, F1Y5, F1Z5, G1A5, G1B5, G1C5, G1D5, G1E5, G1F5, G1G5, G1H5, G1J5, G1K5, G1L5, G1M5, G1N5, G1P5, G1Q5, G1R5, G1S5, G1T5, G1U5, G1V5, G1W5, G1X5, G1Y5, G1Z5, H1A5, H1B5, H1C5, H1D5, H1E5, H1F5, H1G5, H1J5, H1K5, H1L5, H1M5, H1N5, H1P5, H1Q5, H1R5, H1S5, H1T5, H1U5, H1V5, H1W5, H1X5, H1Y5, H1Z5, I1A5, I1B5, I1C5, I1D5, I1E5, I1F5, I1G5, I1J5, I1K5, I1L5, I1M5, I1N5, I1P5, I1Q5, I1R5, I1S5, I1T5, I1U5, I1V5, I1W5, I1X5, I1Y5, I1Z5, J1A5, J1B5, J1C5, J1D5, J1E5, J1F5, J1G5, J1J5, J1K5, J1L5, J1M5, J1N5, J1P5, J1Q5, J1R5, J1S5, J1T5, J1U5, J1V5, J1W5, J1X5, J1Y5, J1Z5, K1A5, K1B5, K1C5, K1D5, K1E5, K1F5, K1G5, K1J5, K1K5, K1L5, K1M5, K1N5, K1P5, K1Q5, K1R5, K1S5, K1T5, K1U5, K1V5, K1W5, K1X5, K1Y5, K1Z5, L1A5, L1B5, L1C5, L1D5, L1E5, L1F5, L1G5, L1J5, L1K5, L1L5, L1M5, L1N5, L1P5, L1Q5, L1R5, L1S5, L1T5, L1U5, L1V5, L1W5, L1X5, L1Y5, L1Z5, M1A5, M1B5, M1C5, M1D5, M1E5, M1F5, M1G5, M1J5, M1K5, M1L5, M1M5, M1N5, M1P5, M1Q5, M1R5, M1S5, M1T5, M1U5, M1V5, M1W5, M1X5, M1Y5, M1Z5, N1A5, N1B5, N1C5, N1D5, N1E5, N1F5, N1G5, N1J5, N1K5, N1L5, N1M5, N1N5, N1P5, N1Q5, N1R5, N1S5, N1T5, N1U5, N1V5, N1W5, N1X5, N1Y5, N1Z5, O1A5, O1B5, O1C5, O1D5, O1E5, O1F5, O1G5, O1J5, O1K5, O1L5, O1M5, O1N5, O1P5, O1Q5, O1R5, O1S5, O1T5, O1U5, O1V5, O1W5, O1X5, O1Y5, O1Z5, P1A5, P1B5, P1C5, P1D5, P1E5, P1F5, P1G5, P1J5, P1K5, P1L5, P1M5, P1N5, P1P5, P1Q5, P1R5, P1S5, P1T5, P1U5, P1V5, P1W5, P1X5, P1Y5, P1Z5, Q1A5, Q1B5, Q1C5, Q1D5, Q1E5, Q1F5, Q1G5, Q1J5, Q1K5, Q1L5, Q1M5, Q1N5, Q1P5, Q1Q5, Q1R5, Q1S5, Q1T5, Q1U5, Q1V5, Q1W5, Q1X5, Q1Y5, Q1Z5, R1A5, R1B5, R1C5, R1 | | | | | | | | | | | | | |

AVIATION SPARK PLUGS



AUTOLITE SPARK PLUGS

OEMs and overhaul facilities around the world are choosing Unison's Autolite Aviation Spark Plugs for superior heat transfer and leakage protection, advanced reliability, long life, and cost-effectiveness. Minimized plug length allows for greater clearance between the plug and aircraft cowling. Completely FAA-PMA approved, these plugs are trusted for use in some of aviation's most demanding applications, including the Extra 300 aircraft flown by the Northern Lights Aerobatic Team and the Exxon Flyin' Tiger climb machine.

| Unison Part No. | Mounting Thrd. Size | Reach | Shielding Thread | Equiv. Champion P/N | Price Each |
|-----------------|---------------------|--------|------------------|---------------------|------------|
| UREM38E | 18mm | 1/2" | 5/8"-24 | REM38E | . |
| URHM38E | 18mm | 1/2" | 3/4"-20 | RHM38E | . |
| UREM40E | 18mm | 1/2" | 5/8"-24 | REM40E | . |
| URHM40E | 18mm | 1/2" | 3/4"-20 | RHM40E | . |
| URHB32E | 18mm | 13/16" | 3/4"-20 | RHB32E | . |
| UREB37E | 18mm | 13/16" | 5/8"-24 | REB37E | . |
| URHB37E | 18mm | 13/16" | 3/4"-20 | RHB37E | . |
| UREM37BY | 18mm | 1/2" | 5/8"-24 | REM37BY | . |

AUTOLITE XL FINE WIRE SPARK PLUGS

Unison's Autolite® Fine Wire Aviation Spark Plugs have longer life and more premium design features: • Resistant to lead attack • Improved scavenging • Pedestal mount for the welded side wire electrode • Projected gap design for improved combustion • Iridium side wire electrode tip • Proprietary glass seal and integral resistor • High temp. black paint for additional corrosion protection

| Unison Part No. | Mounting Thrd. Size | Reach | Shielding Thread | Equiv. Champion P/N | Price Each |
|-----------------|---------------------|--------|------------------|---------------------|------------|
| URHB36S | 18mm | 13/16" | 3/4"-20 | RHB36S | . |
| URHB32S | 18mm | 13/16" | 3/4"-20 | RHB32S | . |
| URHM38S | 18mm | 1/2" | 3/4"-20 | RHM38S | . |
| UREB36S | 18mm | 13/16" | 5/18"-18 | REB36S | . |
| UREM38S | 18mm | 1/2" | 5/8"-24 | REM38S | . |

NGK SPARK PLUGS

DCPR7E



| Description | Part No. | Price |
|-------------------------|----------|-------|
| DCPR7E (for Rotax 912) | 08-00504 | . |
| DCPR8E (for Rotax 912S) | 08-01228 | . |
| CR7HSA | 08-00649 | . |
| BR8EIX | 08-00650 | . |
| BR8EG | 08-00687 | . |
| DR8EA | 08-00693 | . |
| B8ES (Solid) | 08-00730 | . |
| B8ES (Non-Solid) | 08-07075 | . |
| BR8ES | 08-00736 | . |
| B7ES | 08-07039 | . |
| B9ES | 08-07040 | . |
| BR7ES | 08-07041 | . |
| BR9ES | 08-07042 | . |
| DCPR8E | 08-07044 | . |
| BR7EIX | 08-07045 | . |
| BR9EIX | 08-07046 | . |

BR8EIX



CHAMPION SPARK PLUG ANTI-SEIZE

Apply sparingly to second and third threads. Do not contact electrodes as it could short out the plug. Do not apply to shielding barrel threads. Unbreakable 4oz. bottle with applicator brush top. P/N 2612

AUTOLITE T-556 SPARK PLUG THREAD LUBRICANT & ANTI-SEIZE COMPOUND

Helps to prevent galling and lubricates threads during installation. P/N 12-00709

COPPER SPARK PLUG GASKETS

Made of solid copper to current aircraft standards. Available in 14 MM and 18 MM sizes.

AN4027-2, 14MM..... P/N 07-01261..... ea
AN4027-1, 18MM..... P/N 07-00877..... ea

FOLDED STEEL SPARK PLUG GASKETS

The new type folded steel sparkplug gaskets provide better sparkplug retention with no adverse effect on heat transfer. Endorsed by FAA. These gaskets are not to be reused.

18mm Gaskets..... P/N M677..... ea

AN4062-1 DEHYDRATOR PLUGS 18MM

These plugs are used to prevent rust and corrosion in engines while in storage. Contain silica gel which turns from blue to pink when moisture is absorbed. Reusable & refillable. The pink silica gel may be reactivated (after removing from reservoir) by heating for 16 hours at 250°F.

AN4062-1 (18MM)..... ea

SILICA GEL. Indicating type, for refilling plugs.

1/4 Lb. Bag..... P/N 07-00731.....
1 Lb. Can..... P/N 07-03400.....



AUTOLITE SPARK PLUG TYPE DESIGNATION SYSTEM

All Champion Aviation Spark Plugs are identified by type designations selected by virtue of the plug design as applied to the following Spark Plug Number and Symbol Chart. The symbol is composed of a rating position number together with prefix & suffix numbers to indicate major plug design characteristics.

A TYPICAL SPARK PLUG NUMBER WITH SYMBOL EXPLANATION

R H B 37 E
↑ ↑ ↑ ↑ ↑
① ② ③ ④ ⑤

R — Push-wire—90° to Center

1. RESISTOR

None — No Resistor

R — Mil-Spec. Resistor - Erosion protection

2. BARREL STYLE

None — Unshielded

E — Shielded 5/8"-24 Thread

H — Shielded 3/4"-20 Thread (All Weather Plug)

3. MOUNTING THREAD—REACH—HEX SIZE

B - 18mm 13/16"/2.06cm 7/8"/2.22cm M— 18mm 1/2"/1.27cm 7/8"/2.22cm
J - 14mm 3/8"/0.95cm 13/16"/2.06cm L — 14mm 1/2"/1.27cm 13/16"/2.06cm
U - 18mm 1-1/8"/2.85cm 13/16"/2.06cm

4. HEAT RATING POSITION

Low number—cold High number—hot

5. ELECTRODE DESIGN

None—Conventional single E — Two prong massive N — Four prong massive

P—Fine wire (Platinum) W — Fine wire (Iridium) B—2 prong massive, Tangent to Center

CHAMPION SPARK PLUGS

SHIELDED — MASSIVE ELECTRODES

| 5/8-24* | Price | 3/4-20* | Price |
|---------------|-------|---------|-------|
| REJ38 (14MM) | . | RHM38E | . |
| REL37B (14MM) | . | RHM40E | . |
| REB37E | . | RHU27E | . |
| REM37BY | . | RHB32E | . |
| REM38E | . | | |
| REM40E | . | | |
| REB32E | . | | |

| 5/8-24* | Price | 3/4-20* | Price |
|---------|-------|---------|-------|
| REM38S | . | RHB32S | . |
| REB-36S | . | RHB36S | . |
| | | RHM38S | . |

| 5/8-24* | Price | 3/4-20* | Price |
|-------------|-------|---------|-------|
| M41E (18MM) | . | | |

* Shielded barrel thread size. Check barrel size - 5/8x24 or 3/4x20 threads before ordering and select proper plug number. See page 236 for Sparkplug Application Table.

** The "Iridium S" sparkplugs replace the Platinum and "W" Iridium types. Increased bore diameter improves scavenging action. Greater clearance volume can accept more combustion deposits. Single Iridium electrode offers greater resistance to lead attack. Easy to clean Easy to gap

CHAMPION RVL38S SPARK PLUGS

Used on M14 YAK P/N 08-06280



NOTE: Spark plugs are shipped in factory sealed plastic cases. Opened spark plug cases make the spark plugs non-returnable. Please do not open any spark plug until you are sure you have received the correct spark plugs for your application.

SURPLUS SPARK PLUG BARGAINS



New surplus 18MM longreach, shielded, 3/4-20 barrel. FAA approved for Continental IO-470, GIO-470, TSIO-470, IO-520 & GTSIO-520. Not for 0-470, which uses short reach plugs.

P/N 08-03699..... ea

SEE TOOL SECTION IN BACK OF CATALOG FOR FULL LINE OF CHAMPION SPARK PLUG TOOLS

EP

LIGHTSPEED IGNITION

LIGHT SPEED ENGINEERING PLASMA IGNITION SYSTEM

Light Speed Engineering, LLC (LSE) is a pioneer in the design and production of ignition systems for experimental aircraft. 22 years of research and development have been invested in producing the PLASMA CDI (Capacitive Discharge Ignition) system product line. LSE's PLASMA CD systems are the ideal replacement for yesterday's magneto technology. You can replace one mag with a PLASMA CDI or, for maximum performance, replace both magnetos with these state of the art systems. The Plasma CDI is a solid-state, high performance ignition system intended for today's home built aircraft. Light Speed Engineering currently offers two Capacitive Discharge Ignition Systems: the PLASMA II PLUS and the PLASMA III. Standard Plasma CDI kits include: direct crank sensor assembly, high tension leads, harness, spark plugs, spark plug adapters, and ignition coils with mounting bracket. One or two systems can be used.

PLASMA II PLUS CDI



The Plasma II is Light Speed Engineering's basic electronic ignition system for aircraft. It is a lightweight, high-energy capacitor discharge system containing all of the essential Plasma CDI features. Its smaller size and lighter weight sets it apart from any other ignition source. Like all LSE ignition systems it features

automatic ignition advance based on engine load and RPM, auto retard for starting and a standard pulse tachometer output. The Plasma II was designed to provide a high tech ignition source at the cost of magnetos.

PLASMA III CDI



Light Speed Engineering has introduced a new ignition system to its line of products. The new Plasma III Capacitor Discharge System is the latest high performance ignition for all 4-cyl and 6-cyl aircraft engines. Its long duration spark and optimized timing curve makes more horsepower and improves fuel efficiency- at all altitudes. Other benefits include quick starts, reduced maintenance, light weight, lower EGT's and up to 20% more range. As with all LSE ignitions, RPM and manifold pressure inputs are used for our proprietary timing curves. The Plasma III is also capable of displaying the current timing advance, manifold pressure and rpm on an optional lightweight LCD display. The Plasma III can easily replace one or both magnetos, making your engine run better under all conditions.

PLASMA CAPACITIVE DISCHARGE IGNITION SYSTEMS

| All Plasma CDI systems include: high tension leads, harness, spark plugs, spark plug adapters, ignition coils with mounting bracket, and Hall Effect Sensor module OR Direct Crank Sensor assembly. | | |
|---|----------|-------|
| Description | Part No. | Price |
| Plasma II Plus: 4 Cylinder Direct Crank Sensor | 08-06294 | . |
| Plasma II Plus: 4 Cylinder Hall Effect Module | 08-06295 | . |
| Plasma III: 4 Cylinder Direct Crank Sensor | 08-00675 | . |
| Plasma III: 4 Cylinder Hall Effect Module | 08-00676 | . |
| Plasma III: 6 Cylinder Direct Crank Sensor | 08-00677 | . |
| Dual Plasma CDI Systems | | |
| Dual Plasma II Plus: 4 Cylinder Direct Crank Sensor | 08-06296 | . |
| Dual Plasma II Plus: 4 Cylinder Hall Effect Module | 08-06297 | . |
| Dual Plasma III: 4 Cylinder Direct Crank Sensor | 08-06298 | . |
| Dual Plasma III: 4 Cylinder Hall Effect Module | 08-06299 | . |
| Dual Plasma III: 6 Cylinder Direct Crank Sensor | 08-06300 | . |
| Options | | |
| On all Turbo and Super-Charged ignition systems add \$124.95 | 08-06301 | . |
| On all Franklin and Continental engine ignition systems add \$194.99 | 08-06302 | . |

S.5 SPARK PLUG ADAPTER FOR 14MM SPARK PLUGS

RECOMMENDED BY KLAUS SAVIER OF LSE



The high performance, electronic ignition, has demonstrated it's reliability, easy starts, greater power at altitude, and leaner, more efficient combustion. Yet your expensive aircraft Spark Plugs, can prevent the pilot from taking full advantage or this electronic powerhouse. The S.5 is a precision CNC adapter, that installs easily in aircraft engines, that use 18mm "short reach" spark plugs, transforming the 18mm threaded hole down to 14mm.

The Spark Plug Adapter allows you to use:

- High performance 14mm automotive/ motorcycle spark plugs, that offer an almost unlimited variety of heat ranges, & electrode styles, designed specifically to take advantage of electronic ignitions.
- Shorter plugs with 90° silicon boots, give greater clearance for sleeker cowls and less drag, meaning higher speed, using less power.
- Precious and semi precious metal racing spark plugs (the ultimate in reliability and long life) for less than you'd pay for ordinary aircraft plugs. More speed, power, efficiency, as well as a cost savings each time you change spark plugs.
- New & improved corrosion resistant design substantially extends the operational life of the S.5 Spark Plug Adapter.

Set of 4P/N 08-06753



WIRE TERMINAL CLIP

For 7 MM unshielded harnesses.

P/N 07-03500

HIGH TENSION CABLE



Unshielded 7MM ignition cable consists of tinned conductor, rubber insulation, reinforced glass braid and Hypalon jacket that resists sun, weather, heat, chemicals and oxidation by ozone. Temperature range -65° to 250°F.

P/N 07-03700 Ft.

ENGINE BAFFLE IGNITION WIRE SEALS



P/N 526, 375, 376



P/N M2376

| Seal Type | Seals for 5MM Wire P/N | Each |
|--------------|------------------------|------|
| One-Wire | 526 | . |
| Two-Wire | 375 | . |
| Three-Wire | 376 | . |
| Slick 3-Wire | M2376 | . |

BUZZ AERO ROCKER COVERS



The Buzz Aero Model AC2003 cover is made to fit Lycoming straight valve cylinders. Available in red, white, blue or black anodizing. Specs: Wt: 9oz; Machined from billet aluminum; Nickel chrome plated stainless steel socket head cap screws supplied with kit;

Set of gaskets supplied with each kit. AC2003 Applications: Lyc. 0-235, 0-290, 0, 10, LI0-320, 0-340, 0- 360-A, B, C, D; I0-360-B; H0-360-A, B; H10-360-B, V0, IV0-360; 0- 540-A, B, E, F, G,

I0-540-C, D, J, N, R.

Also Available by Special Order: AC2004 for Engines: I0-360-A, C, D; A10-360-A, B; H0-360-A, C, D, T10-360-A; LI0-360-C1E6; V0, G0-435; G0-480; I0, V0, TV10-540; I0- 720, TV0-435.

| Description | Part No. | Price |
|-------------------------------|------------|-------|
| Rocker Cover 4 Cyl. Kit Red | 08-00806-1 | . |
| Rocker Cover 4 Cyl. Kit White | 08-00806-2 | . |
| Rocker Cover 4 Cyl. Kit Blue | 08-00806-3 | . |
| Rocker Cover 4 Cyl. Kit Black | 08-00806-4 | . |
| Rocker Cover 6 Cyl. Kit Red | 08-00807-1 | . |
| Rocker Cover 6 Cyl. Kit White | 08-00807-2 | . |
| Rocker Cover 6 Cyl. Kit Blue | 08-00807-3 | . |
| Rocker Cover 6 Cyl. Kit Black | 08-00807-4 | . |

ZEFTRONICS VOLTAGE REGULATORS



As a factory authorized Zeftronics distributor, Aircraft Spruce can assure you the fastest delivery and best prices on all of your Zeftronics engine accessory requirements. We carry the complete Zeftronics product line. If you do not see the product you need listed, please call us for price and availability. We have complete information on file cross referencing Zeftronics part numbers to all OEM part numbers. If you are not sure what part number you need for your aircraft, please call us for immediate assistance.

VOLTAGE REGULATORS, ALTERNATOR/GENERATOR CONTROLLERS, ALT. SYS. MONITORS, PARALLEL RELAYS, OVER-VOLTAGE RELAYS, TEMP. CONTROLLERS, TIMERS, CURRENT & VOLTAGE SENSORS

| Spruce P/N | Price | Zeftronics P/N | Part Numbers Reference Aircraft & Other Manufacturers | Sys. Voltage | Aircraft Eligibility |
|------------|-------|----------------|--|--------------------|---|
| 07-00628 | | R15V00A | Cessna: C611001-0101, -0102, -0201. | VR: 14V | CESSNA:150,A,B,C,D,E,F,G,H,J,K,L,M; A150,K,L,M; FA150,K,L,M. |
| 07-00622 | | R15100A | Beech: 33-380010 Electrodelta: VR600 FORD: D4FF-10316-BA,D4FF-10316-CA | | 172,B,D,E,F,G,H,I,K,L,M,N,P,Q; F172,D,E,F,G,H,I,K,L,M,N;FR172E, P172, R172K, 177, A,B,RG,F172RG, 180,F,G,H,J,K, 185,C,D,E; A185F, F, 182,E,G,H,J,K,L,M,N,P,Q; F182P,Q; T182 188,A188,T188. 205A. 206;U206,A,B,C,D,E,F,G; P206,A,B,C,D,E; T206; |
| 07-00628 | | R15V00A | R15V00 = R15100 with OV Protection | VR: 14V | TP206A,B,C,D,E; TU206,A,B,C,D,E,F,G, 207,A, T207A, 210,B,C,D,E,F,G,H,J,K,L; |
| 07-00628 | | R15V00A | R15V00 Rev A is self protected R15100 Rev A is self protected | OV: 16V | 210,F,G,H,J,K, Beech: 35A33, 35B33,35C33,E33,E33B,F33,H35,K35,M35,N35,P35. Gulfstream (Grumman): AA-5,A,B. |
| 07-00637 | | V11100 | Cessna: C593001-0101 Other No: 0800002. OS60. 0337. EM235 | OV: 16V | Applicable For All Cessna Aircraft Models Listed For R151.00 |
| 07-00624 | | R1510N | Prestolite: VSF7201,2,3,4 VSF7202S,3A,3S. Electrodelta: VSF7203A TCM: 649684-1 Piper: 550-383. | VR: 14V | Citabria: 7GCAA,7ECA,7GCBC,7KCAB,8GCBC. Lake: LA-4,A,P. Grumman: AA-1,A. Commander: 112,B,TC,TCA. Varga: 2150A. Beech: 19A,B,19,M19A,23,23A,A23A,A23-19, A23 -24,B23,C23,24,24R,B24R,C24R. Piper: 23,-160,235,250;PA24-260,PA30,39; Cessna: 175,185,188. Maule: M-5-180C,235C; M-6-180,235;M-7-235,MX-7-180,235. |
| 07-00630 | | R15V0N | R15V0N = R1510N + OV Relay + L/ OV Pin | 14V/16V | Schweizer: 269C. Bellanca:14-19,-19-2,19-3,19-3A; 17-30,31,31TC; 17-30A,31A,31ATC. |
| 07-00638 | | V1510A | Piper: 450-397, 484-183, 550-380, 450-393 Beech: 138-1 Wico: X-17621. Lamar: B00289-2, B00339-1. Electrodelta: OS75-14. Delco-Remy: 1115831. Prestolite: FQC-4002B. | OV: 16V | Citabria: 7GCAA,7ECA,7GCBC,7KCAB,8GCBC. Lake: LA-4,A,P. Grumman: AA-1,A. Commander:112,B,TC,TCA. Varga: 2150A. Beech: 19A,B,19,M19A,23,23A,A23A,A23-19, A23-24,B23,A24,24R,B24R,C24R,S35,V35,V35TC. Piper: 23,-160,235,250;PA24-260,400; PA30,39. Cessna: 175,185,188. Maule:M-5-180C,235C; M-6-180,235;M-7-235/MX-7-180,235. Bellanca: 14-19,19-2,19-3,19-3A; 17-30,31,31TC; 17-30A,31A,31ATC. Schweizer: 269C. Piper: PA28-140,150,151,160,161,180,235,236,201T. PA28R-180,200,201T. PA28S-160,180. PA28RT-201,201T. PA32-260,300. PA32S-300. PA32RT-300,300T. PA32R-301,301T. PA32-301,310T. PA34-200. PA38-112. |
| 07-00623 | | R1510L | Piper: 450-392, 484-121,66804-03,756-055 Beech: 169-380063 Other mfr P/N: X16300B, X17990. 9000590 B00267-1,2 B00331-1,2. 1816110. VR200, A. FVR4004.4224; RBM: 87-87102-21 | | Bellanca: 7GCAA,7ECA,7GCBC,7KCAB,8KCAB. Commander: 112,B,TC,TCA. Beech: 19, 19 A,B,19,M19A,23,23A,A23A,A23-19, A23-24,B23,C23,A24,A24R,C24R,S35,V35,V35TC. Piper: PA24-260,400. PA28-140,150,151,160,161,180,235,236,201T. PA28R-180,200,201,201T. PA28S-160, 180. PA28RT-201,201T. PA32-260,300. PA32S-300, PA32RT-300,300T. PA32R-301,301T. PA32-301,310T. PA38-112. Grumman: AA-1B, AA-1C |
| 07-00629 | | R15V0L | Piper: 557-337. Lamar: B00371-1, -8, -14 Electrodelta: VR371 | VR: 14V OV: 16V | Bellanca: 8GCB,8KCAB. Maule: M-5-180C,235C; M-6-180C,235; M-7-235;MT-7-235;MT-8-235; MX-7-160, 180, 235; MXT-7-160,180. Piper: PA24-260,400;PA28-140,150,151,160,161,180,235, 236, 201T. PA28R-180,200,201,201T; PA28S-160,180. PA28RT-201,201T. PA32-260,300. PA32S-300. PA32RT-300,300T. PA32R-301,301T. PA32-301,310T. PA38-112. |
| 07-00631 | | R25101A | Cessna: C611004-0101,C611002-0102,-0105 | VR: 27.7 | Cessna: 152,A152,F152,FA152. 172,H,N;F172;FR172K;R172,K; 177,A,B,RG; 180,K; 182,P,Q; |
| 07-00631 | | R25101A | Ford: C8FF/C6FF-10316-A, TCM:636147 Electrodelta: VR500-0101. | VR: 27.7 | F182,P,Q; R182, FR182; T182,TR 182. 185,A185F. 188, A188, A,B; T188,C; 206, P206,TU206A, U206; G; 207,A; T207,A; 210,K,L,M,N; P210N; P210R; T210,K,L,M,N, 337,A,B,C,D,E,F,G,H; F337,A,B,C,D,E,F,G,H; P337H; T337B; T337B,C,D,E,F,G,H,H-SP; FT337E,F,GP,HP. M337B. |
| 07-00632 | | R25102A | Cessna: C611004-0102 | VR: 28.8 | Applicable for CESSNA models listed for R25101 except 337A (USAF 02B), M337B (USAF 02A). |
| 07-00615 | | EQ1500 | Delco-Remy 1116887; PAC: 450-386 | EQ: 12V | Piper: PA23-150,-160,-238,250;PA30; PA39 |
| 07-00616 | | EQ2500 | DELCO-REMY 1116902 | EQ: 24V | Cessna: 310,A,B,C,D,E,F,G,H,I,J,I,K; E310H,I,J. 320,A,B,C,D,E,320-1. Beech: 95,B95,B95A,D95A,E95,E95-55,-A55,-B55,-B55A;58 A. Twin Commander:500,-A,B. |
| 07-00635 | | R25400 | Cessna: C611005-0103, 0103, -0101, -0102 Electrodelta: VR515F,G. Pft: DGR3 | VR: 28V OV: 2V | Cessna: 152,A152,F152,FA152; 172,N,P,RG;FR172,K;R172,K; F172N,P; 180,K; 182,Q,R; R182, FR182,TR182,F182R,T182R; 185,A185F; 206, U206; 207, T207; 210,N,R; P210N,R;T210N,R. |
| 07-00639 | | V25101 | Cessna: C593003-0101, -0102 Other P/N: OS100-0101. EM233 | OV: 32V | Cessna: 152,A152,F152,FA152; 172; 172N, F172, R172K; R172K; 177,A,B,RG; 180,K; 182,Q;F182Q, R182; FR182; 185,A185F; 188,A188B,T188C; 206,U206; 207,T207; 210,K,L,M,N; P210,N; T210,K,L,M,N. |
| 07-00633 | | R2510N | Prestolite:VSF7403A,4,3S. PAC: 550-381 | VR: 28V | Piper: PA31,31-300,-31-310,-31-325,-31-350,PA36-285,-300,-375,PA60-600,601,601P,602P,700P |
| 07-00636 | | R25V0N | R2510N with OV Protection & LV/OV warning | 28V/32V | Cessna: 310,310P,310Q, 320. 401A,401B,402A, 402B,414,421,421A,421B. Schweizer: 269C. |
| 07-00640 | | V2510A | PAC: 484182. Others: FOC4003A. OS75-28 | 32V | Twin Commander: 500S. Beech: E55, 58, F33A, F33C, A36, A36TC. |
| 07-00634 | | R251DR | Delco-Remy, Beech, Piper: 9000591 | 27.7V | Cessna: 310N, 310L,320D,320E; Beech: B95A,D95A,95-B55,-C55; Piper: PA-31,-300,-310,-325 |
| 07-00625 | | R15300 | Mooney: 800270-505, 880016-503 Electrodelta: VR415F. Pft: DGR1-1 | VR: 14V OV: 16V | Mooney: M20C, M20D, M20E, M20F, M20G, M20J, M20K, Homebuilts. |
| 07-00626 | | R1530B | Mooney: 880016-501 Other P/N: 20082. VR414 Beech: 35-380093-1,2,3. Other P/N: 20053, 20065, 20137, 20437 B00403-1, EM2073-1,2 | VR: 14V OV: 16V | Mooney: M20C,M20D,M20E,M20F Beech: H35, J35, K35, M35, N35, P35, S35, V35. V35TC, V35A, V35A-TC, V35B, 36, A36 Beech: 33, A33, B33, C33, E33, C33A, E33A, E33C, F33A, F33C. |



Note: Please read wiring instructions carefully prior to installation of voltage regulators. Improper wiring connections will void warranty. All returns subject to manufacturer's warranty inspection.

PART NUMBERS WITH PREFIX: R=VOLTAGE REGULATOR EQ=PARELLING RELAY V=OVERVOLTAGE RELAY G=GENERATOR CONTROLLER

GENERATOR CONTROL UNITS



| Part No. | Price | System Voltage | Part No. Reference | Notes |
|----------|-------|----------------|--|-----------------------|
| 07-00617 | . | 14V/20A | 1118736,1118904,111926,VR300-14-20 | Requires FAA Form 337 |
| 07-00618 | . | 14V/35A | 1118704,1118892,1119220,VR300-14-35 | Requires FAA Form 337 |
| 07-00619 | . | 14V/50A | 1118713,1118884,1119224,VR300-14-50 | Requires FAA Form 337 |
| 07-00620 | . | 28V/25A | 1118799,1111218C,1118976B,C, VR300-28-25 | Requires FAA Form 337 |

REGULATORS - ALTERNATORS

KELLY AEROSPACE VOLTAGE REGULATORS

| Mfg P/N | Description | Replacement for | Part Number | Price |
|---|-------------------------|---|-------------|-------|
| VR286 | 28V Voltage Regulator | Cessna 9910126-1,-2,-3 | 07-00920 | . |
| VR500-0101 | 27.7V Voltage Regulator | Cessna C11004-0101, C611002-0102, -0105 | 07-00912 | . |
| VR500-0102 | 28.8V Voltage Regulator | Cessna C611004-0102 | 07-00913 | . |
| VR515F | 28V Voltage Regulator | Cessna C611501-0102, C611005-0101 | 07-00914 | . |
| VR515GA | 28V Voltage Regulator | Cessna C611005-0103,-0102 | 07-00915 | . |
| VR580 | 28V Voltage Regulator | Cessna C611008-0101 | 07-00916 | . |
| VR600 | 14V Voltage Regulator | Cessna C611001-0101, -0102, -0201 | 07-00884 | . |
| VR801 | 28V Alternator Control | Cessna C611007-0101 | 07-00919 | . |
| VR371 | 14V Voltage Regulator | Zeftronic R15V0L | 07-00718 | . |
| VR415F | 14V Voltage Regulator | Zeftronic R15300 | 07-00910 | . |
| VSF7203A | 12V Voltage Regulator | Zeftronic R1510N | 07-00921 | . |
| VR382 | 28V Voltage Regulator | Lamar B-00382-2 | 07-00908 | . |
| VR392 | 14V Voltage Regulator | Lamar B-00392-1 | 07-00909 | . |
| VR2000-28-2 | 28V Voltage Regulator | N/A | 07-00895 | . |
| VSF7403A | 24V Voltage Regulator | Voltage Regulator VSF7403A | 07-00922 | . |
| VR200A | 14V Voltage Regulator | Piper 484121 | 07-00896 | . |
| VR300-14-20 | 14V Voltage Regulator | Delco-Remy 1118736, E.1118904, 1119226 | 07-00899 | . |
| VR300-14-35 | 14V Voltage Regulator | Delco-Remy 1118704 | 07-00901 | . |
| VR300-14-50 | 14V Voltage Regulator | Delco-Remy 1118713, 1118884, 1119224C | 07-00902 | . |
| VR300-28-25 | 28V Voltage Regulator | Delco-Remy 1118951, 1118975, 1119218C | 07-00905 | . |
| VR300-28-40 | 28V Voltage Regulator | Delco-Remy 1119237, 1119656 | 07-00906 | . |
| Kelly Voltage Regulators (Factory Overhauled) | | | | |
| Mfg. P/N | Description | Replacement for | Part Number | Price |
| VR300-14P-50 | 14V Voltage Regulator | Cessna 0413205-11 | 07-00904 | . |
| VR418-5 | 14V Voltage Regulators | Zeftronic R15400 | 07-00881 | . |
| - | 14V Voltage Regulator | Zeftronic R1510L | 07-00623 | . |
| VR300-14-25 | 14V Voltage Regulator | Delco 1118384 | 07-00900 | . |
| VR711 | 14V Voltage Regulator | Lamar B-00288-1 | 07-00918 | . |
| VR417-2 | 14V Voltage Regulator | Christen 61235 | 07-00911 | . |
| VR300-28-50 | 28V Voltage Regulator | N/A | 07-00907 | . |
| VR515G-2 | 28V Voltage Regulator | Schweitzer Aircraft Corp 269A4985 | 07-01108 | . |
| Kelly Voltage Sensors & Monitors (Factory New) | | | | |
| Mfg. P/N | Description | Replacement for | Part Number | Price |
| GPM-001 | 28V Ground Power Motor | Cessna C593005-0101 | 07-01275 | . |
| OS60 | 14V Overvoltage Sensor | Cessna C5930001-0101 | 07-00890 | . |
| OS100-0101 | 28V Overvoltage Sensor | Cessna C593003-0101 | 07-00887 | . |
| OS100-0102 | 28V Overvoltage Sensor | Cessna C593003-0102 | 07-00888 | . |
| OS200-0101 | 28V Overvoltage Sensor | Cessna C593004-0101 | 07-00889 | . |
| OS75-14 | 14V Overvoltage Sensor | Zeftronic V1510A | 07-00891 | . |
| OS75-28 | 28V Overvoltage Sensor | Zeftronic V2510A | 07-00892 | . |
| Accessories | | | | |
| Mfg. P/N | Description | Application | Part Number | Price |
| PT001 | Adapter Cable | For use w/ VR415-F ONLY | 07-00893 | . |

EP

OVERHAULED COMPONENTS

Alternators, generators, and starters which are remanufactured for installation in general aviation aircraft. **Fully FAA approved.**

| EXPERIMENTAL ALTERNATORS | | | AEROTECH GENERATORS | | | Part No. Volt/Amp Price | | | Part No. Volt/Amp Price | | |
|---------------------------------|----------|-------|----------------------------|----------|-------|--------------------------------|----------|-------|--|----------|-------|
| Part No. | Volt/Amp | Price | Part No. | Volt/Amp | Price | Part No. | Volt/Amp | Price | Part No. | Volt/Amp | Price |
| ES-6012 | 14V60A | CALL | DEL1101876 | 12V12A | . | DEL1101911 | 24V25A | . | 1109511R | 12V | CALL |
| ES-6024 | 28V60A | CALL | DEL1101877 | 12V26A | . | DEL1101912 | 12V50A | . | 1109514R | 12V | CALL |
| ES-6212 | 13.8V60A | CALL | DEL1101878 | 12V13A | . | DEL1101913 | 12V35A | . | 1109651R | 12V | CALL |
| ES-6224 | 28V60A | CALL | DEL1101879 | 12V25A | . | DEL1101914 | 12V35A | . | DEL1109652 | 12V | . |
| ES-7024 | 28V70A | CALL | DEL1101880 | 12V26A | . | DEL1101915 | 12V50A | . | 1109656R | 12V | CALL |
| ES-10024 | 28V100A | CALL | DEL1101881 | 12V13A | . | DEL1101917 | 12V35A | . | 1109657R | 12V | CALL |
| DELCO ALTERNATORS | | | DEL1101882 | 12V26A | . | DEL1101918 | 12V35A | . | 1109660R | 12V | CALL |
| | | | DEL1101887 | 12V35A | . | DEL1101919 | 12V50A | . | 1109662R | 24V | CALL |
| 1100715R | 12V70A | CALL | DEL1101888 | 12V50A | . | DEL1105052 | 24V40A | CALL | 1109678R | 12V | CALL |
| 1100716R | 12V52A | CALL | DEL1101889 | 12V20A | . | DEL1105053 | 24V40A | CALL | 1109689R | 12V | CALL |
| 1100717R | 12V70A | CALL | DEL1101891 | 12V20A | . | DEL1105054 | 24V50A | . | 1109687R | 24V | CALL |
| 1100718R | 24V50A | CALL | DEL1101892 | 12V35A | . | DEL1105055 | 24V50A | . | 1109677R | 12V | CALL |
| 1100723R | 24V50A | CALL | DEL1101897 | 12V35A | . | DEL1105056 | 24V40A | . | 1109678R | 12V | CALL |
| 1100747R | 24V50A | CALL | DEL1101898 | 12V35A | . | DEL1105057 | 24V50A | . | 1109519R | 12V | CALL |
| 1100753R | 24V65A | CALL | DEL1101899 | 12V20A | . | DELCO STARTERS | | | 1109518R | 24V | CALL |
| 1100792R | 24V65A | CALL | DEL1101900 | 12V35A | . | | | | Part No. | Volt/Amp | Price | 1109678R | 12V | CALL |
| | | | DEL1101901 | 24V26A | . | DEL1108234 | 24V | . | Minimum Core Charge on Delco Alt. and Starters \$200.00 *Drive not included (DEL 1971890). For price see listing for drives. **Drive not included (DEL 1940969). For price see listing for drives. | | |
| | | | DEL1101904 | 24V25A | . | 1108249R | 12V | CALL | | | |
| | | | DEL1101905 | 24V25A | . | DEL1109471 | 12V | . | | | |
| | | | DEL1101906 | 24V25A | . | 1109511R | 12V | CALL | | | |
| | | | DEL1101908 | 12V50A | . | 1109517R | 24V | CALL | | | |
| | | | DEL1101909 | 12V50A | . | 1109511R | 12V | CALL | | | |
| | | | DEL1101910 | 12V20A | . | 1109518R | 24V | CALL | | | |
| | | | | | | 1109511R | 12V | CALL | | | |

KELLY AEROSPACE ALTERNATORS



KELLY AEROSPACE ALTERNATORS

The most popular alternators in use on Cessna and Beech aircraft are of Ford manufacture. Chrysler alternators are usually found on Piper aircraft. These units are manufactured to aircraft specifications and are not available through automotive parts stores. Note: Core charge is billed on all exchange units & credited upon receipt of acceptable core.

ALTERNATOR PRODUCT INFORMATION

| If Unit Begins With: | Then Unit Is: | If First Digit After (-) Is: | Then Unit Is: | If Unit Ends With: | Then Unit Is: | | |
|----------------------|---------------|------------------------------|------------------------------------|--------------------|--|---|----------------------------|
| ALE- | 12V / 40A | 6 | Belt Driven / No Blast Tube | LS | New Unit - No Pulley | | |
| ALH- | 12V / 55A | | | | | | |
| ALM- | 12V / 30A | | | | | | |
| ALT- | 24V / 50A | | | RS | Factory Rebuilt/Overhauled - No Pulley | | |
| ALU- | 24V / 70A | | | | | | |
| ALV- | 24V / 100A | | | | | | |
| ALX- | 12V / 70A | | | 8 | Belt Driven / Blast Tube | G | Ground Strap Attached |
| ALY- | 12V / 60A | | | | | | |
| ALZ- | 12V / 50A | | | | | R | Factory Rebuilt/Overhauled |
| ANG- | 24V / 60A | None | Factory New - Various Applications | | | | |

CHRYSLER ALTERNATORS - FACTORY OVERHAULED

| Model No. | Description | Part No. | Price |
|-----------|-------------|----------|-------|
| 2098615R | 12V/37A BD | 08-07032 | . |
| 2642996R | 12V/37A BD | 08-07033 | . |
| 2642997R | 12V/60A BD | 08-07034 | . |
| 3656623R | 12V/41A BD | 08-07035 | . |
| 3659924R | 12V/60A BD | 07-06401 | . |
| 4111810R | 12V/60A BD | 07-06402 | . |

FORD ALTERNATORS - FACTORY OVERHAULED

| Model No. | Description | Part No. | Price |
|--------------|-------------|----------|-------|
| DOFF10300C | 28V/60A GD | 07-06413 | . |
| DOFF10300DR | 28V/60A GD | 07-06418 | . |
| DOFF10300ER | 28V/38A GD | 07-06414 | . |
| DOFF10300FR | 15V/60A GD | 07-06415 | . |
| DOFF10300JR | 15V/60A BD | 07-06416 | . |
| E3FF10300AAR | 28V/95A BD | 07-06417 | . |
| E3FF10300BAR | 28V/60A BD | 07-06419 | . |
| EOFF10300AAR | 12V/95A BD | 08-07036 | . |
| EOFF10300BAR | 28V/60A BD | 07-06419 | . |

**Alternator regulators for these alternators are new solid state units which replace the original blue colored Ford regulators. These are no longer available. Proper regulator for use with these alternators is Cessna Part No. C611001-0201, manufactured by Electro Delta. P/N VR600 Net Price .

KELLY AEROSPACE OVERHAULED COMPONENTS



Aircraft Spruce carries the full line of alternators, and starters which are remanufactured by Kelly Aerospace for installation in general aviation aircraft. Fully FAA approved. All prices shown are exchange prices. Core charges are billed when unit is shipped. Core credit is issued upon return of acceptable like model core to Aircraft Spruce West in Corona, CA.

NOTE: If core is not in stock at factory, customer must send core to Aircraft Spruce at time of order to have the core overhauled.

| PRESTOLITE AL SERIES ALTERNATORS - OVERHAULED | | |
|---|----------|-------|
| Part No. | Volt/Amp | Price |
| ALE-6520R | 12V40A | . |
| ALE-8520R | 12V40A | . |
| ALE-8521R | 12V40A | . |
| ALT-8520R | 24V50A | . |
| ALT-8521R | 24V50A | . |
| ALT-9522R | 24V50A | . |
| ALU-6521RS | 24V70A | . |
| ALU-8521R | 24V70A | . |
| ALU-8521RS | 24V70A | . |
| ALU-9522R | 24V70A | . |
| ALV-8511R | 24V100A | . |
| ALV-8512R | 12V100A | . |
| ALV-9510R | 24V100A | . |
| ALX-6523R | 12V70A | . |
| ALX-8521R | 12V70A | . |
| ALX-8521RS | 12V70A | . |
| ALX9522R | 12V70A | . |
| ALX-9524R | 12V70A | . |
| ALX-9525BR | 12V70A | . |
| ALY-6520R | 12V60A | . |
| ALY-6521R | 12V60A | . |
| ALY-6522R | 12V60A | . |
| ALY-6527R | 12V60A | . |
| ALY-8520R | 12V60A | . |
| ALY-8520RS | 12V60A | . |
| ALY-8524R | 12V60A | . |
| ALY-8526R | 12V60A | . |

| TCM ALTERNATORS - OVERHAULED | | |
|------------------------------|----------|-------|
| Part No. | Volt/Amp | Price |
| 642056R | - | . |
| 646490R | - | . |
| 646843R | 24V60A | . |

| Part No. | Volt/Amp | Price |
|----------|----------|-------|
| 649280R | 28V70A | . |
| 649281R | 15V80A | . |
| 649304R | 24V100A | . |

ES4000 SERIES ALTERNATORS - OVERHAULED

| Part No. | Volt/Amp | Price |
|----------|----------|-------|
| ES4019RS | 28V130A | . |
| ES-4020R | 14V60A | . |

ALTERNATOR DRIVE COUPLINGS
Kelly Aerospace (Electrosystems) overhauls these alternator drive couplings for the gear driven TCM alternators. Add \$500 core charge (refundable) to prices shown below. **Part No. 646655R**
Applicable to engine models: IO-520, TSIO-520, IO-550, GTSIO-520 P/N 07-00641.....
Part No. 635796R
Applicable to engine models: C-75, C-85, C-90, C-115, C-125, C-145, E-165, E-185, E-225, O-200, O-300, GO-300, GIO-300, IO-240, IO-360, TSIO-360, & LTSIO-360 P/N 07-00642.....

| ALTERNATOR & GENERATOR BELTS | | |
|---------------------------------|--|--|
| LYCOMING ALTERNATOR | | |
| 37A19773-376..... | | |
| LYCOMING GENERATOR BELTS | | |
| 37B19774-374..... | | |
| 37B19774-325..... | | |
| CONTINENTAL | | |
| 539547-31.19..... | | |

KELLY AEROSPACE NEW ALTERNATORS



As the OEM, Kelly Aerospace offers factory new alternators engineered specifically to meet the challenges and increased demands of today's aircraft electrical systems. Each unit is aviation designed & developed, no automotive parts used. For decades our alternators have been powering Lycoming/Continental engines with unmatched performance and reliability. No Core charges.

AL SERIES ALTERNATOR - Prestolite Style - FAA/PMA Approved

| Model No. | Volts/Amperes | Description | Part No. | Price |
|------------|---------------|-------------|----------|-------|
| ALT8520 | 24V/50A | Belt Driven | 08-07122 | . |
| ALT8521 | 24V/50A | Belt Driven | 08-07123 | . |
| ALT8521LS | 24V/50A | Belt Driven | 08-07124 | . |
| ALT9522 | 24V/50A | Gear Driven | 08-07125 | . |
| ALU6521 LS | 24V/70A | Belt Driven | 08-07126 | . |
| ALU8521 | 24V/70A | Belt Driven | 08-07127 | . |
| ALU8521 LS | 24V/70A | Belt Driven | 08-07128 | . |
| ALU8532 LS | 24V/70A | Belt Driven | 08-07129 | . |
| ALX8521 | 12V/70A | Belt Driven | 08-07130 | . |
| ALX8521LS | 12V/70A | Belt Driven | 08-07131 | . |
| ALX8523 | 12V/70A | Belt Driven | 08-07132 | . |
| ALX9524 | 12V/70A | Gear Driven | 08-07133 | . |
| ALX9525B | 12V/70A | Gear Driven | 08-07134 | . |
| ALY9524 | 12V/60A | Belt Driven | 08-07135 | . |
| ALY6527 | 12V/60A | Belt Driven | 08-07136 | . |
| ALY8520 | 12V/60A | Belt Driven | 08-07137 | . |
| ALY8520LS | 12V/60A | Belt Driven | 08-07138 | . |

ES4000 SERIES ALTERNATOR - Ford Style - FAA/PMA Approved

| Model No. | Volts/Amperes | Description | Part No. | Price |
|-----------|---------------|-------------|----------|-------|
| ES4000 | 15V/60A | Belt Driven | 08-07139 | . |
| ES400LS | 15V/60A | Belt Driven | 08-07140 | . |
| ES4001 | 15V/60A | Gear Driven | 08-07141 | . |
| ES4002 | 15V/80A | Gear Driven | 08-07142 | . |
| ES4003 | 15V/95A | Belt Driven | 08-07143 | . |
| ES4004 | 28V/38A | Gear Driven | 08-07144 | . |
| ES4006 | 28V/60A | Gear Driven | 08-07145 | . |
| ES4008 | 28V/70A | Gear Driven | 08-07146 | . |
| ES4009 | 28V/70A | Belt Driven | 08-07147 | . |
| ES4011 | 28V/95A | Belt Driven | 08-07148 | . |
| ES4019LS | 28V/130A | Belt Driven | 08-07149 | . |

ES4020 SERIES ALTERNATOR - Chrysler Style - FAA/PMA Approved

| Model No. | Volts/Amperes | Description | Part No. | Price |
|-----------|---------------|-------------|----------|-------|
| ES4020 | 14V/90A | Belt Driven | 08-07150 | . |
| ES4029 | 28V/70A | Gear Driven | 08-07151 | . |

EP

PLANE POWER LIGHTWEIGHT ALTERNATORS



Plane-Power Lightweight Alternators are designed exclusively for aviation applications and constructed using only new, aviation-grade components. By maintaining higher quality standards and tighter tolerances, plane-power ensures improved performance, increased reliability and longer service than traditional OEM alternator solutions without the undesirable performance, weight and expense of conventional (heavyweight) OEM aircraft alternators. Plane-Power alternators are manufactured in Granbury, Texas by fellow aircraft owners and pilots who understand the importance of quality, value and simplicity desired by today's aircraft owners. Plane-Power alternators are available through dealers and FBO's worldwide. All Plane-Power alternators are warranted against failure in components and workmanship for a period of 2 years from the date of purchase. Finally Choice, Finally Plane-Power.



PMA APPROVED ALTERNATOR REPLACEMENTS

Plane-Power Certified Alternators are PMA certified to replace any existing alternator in the aircraft and engine applications listed below. No STC paperwork required. Alternators ship complete with all hardware and brackets necessary for pain free installation. All Plane-Power PMA alternators produce up to 70 amps. Your airframe/application may use only a portion of the available output as limited by the aircraft electrical system components and design. Every Plane-Power alternator is tested to exceed all quality and performance specifications. Plane-Power PowerFlex Voltage Regulators are also available separately.

| Model | Part No. | Price |
|-----------|----------|-------|
| AL12-F60 | 12-00998 | . |
| AL24-F60 | 12-00999 | . |
| AL12-F60C | 12-01256 | . |
| AL24-F60C | 12-01257 | . |
| AL12-P70 | 12-01001 | . |
| AL24-P70 | 12-01002 | . |
| AL12-70 | 12-01258 | . |
| AL24-70 | 12-01259 | . |
| AL24-FS60 | | 2.95 |

| American Champion | OEM Part # | Model # |
|---|-------------------------|-----------|
| 7ECA, 7GCAA, 7GCBC, 7KCA, 8GCBC, 8KCAB | ALY-8420 | AL12-P70 |
| Beechcraft | OEM Part # | Model # |
| 19A, B19, M19A, 23, A23-19, A23-24, B23, C23, A24, A24R, B24R, C24R | 33-380009-1 | AL12-F60 |
| 19A, B19, M19A, 23, A23-19, A23-24, B23, C23, A24, A24R, B24R, C24R | ALE-8105A / ALE-8406 | AL12-P70 |
| 76 Duchess, 77 Skipper | ALY-8420 | AL12-P70 |
| 76 Duchess | ALU-8421 | AL24-P70 |
| B19, C19, C24R | ALU-8421R | AL24-P70 |
| Cessna | OEM Part # | Model # |
| 177, 177A, 177B | C611501-0101 | AL12-F60 |
| 172L, K, L, M, N, P, 177, 177A, 177B, 177RG | C611501-0102 | AL12-F60 |
| 172Q, 177B | C611503-0102/ 9910591-7 | AL24-F60 |
| 172R, 172S, 182S, 182T, T182T | 9910591-5 / 9910591-11 | AL24-FS60 |
| P206A, P206B, P206C, P206D, P206E, U206, U206A, U206B, U206C, U206D, U206E, TP206A, TP206B, TP206C, TP206D, TP206E, TU206B, TU206C, TU206E, 207, T207, 210B, 210C, 210D, 210E, 210F, T210F, T210G, T210H, T210J | C611501-0101 | AL12-F60C |
| 180H, 180J, 180K, 182J, 182K, 182L, 182M, 182N, 182P, 182Q, 182R, 185E, 185F, 188, P206C, U206C, U206D, U206E, U206F, U206G, TP206C, TU206B, TU206C, TU206E, TU206F, TU206G, 207, T207 | C611501-0102 | AL12-F60C |
| 180H, 182G, 182H, 185D, 210E | 0750217-1 | AL12-F60C |
| 188, A188, 210G, 210H | 1570213-6 | AL12-F60C |
| 152, A152, 172M, 172N, 172P, 172RG, 177RG, R182, TR182 | C611503-0102 | AL24-F60 |
| 180J, 180K, 182P, 182Q, 182R, T182, U206E, U206F, U206G, TU206E, TU206F, TU206G, 207, T207, 210K, 210L, 210M, 210N, 210R, P210N, P210R, T210K, T210L, T210M, T210N, T210R | C611503-0102 | AL24-F60C |
| 188, 188A, 188B, A188, A188A, A188B, T188C, 207, T207 | 1570213-7 | AL24-F60C |
| A188, A188A, A188B, 210K, T210K | 1570213-6 | AL12-F60C |
| Commander | OEM Part # | Model # |
| 112, 112B, 112TC, 112TCA, 114, 114A, 114B, 114TC | LW14316 | AL12-P70 |
| Twin Commander Aircraft Corporation | OEM Part # | Model # |
| 500-S | 78314 | AL24-P70 |
| Diamond Aircraft Industries GmbH | OEM Part # | Model # |
| DA-40 | ALU-8421LS | AL24-70* |
| Grumman (Gulfstream, Tiger) | OEM Part # | Model # |
| AA-1, AA-1A, AA-1B, AA-1C | ALE-6420 / ALY-6420 | AL12-P70 |
| AA-5, AA-5A, AA-5B, AG-5B, GA-7 | LW-14310 | AL12-F60 |
| AG-5B | DOFF-10300J | AL12-F60 |
| | ALU8421LS | AL24-P70 |

| Mooney | OEM Part # | Model # |
|--|---|----------|
| M20C, M20E, M20F, M20G, M20J | ALY-8420 / ALX-8403 | AL12-P70 |
| M20J | ALU6421LS | AL24-P70 |
| M20M | ES-4009LS | AL24-P70 |
| Piper (Without Airconditioning) | OEM Part # | Model # |
| PA-23-250, PA-23-235, PA-24-260 | ALX-8403 | AL12-70* |
| PA-23-250, PA-23-235, PA-24-260 | ALX-8403 | AL12-P70 |
| PA-23-250, PA-23-235 | ALU-8403 | AL24-70* |
| PA-23-250, PA-23-235 | ALU-8403 | AL24-P70 |
| PA-44-180, PA-44-180T | 751 346 | AL12-P70 |
| PA-28-151, PA-32R-301 (SP), PA-32-301T, PA-32R-301(HP), PA-32R-301T (SP), PA-32-301, PA-34-200, PA-38-112 | 551-984 | AL12-P70 |
| PA-44-180, PA-44-180T | ALX8421LS | AL12-P70 |
| PA-28-140, PA-28-150, PA-28-151, PA-28-160, PA-28-180, PA-28-235, PA-28R-180, PA-28R-200, PA-32-260, PA-32-300 | 69670-00 (60 amp) | AL12-C60 |
| PA-28-140, PA-28-151, PA-28-161, PA-28-180, PA-28-235, PA-28R-200, PA-32-300 | 69670-03 (60 amp) | AL12-C60 |
| PA-28-151, PA-28-161, PA-28-181, PA-28-236, PA-28R-201, PA-28RT-201, PA-32-300, PA-32RT-300, PA-32RT-300T | 69670-04 (60 amp) | AL12-C60 |
| Vulcanair, S.P.A | OEM Part # | Model # |
| P68, P68B, P68C, P68C-TC, P68 "OBSERVER", P68TC "OBSERVER", P68 "OBSERVER 2" | ALU-8421LS | AL24-P70 |
| Lycoming Engines | OEM Part # | Model # |
| Engine Series 235, 320, 360, 540, 720 | 12v 70 amp or less Lycoming Alternators | AL12-P70 |
| Engine Series 235, 320, 360, 540, 720 | 24v 70 amp or less Lycoming Alternators | AL24-P70 |
| Engine Series 320, 360, 540, 720 | 12v 70amp or less Lycoming Alternators | AL12-70* |
| Engine Series 320, 360, 540, 720 | 24v 70amp or less Lycoming Alternators | AL24-70* |
| Superior Engines | OEM Part # | Model # |
| Engine Series O-360, IO-360 | 12v 70 amp or less Superior Alternators | AL12-70* |
| Engine Series O-360, IO-360 | 24v 70 amp or less Superior Alternators | AL24-70* |

Note: For engine applications Plane-Power alternators replace Lycoming and Superior certified 70 amp (or less) alternators. (Lycoming alternator part numbers begin with LW-)

*Comes with all new Plane-Power Mounting Brackets and hardware.

PLANE-POWER LIGHTWEIGHT EXPERIMENTAL ALTERNATORS

Unlike automotive alternators, all Plane-Power Experimental Alternators are specifically engineered for Airplane Engines and have Dual Internal Fans designed for Airplane Engine Rotation the same as our Certified Alternators. 2 year warranty,



The AL12-EI60 kit comes with an internally regulated ultra compact lightweight AIRCRAFT alternator (6.9 lbs.) with an exclusive internal crowbar over-voltage protection circuit. The alternator is fully pilot controllable through unique internal wiring. The dual internal fans are designed for aircraft engine rotation for maximum cooling.

The AL12-EI60 kit includes the tension arm, mounting brackets, required AN hardware, and V-Belt for Superior and most Lycoming* engines.

The AL12-EI70 kit includes a high output internally regulated AIRCRAFT alternator (10 lbs.) with an exclusive internal crowbar over-voltage protection circuit. The alternator is fully pilot controllable through unique internal wiring. The dual internal fans are designed for aircraft engine rotation for maximum cooling. The AL12-EI70 kit includes the tension arm, mounting brackets, required AN hardware, and V-Belt for Superior and most Lycoming* engines with a 9-3/4 engine pulley.



The EX14-50 kit is an internally regulated alternator kit for Small Block Continental Engines. the alternator (6.9 lbs.) includes an exclusive internal crowbar over-voltage protection circuit and is fully pilot controllable through unique internal wiring. The alternator includes dual internal fans designed for aircraft engine rotation. the kit also includes a pre-wired enable/field plug. The EX14-50 kit fits C75, C85, C90, C125, C145, E165, E185, E225, IO-240, O-200 and O-300



| Model | Output | Voltage | Part No. | Price |
|--------------------------|--------|---------|------------|-------|
| AL12-EI60/B (Boss Mount) | 60 | 12 | 07-01313 | . |
| AL12-EI60/C (Case Mount) | 60 | 12 | 07-01313-1 | . |
| AL12-EI70/B (Boss Mount) | 70 | 12 | 07-01414 | . |
| AL12-EI70/C (Case Mount) | 70 | 12 | 07-01414-1 | . |
| AL12-EE70/B (Boss Mount) | 70 | 12 | 07-01005 | . |

| Model | Output | Voltage | Part No. | Price |
|--------------------------|--------|---------|------------|-------|
| AL24-EE70/B (Boss Mount) | 70 | 24 | 07-01006 | . |
| AL12-EE70/C (Case Mount) | 70 | 12 | 07-01005-1 | . |
| AL24-EE70/C (Case Mount) | 70 | 24 | 07-01006-1 | . |
| EX14-50 | 50 | 12 | 07-01268 | . |

PLANE POWER CONVERSION KITS

BELT DRIVEN GENERATOR CONVERSIONS

| Aircraft Parts & Development | Plane-Power |
|---|-------------|
| Intermountain (Callair) A, A-2, A-4, A-5, A-5T, A-9, A-9B | SAL12-70 |
| Alexandria Aircraft, L.L.C. | |
| Bellanca 14-19-2, 14-19-3, 14-19-3A | SAL12-70C |
| Cessna Aircraft Co. | |
| 180, 180A, 180B, 180C, 180D, 180E, 180F, 180G, | SAL12-70C |
| 182, 182A, 182B, 182C, 182D, 182E, 182F, 182G, 182H, | SAL12-70C |
| 185, 185A, 185B, 185C, 185D | SAL12-70C |
| 210, 210A, 210-5 (205), 210-5A (205A) | SAL12-70C |
| 206, P206 | SAL12-70C |
| Cessna 310, 310A, 310B, 310C*, 310D*, 310E*, 310F*, 310G, 310H, 310J, 310K *10-9006 kit may be required for installation. View installation instructions online for further information | TAL24-70C |
| Fred Garcia | |
| Camair 480 | ITAL24-70C |
| ES 2003 Corporation (Piper) | |
| Piper PA-12, PA-12S | SAL12-70 |
| Hawker Beechcraft Co. | |
| Beech H35, J35, K35, M35, N35, P35, 35-33, 35-A33, 35-B33, 35-C33 | SAL12-70C |
| 23 | SAL12-70 |
| Beech Baron 95-55, 95-A55, 95-B55, 95-B55A | ITAL24-70C |
| Beech Travelair 95, B95, B95A, D95A, E95 | ITAL24-70 |
| Helio Aircraft, LLC | |
| Helio H-250 | SAL12-70 |
| Helio 500 | ITAL12-70 |
| KWAD Co. | |
| Super-V | ITAL12-70 |
| Latinoamerican De Aviacion | |
| Piper PA-25, PA-25-235, PA-35-260 | SAL12-70 |
| Lockheed Aircraft Corp. | |
| 402-2 | SAL12-70C |
| Mooney Airplane Company | |
| M20, M20A, M20B, M20C, M20D, M20E, M20F, M20G | SAL12-70 |
| Piper Aircraft, Inc. | |
| Piper PA-16, PA-16S | SAL12-70 |
| Piper PA-18, PA-18S, PA-18 "105" (SPECIAL), PA-18S | SAL12-70 |
| PIPER PA-18A, PA-18 "125" (Army L-21A), PA18S "125", PA-18AS "125", PA-18 "135" (Army L-21B), PA18A "135", PA-18S "135", PA-18AS "135", PA-18 "150", PA-18A "150", PA18S "150", PA-18AS "150", PA-19 (Army L-18C), PA-20, PA-20S, PA-20 "135", PA-22, PA-22-135, PA-22S-135, PA-22-150, PA-22S-150, PA-22-160, PA-22S-160 (When modified with FAA Approved rear mounted oil cooler) | SAL12-70 |
| Piper PA-20 "115", PA-20S "115" | SAL12-70 |
| Piper PA-22-108 | SAL12-70 |
| Piper PA-24, PA-24-250, PA-24-260, PA-24-400 | SAL12-70 |
| Piper PA-28-140, PA-28-150, PA-28-160, PA-28-180, PA-28-235, PA-28S-160, PA-28S-180 | SAL12-70 |
| Piper PA-23, PA-23-160, PA-23-235, PA-23-250, PA-E23-250 | ITAL12-70 |
| Piper PA-30 | ITAL12-70 |
| Prop-Jets Inc. | |
| Meyers 200, 200A, 200B, 200C, 200D | SAL12-70C |
| Raytheon Aircraft Co. | |
| 35, A35, B35, C35, D35, E35, F35, G35, 35R, modified by STC conversion to O-470 or IO-470 engine. | SAL12-70C |
| Revo, Inc. | |
| Colonial C1, Colonial C2, Lake LA-4, LA-4A, LA-4P | SAL12-70 |
| Sierra Hotel Aero, Inc. | |
| Navion D, E, F, G, H, and Navion (L-17A), Navion A (L-17-B & L-17C), B modified by STC conversion to O-470 or IO-470 | SAL12-70C |
| Twin Commander Aircraft Corporation | |
| 500A | TAL24-70C |
| 500, 500-B, 500-U | TAL24-70 |

GEAR DRIVEN GENERATOR CONVERSIONS

| Ad Aerospace | Plane-Power |
|--|-------------|
| T-211 | ER14-50 |
| Aerodifusion | |
| D-1190S | ER14-50 |
| Aeromca (Burl A. Rogers) | |
| 15AC, S15AC | ER14-50 |
| Aircraft Parts & Development | |
| A-3 | ER14-50 |
| All American | |
| 10A | ER14-50 |
| American Champion | |
| 402, 7EC, 7ECA, 7FC, 7JC, S7EC | ER14-50 |
| Hawker Beechcraft | |
| 35, 35R, 45 (YT-34), A35, B35, C35*, D35*, E35*, F35*, G35*, (*When equipped with E225-8 Engine) | ER14-50 |
| Cessna | |
| 120, 140, 140A, 150, 150A, 150B, 150C, 150D, 150E, 150F, 170, 170A, 170B, 172, 172A, 172B, 172C, 172D, 172E, 172F, 172G, 172H | ER14-50 |
| Commonwealth Aircraft | |
| 185 | ER14-50 |
| Edward Scott Kerns | |
| Trojan A-2 | ER14-50 |
| FA 2001 | |
| J5A (Army L-4F) (when equipped with C75-12 Engine) | ER14-50 |
| Swift Museum Foundation | |
| GC-1A, GC-1B | ER14-50 |
| Goodyear | |
| GA-22A | ER14-50 |
| Helio Aircraft | |
| 15A (when equipped with C145-2 Engine) | ER14-50 |
| Avion Jodel | |
| 150, D-1190, DR-1050 | ER14-50 |
| The Don Luscombe Aviation History Foundation | |
| 8E, 8F, T-8F | ER14-50 |
| Maule Aircraft Company | |
| BEE DEF M-4, M-4, M-4C, M-14S, M4T | ER14-50 |
| Thomas H. McClish | |
| B85C | ER14-50 |
| Micco Aircraft Company | |
| MAG-125C, MC-145 | ER14-50 |
| S.O.C.A.T.A | |
| (Ralley) Series 100S, Rallye Series MS 880B, Rallye Series | ER14-50 |
| Navion | |
| (Army L-4), (Army L-17B and L-17C) | ER14-50 |
| Piper | |
| J3C-35* (Army L-4), L-4A*, L-4B (Navy NE-1*), L-4H*, L-4J* (Navy NE-2**), J3C-65S*, -4A**, J4E* (Army L-4E), PA-18, PA-19, PA-18S***, PA-19S*** (When equipped with (*C75-12)(**C85-12)(***C90-12F)Engine) | ER14-50 |
| Quartz Mountain Aerospace | |
| 11A | ER14-50 |
| Superior | |
| (Culver) V, (Culver) V-2 | ER14-50 |
| Taylorcraft Aviation | |
| BC-12D-4-85, BCS12D-4-85 | ER14-50 |
| Univair Aircraft | |
| (Alon) A-2, (Alon) A-2A, (Forney) F-1, (Forney) F-1A, (Mooney) M10, ERCo 415-C*, ERCo 415-CD*, ERCo 415-D, ERCo E, ERCo G, (*When equipped with C75-12, C75-12F, C85-12 or C85-12F Engine) | ER14-50 |

PLANE-POWER LIGHTWEIGHT STC GENERATOR TO ALTERNATOR CONVERSIONS



BELT DRIVEN - Plane-Power Belt Driven Generator to Alternator Conversion Kits include hardware and brackets to replace your existing generator and regulator. Plane-Power STC Belt Driven Generator Conversion Kits allow for increasing the size of the output wire and circuit breaker to allow for a maximum of 70 amps of output. All Plane-Power alternators feature dual internal fans specially designed for aircraft engine rotation to maximize cooling. Models available for both 12 and 24 volt as well as for both Lycoming and Continental installations.

| Model | Output | Voltage | Part No. | Price | Model | Output | Voltage | Part No. | Price |
|-----------|----------|---------|----------|-------|-----------|----------|---------|----------|-------|
| SAL12-70 | 70 (max) | 12 | 07-01301 | . | TAL24-70 | 70 (max) | 24 | 07-01304 | . |
| SAL12-70C | 70 (max) | 12 | 07-01299 | . | TAL24-70C | 70 (max) | 24 | 07-01303 | . |
| TAL12-70 | 70 (max) | 12 | 07-01302 | . | | | | | |

GEAR DRIVEN - Plane-Power Gear Driven Generator to Alternator Conversion Kits replace your existing generator with an alternator which will provide higher output at lower rpm and allow for increasing the size of the output wire and circuit breaker to allow for a maximum of 50 amps of output. The ER14-50 will require the use of the existing late style continental gear, the Plane-Power ER14-GR or for E-Series Engines the gear support kit 'G-Pack' which will use the existing gear from the replaced generator. The ER14-50 weighs 6.9 lbs and comes with a pre-wired enable plug, 50 amp gear driven alternator, alternator inoperative lamp, Seals and R1224B Power-Flex voltage regulator.

| Model | Output | Voltage | Part No. | Price |
|---------|----------|---------|----------|-------|
| ER14-50 | 50 (max) | 12 | 07-01321 | . |



PLANE-POWER ALTERNATOR VOLTAGE REGULATORS



R1224

Plane-Power Power-Flex Voltage Regulators are FAA-PMA Approved solid-state voltage regulators with over-voltage protection, field short (over current) protection, and reverse battery protection. Plane-Power Power-Flex voltage regulators also support precision load sharing for twin applications and an alternator inoperative lamp. Power-Flex voltage regulators are designed to be setup in the field for 12 or 24 volt operation by a simple placement of the two internal jumpers. For smaller mounting placement on the R1224, installation aid 12-1021 may be used. Installation Aid 12-1021 available separately.



R1224B

| Model | Description | Voltage | PN | Price |
|--------|--|----------|----------|-------|
| R1224 | Replaces many Ford, Electrodelta, Prestolite, Interav, Wico, and FVR voltage regulators. | 12 or 24 | 07-01305 | . |
| R1224B | Replaces voltage regulators on twin Cessnas, Beechcraft, and Vulcanair. | 12 or 24 | 07-01306 | . |

B & C ALTERNATORS

B & C LIGHTWEIGHT ALTERNATORS



MODEL L40 ALTERNATOR

The model L40 is a belt driven 40 amp 14 volt alternator system for Lycoming engines including alternator assembly, mounting hardware, and belt, ready to install. The alternator weighs 6.1 lbs. and measures 3.9" in diameter and 5.6" long. The model L40 alternator was specifically designed to meet the rigorous demands of today's weight sensitive homebuilt designs and has undergone extensive in-flight service testing. This system incorporates the latest state-of-the-art advances in solid state electronic power management as well as incorporating a factory new, modern lightweight alternator. Applicable to Lycoming 118 H.P. through the 300 H.P. engines. L40 Boss Mount P/N 07-06815

Note - On Models L40 & L60 Alternators, order as follows:

L40 Case Mount (Narrow Deck Bracket) P/N 07-06810

L40 requires voltage regulator - see below

**Model L40 and L60 alternators require external regulators - use:
P/N 07-06742 (LR3C) for 14V, P/N 07-06786 (LS1A) for 28V
LS1A converts alternator to 28V**



MODEL L60 ALTERNATOR

Model L60 is a belt-driven, 14 or 28 volt alternator system for wide deck (boss mount) 118HP through 300HP Lycoming engines. The kit includes a NEW alternator, steel mounting bracket, belt tensioning arm, belt and mounting hardware, ready to install.

Alternator with pulley installed weighs 8.5 Lbs. With 60 amps of output, the L6. Will provide sufficient power to operate electric heaters in the Eze type airplanes. Warning! It is unwise to use this (or any other high output alternator) unless true over voltage protection is also installed. The LR-3C linear regulator and alternator control system is recommended.

L60 Case Mount P/N 07-06820

L60 Boss Mount P/N 07-06785

L60 requires voltage regulator - see ABOVE

30 AMP GEAR DRIVEN ALTERNATOR WITH PMR3



A 30amp gear-drive alternator for the Continental Engines (C-75 through O-300). After many customer requests for a gear-drive alternator with higher output, B&C Specialty Products introduces the latest product, model BC433-H.

Wt: 4lbs.; size: 4"dia. X 3.7" installed length. Features a billet aluminum mounting flange and creates 30 amps at cruise RPM. Ships with matching regulator. Sold without the Continental drive gear assembly (customer supplied), and requires the latest revision of the Hub (P/N 07-01327) and Retainer (P/N 07-01328) B&C has a limited supply of used drive gear assemblies, available at additional cost. NOTE: BC433-H requires purchase of PM/OV Kit 505-1 which provides crucial over voltage protection. P/N 07-00771

ACCESSORIES

505-1 B&C 14V Over Voltage Protection ..P/N 07-00772

Generator Hub Coupling 653983 P/N 07-01327

Generator Attaching Retainer 653982 P/N 07-01328

PERMANENT MAGNET ALTERNATOR OVER VOLTAGE MODULE WITH NOISE FILTER



A must for the PM alternators. The PM/OV was designed to give over voltage protection to the permanent magnet alternator. The yellow light will annunciate if the alternator switch is left off, or if the crowbar over voltage protection has been tripped. The capacitor will filter some noise, and help enhance the

regulation.

14 VoltP/N 08-00658

28 VoltP/N 07-00708

MODEL LR3C LINEAR REGULATOR



More than a voltage regulator, LR3C is an alternator control system. Features (1) solid-state over-voltage protection, (2) a low-voltage warning system, (3) output short circuit protection and (4) a linear voltage

regulator, all housed in a single unit. This combination of features is normally available only as separately purchased and installed items. Originally designed for the Voyager, around-the-world aircraft, the LR3C represents the best that technology can offer in a single, cost effective package. The LR3C is all solid-state and compatible with 14 or 28V, aircraft or automotive alternators. Will not work if alternator has a built-in regulator. Size: 5.7"l x 3.1"w x 2.7"h; weight: 10oz. Supplied with low-voltage warning lamp assembly & complete installation instructions. Specify 14 or 28V. Alternators with built-in voltage regulators must be modified before installation with the LR3C. The optional LR3C temperature sensor adjusts bus voltage by sensing battery temperature. This feature is especially useful in areas of extreme climate temperature changes. LR3C (14V)P/N 07-06742

LR3C (28V)P/N 07-06748

LR3C Battery Temp Sensor..P/N 07-06744

MODEL SD-8 ALTERNATOR & REGULATOR



The model SD-8 is a spline-driven, 14V alternator system for aircraft with an open vacuum pump drive pad. Features an ultra-reliable, brushless construction. A permanent magnet assembly supported on sealed ball bearings is spun around a fixed coil. With 8 amps of output, the model SD-8 is adequate for many VFR-day applications. The model SD-8 will power a solid state nav/com and transponder in addition to charging

a battery for engine starting. In production for over 10 years, hundreds of model SD-8 systems are flying. The model SD-8 is used by top aerobatic pilots around the world. Also used as backup power source on more sophisticated homebuilts. Wt.:3.7lbs. Pricing includes adjustable, solid state voltage regulator.P/N 07-06770

Over Voltage Kit 14V (required)P/N 08-00658

Over Voltage Kit 28V (required)P/N 07-00708

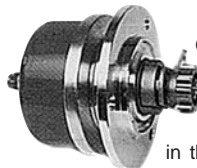


MODEL SD-20 ALTERNATOR

The SD-20 is a high-performance spline-driven alternator that mounts on a standard vacuum pump accessory pad. May be used either as a primary or a stand-by alternator for a rated output 20 amps @ 2500 alternator RPM. Constructed of all NEW materials (with absolutely NO "re-manufactured" content), the SD-20 is designed for durable service, with heavy-duty sealed ball-bearings, 2 cooling fans, a dynamically balanced rotor, and a special "shear section" designed into the drive coupling. The SD-20 is available for both 14 and 28 volt applications. and is externally-regulated. It may be appropriately matched with our LR3C, LS-1A, or SB1B Controllers (depending) on your application and electrical system configurations). Measuring 4.6" wide and 6" deep, and weighing only 5.75lbs., SD-20 will clear the tachometer cable and oil filter on stock Lycoming engines. P/N 07-06771

for over 10 years, hundreds of 200G systems are in service. With 12 amps of output the 200G will support a modest VFR-night system load. Wt 4.25 Lbs. Pricing includes an adjustable solid state voltage regulator. You supply a Continental generator drive gear assembly. Gear must be shipped by the factory to Aircraft Spruce for installation. P/N 07-06575

MODEL 200G ALTERNATOR



Gear-driven, 14V alternator system for aircraft powered with Continental C85-12 engines. Features ultra-reliable, brushless construction. Permanent magnet assembly supported on sealed ball bearings is spun around a fixed coil. Use in the prototype Vari-Eze. Has also seen service on many Cassuts, Vari-Ezes, Q-200s. etc. In production

for over 10 years, hundreds of 200G systems are in service. With 12 amps of output the 200G will support a modest VFR-night system load. Wt 4.25 Lbs. Pricing includes an adjustable solid state voltage regulator. You supply a Continental generator drive gear assembly. Gear must be shipped by the factory to Aircraft Spruce for installation. P/N 07-06575

New Drive gear.....P/N 07-06500

Over Voltage Kit 14V (required)P/N 08-00658

Over Voltage Kit 28V (required)P/N 07-00708



TURBO STAND-BY ALTERNATOR

The BPE-14 Turbo Alternator was designed to be installed on most classic, antique and homebuilt aircraft without an electrical system. This is a new design of the old Wind Generator, using the newest in technology techniques and materials. Particular effort was made to optimize the power output (6amp @ 85mph) with size (5" dia.) and

weight (5 lbs). STC'd for several aircraft, the unit contains the Turbo Alternator with a built-in regulator and installation kit. A battery is not needed but the Turbo will only produce current while flying. The basic BAE-14/28 Power Supply is a manually deployed, ram air driven, emergency supply for small aircraft. This unit is a true emergency back up unit and is capable of supplying electric power to drive a basic complement of flight-critical instruments. The Turbo Alternator remains stowed inside the airframe or wing until needed. By tugging on the single t-handle activator cable, a small gas cylinder spring pushes the storage door open and deploys the ram air turbine alternator into the slipstream. For the BPE-14, please specify aircraft model, paint color and voltage. For the BAE-14/28, please specify aircraft model, voltage, registration number and serial number. STC'd for C182, C210, C206, Bonanza, PA-28, Piper PA-32 & Mooney.

BPE-14 Turbo AlternatorP/N 10-00747

BAE-14/28 Auxillary Power SupplyP/N 10-00748

STARTERS – ALTERNATORS



B & C LIGHTWEIGHT STARTERS FOR LYCOMINGS

This extraordinarily light weight starter was specifically designed to meet rigorous demands of today's weight sensitive aircraft designs. Weighing only 10.2 pounds, B & C starters develop more torque than standard starters. The first lightweight starter to be developed, the B & C starter has been in production for over 16 years. It is manufactured from 100% new components and features total ball-bearing construction. The pinion gear is mechanically engaged with the ring gear before power is applied to the motor. Cantilevered pinion gear mounting requires no forward shaft support bearing thus eliminating cowl interference. If battery failure precedes engine starting, a positive spring retraction system insures pinion gear disengagement. STC'd and PMA'd versions for installation on certificated aircraft are available. STC'd for aircraft powered by any of the following series of Lycoming engines:

- O-235 • O-290 • O-320 • IO-320 • AIO-320
- AEIO-320 • O-360 • IO-360 • AIO-360 • AEIO-360
- HO-360 • HIO-360 • O-540 • IO-540 • AEIO-540
- HIO-540 • TIO-540



B & C LIGHTWEIGHT STARTERS FOR CONTINENTALS

This new starter for the Continental 0-200 or 0-240 engine solves all the problems that other starters have had — worn out clutches, cracked pinion gears, hard to find parts. In addition, the BC320 is 4.3 to 5.2 lbs. lighter depending on whether you are replacing a key-type starter or a pull-cable type starter. The BC320 starter is STC'd for use in certificated aircraft and is available with, or without, the STC. Also available are two installation kits — one for replacing a key-type starter, the other for replacing a pull-cable type starter.

If you are replacing a key-type starter, you will need installation kit 501-1. Before installing the BC320, a needle bearing will need to be removed from your engine. To aid in removing this needle bearing, you may purchase Bearing removal kit, 501-2, for \$119.00. If you do not care to keep this tool, you may return it and be refunded \$80.00. If you are replacing a pull-cable starter, you will need installation kit 501-3. Before installing the BC320, you will need to cut off a steel shaft that is installed in your engine case. The new BC320 starter is a complete starter, ready to install, that will replace the existing motor, clutch, and pinion-gear. Tested by Continental with over 5000 start cycles without a problem. Recommended by Rutan Aircraft Factory. Except for paperwork, there are no differences between STC'd starters and starters for homebuilts. A starter must be ordered to match your battery voltage.

FOR CERTIFICATED AIRCRAFT APPLICATIONS

| Part No. | Model No. | Pinion Gear Pitch | Teeth on Ring Gear | Battery Voltage | Price |
|--------------------|-------------|-------------------|--------------------|-----------------|-------|
| LYCOMING | | | | | |
| 07-06700 | BC315-100-1 | 10/12 | 122 | 12 | . |
| 07-06705 | BC315-100-2 | 12/14 | 149 | 12 | . |
| 07-06710 | BC315-100-3 | 10/12 | 122 | 24 | . |
| 07-06715 | BC315-100-4 | 12/14 | 149 | 24 | . |
| CONTINENTAL | | | | | |
| 07-06716 | BC320-1 | | | 12 | . |

FOR EXPERIMENTAL AIRCRAFT APPLICATIONS

| Part No. | Model No. | Pinion Gear Pitch | Teeth on Ring Gear | Battery Voltage | Price |
|--------------------|---------------|-------------------|--------------------|-----------------|-------|
| LYCOMING | | | | | |
| 07-06720 | BCS206-122-12 | 10/12 | 122 | 12 | . |
| 07-06725 | BCS206-149-12 | 12/14 | 149 | 12 | . |
| 07-06730 | BCS206-122-24 | 10/12 | 122 | 24 | . |
| 07-06735 | BCS206-149-24 | 12/14 | 149 | 24 | . |
| CONTINENTAL | | | | | |
| 07-06737 | BC320-H | | | 12 | . |

B & C ACCESSORIES

- 501-1 Installation Kit (key type)..... P/N 07-06752
- 501-2 Bearing Removal Kit..... P/N 07-06753
- 501-3 Installation Kit (pull cable)..... P/N 07-06754



GENNIPOD WIND GENERATOR
The GenniPod wind generator has been designed and built for use on EXPERIMENTAL and Ultra-light Aircraft. Utilizing a new solid state voltage regulation system, the GenniPod has been designed to target 13.5 volts at a 4 amp output. Final Phase testing demonstrated sufficient power for, Instrument panel gauges, GPS, Handheld Nav-

Com, VW Ignition (point), and a fuel transfer Pump for those long cross country flights, (OSHKOSH!) Targeted airspeed for this unit was a cruise of 75 mph, and an aircraft Vne of 110 mph. Your GenniPod is delivered ready to mount on your airplane. Two wires, (Positive and Negative), will be linked to your electrical system. You will supply generator switch, 5 amp Breaker, and wiring to link the GenniPod to your system. A small motorcycle lead acid battery is also required These items are not supplied to allow you to build to your needs, and to keep our prices low. The GenniPod measures approximately 9" long, with a diameter of 7" at the prop. Weight will be approximately 3.5 pounds installed.

P/N 11-07182.....

INTERAV BELT DRIVEN ALTERNATOR KITS FAA APPROVED ALTERNATOR CONVERSION KITS



This high quality alternator kit is STC'D for most 14 volt aircraft and enables you to replace your belt driven generator with a current day alternator system. The superior features of this system include quick installation, voltage spike guard, built-in radio noise suppression, transistorized voltage regulator, and overvoltage relay protection. Kit includes alternator, mount, regulator, and overvoltage control. requires 60 Amp. Circuit Breaker(P/N 295-29694).

- Single Engine Kit..... P/N 07-06800.....
- Twin Engine Kit..... P/N 07-06850.....

INTERAV KITS INCLUDE

| Model No. | Ref. No. | Description | Purchase Kit Components Individually. Part No. | Price Per Component |
|-----------|-----------|---------------------------|--|---------------------|
| 015-01237 | A-152A | Alternator Assy | 07-00027 | . |
| 625-61623 | A-153C | Voltage Regulator | 625-61623 | . |
| 635-62448 | OVR-128 | Overvoltage Relay | 635-62448 | . |
| 015-01240 | A-167D | Mounting Bar Assy | 07-01290 | . |
| 245-23709 | A-178 | Spike Guard Capacitor | 07-00828 | . |
| 165-15041 | A-178-2 | Clamps | --- | . |
| 435-42408 | A-178-4 | Lead Kit | --- | . |
| 395-37992 | A-178C | Hardware Kit | --- | . |
| 415-40054 | OVR-12A-6 | Pacard | --- | . |
| --- | R-65-113 | Installation Instructions | --- | . |

ACCESSORIES

- 115-09964 Brush Holder Assembly..... P/N 07-00317
- 295-29694 60 Amp. Circuit Breaker..... P/N 295-29694



SKYTRONICS JASCO GEAR DRIVEN ALTERNATOR KITS

This Jasco alternator kit is STC'd for many aircraft including the early Cessna 150, 172, and 175 series as well as Beech Model 35's with early E series Continental engines. Applicable to Continental C-90, 0-200 and 0-300 engines. This kit includes 50 amp alternator, voltage regulator, over-voltage control, and STC documents. Available for 14V systems only. Well-proven over many years of use in a variety of aircraft. In stock for immediate shipment. STC'd for Cessna 150-170, 172, 175, Beech 35 Series, Navion A. Skytronics Kit #6560-1.

P/N 07-06900

| Volts | Amps | Drive | Alt. P/N | Kit P/N | Price |
|-------|------|------------------------------|-----------|----------|-------|
| 12 | 50 | 4 stud, 6 spline sqr pad | 6555T | 6555-1 | . |
| 12 | 50 | Round pad like Delco config. | 6560T | 07-06900 | . |
| 12 | 50 | 6 stud, 16 spline rnd. pad | 6565T | 6565-1 | . |
| 24 | 50 | 4 stud, 6 spline sqr. pad | 7555T | 7555-1 | . |
| 24 | 50 | 6 stud, 16 spline rnd pad | 7565T | 07-75651 | . |
| 24 | 70 | Hiller UH12E round pad | 7555H-72B | 07-07555 | . |
| 24 | 70 | 4 stud, 6 spline sqr. pad | 7655T | 07-00703 | . |
| 24 | 70 | 7555H-72B Kit | | 07-00702 | . |
| | | Alternator | 7555H-72B | 07-07555 | . |
| | | J12M24SPH Reg. Controller | J12M24SPH | 07-00314 | . |
| | | 17-10 Resist. 150 omega | 17-10 | 07-01710 | . |
| 24 | 70 | 7655T Kit | | 07-00703 | . |
| | | Alternator | 7655T | 07-00703 | . |
| | | J12M24SPH Reg. Controller | J12M24SP | 07-00696 | . |
| 12 | | 17-10 Resist. 150 omega | 17-10 | 07-01710 | . |
| 12 | | Voltage Controller | J12M20SP | 07-00697 | . |
| 24 | | Voltage Controller | J12M24SP | 07-00696 | . |
| 24 | | Voltage Controller | J12M24SPH | 07-00314 | . |
| 24 | | Voltage Controller | J24-100SP | 07-00698 | . |
| 24 | | 150 (omega) Resistor | 17-10 | 07-01710 | . |
| 24 | | 75 (omega) Resistor | 17-1 | 07-00699 | . |
| | | Terminal Conversion kit | ESC-2 | 07-00701 | . |

JASCO ALTERNATOR GASKET SA36100



Jasco Alternator Gasket SA36100 used only on a 6560T Alternator.

P/N 07-01287

KELLY AEROSPACE LYCOMING STARTERS

KELLY AEROSPACE X-DRIVE STARTERS

The X-Drive starter is newest in the light weight, high torque starter lineup from Kelly Aerospace. Targeted toward users that want one of the industries lightest but most powerful starter on the market, the X-Drive delivers the same high torque, low current draw, and superior duty cycle that had previously been available only to E-Drive customers. X-drive uses No Bendix, the same powerful permanent magnet motor as the E-drive, and is the lightest starter available. The X-Drive starter is FAA/PMA'd and allows Kelly Aerospace to service virtually all OEM/aftermarket Lycoming applications. Spin Better, not faster!





Only 7.6 lbs.
Lightest Starter Available

Features:

- Weight: 7.6 lbs. – Lightest Starter Available
- No Bendix
- Lowest Inrush & Operating Current Draw in the industry
- FAA/PMA
- Maintenance Free
- Aviation Solenoid
- No Automotive parts used
- All metal gear train
- Silver plated contacts reduce electrical arcing damage during engagement.
- 33% Higher Torque
- Superior Duty Cycle
- Environmentally tested under the most extreme conditions
- Available in Left or Right Solenoid mounts.

APPLICATION DATA GUIDE

| | | |
|--|--|-----------------------------------|
|  <p>FIGURE 1</p> | Solenoid to the Left: (X-Drive series: see figure 1) | |
| | SRZ-9021 (12 Volt - 149 tooth) | SRZ-9022 (12 Volt - 122 tooth) |
|  <p>FIGURE 2</p> | Solenoid to the Right: (X-Drive series: see figure 2) | |
| | SRZ-9031 (12 Volt - 149 tooth) | SRZ-9032 (12 Volt - 122 tooth) |
| | SRB-9031 (24 Volt - 149 tooth) | SRB-9032 (24 Volt - 122 tooth) |
| | (12/14 pitch works on a 149 tooth ring gear & 10/12 pitch works on a 122 tooth ring gear.) | |

| Description | Part No | Price |
|--------------------------------|----------|-------|
| Kelly X-Drive Starter SRB-9021 | 08-06271 | . |
| Kelly X-Drive Starter SRB-9022 | 08-06272 | . |
| Kelly X-Drive Starter SRB-9031 | 08-06273 | . |
| Kelly X-Drive Starter SRB-9032 | 08-06274 | . |
| Kelly X-Drive Starter SRZ-9021 | 08-06275 | . |
| Kelly X-Drive Starter SRZ-9022 | 08-06276 | . |
| Kelly X-Drive Starter SRZ-9031 | 08-06277 | . |
| Kelly X-Drive Starter SRZ-9032 | 08-06278 | . |

CROSS-REFERENCE CHART

| Sky-Tec P/N | X-Drive P/N | Sky-Tec P/N | X-Drive P/N |
|-------------|-------------|-------------|-------------|
| 122-12LS | SRZ-9022 | 149-12PM | SRZ-9031 |
| 122-12PM | SRZ-9032 | 149-24HT | SRB-9021 |
| 122-24LS | SRB-9022 | 149-24LS | SRB-9021 |
| 122-24PM | SRB-9032 | 149-24PM | SRB-9031 |
| 149-12LS | SRZ-9021 | | |

EP

KELLY AEROSPACE E-DRIVE STARTERS



Immune to Kick-Back Damage

There is no longer a need to replace overload devices (shear pins) after a kick-back event. The E-drive is unaffected by kick-backs saving hours of service time and replacement costs. The engine and starter are both protected by a proprietary torque limiting clutch drive design.

Solid-State Solenoid Control

The Printed Circuit Board (PCB) solenoid controller uses the latest in Surface Mount Technology (SMT) components. Each control is environmentally hardened and tested under the most extreme conditions. The field serviceable unit eliminates mechanical contacts for improved reliability and longer life. Monitoring the health status of the engine, starter, battery, and operational duty cycle will soon become a reality through enhancements to our proprietary solenoid control system.

Design & Source Control on All Components
Kelly Aerospace believes in engineering products specifically for the aviation industry and has design and source control over all components. Absolutely no automotive aftermarket parts are used. Why trust a part supplied from the automotive market where design details frequently change?

2 YEAR UNLIMITED WARRANTY - NO CORE CHARGE



- High Performance Armature
- Increased commutator bar length
- Thin laminations
- High quality magnetic alloy
- 12 & 24 volt winding configuration
- Redesigned Brush Holder
- Metal construction for heat sinking
- Offset brush position for increased brush contact area
- Robust spring design
- High performance field housing
- Rare earth neodymium magnets
- Small package
- Stronger flux field
- Improved temperature stability



- Starter system designed for maximum performance.
- Drive assembly integrates proprietary pinion gear, clutch, torque limiter, and actuator in one complete module.
- Available for coarse and fine pitch ring gears, clock-wise and counter-clock-wise rotation.
- No periodic service or recurring maintenance required.

APPLICATION CHART

E-Drive Number - Approved Alternative for the following:

| | | | |
|----------|----------|----------|----------|
| ERB-8011 | ERB-8012 | ERZ-8011 | ERZ-8012 |
| MHB-4001 | MHB-4015 | MZ-4205 | MZ-4204 |
| MHB-4002 | MHB-4002 | MZ-4206 | MZ-6204 |
| MHB-4003 | MHB-6001 | MZ-4207 | |
| MHB-4005 | | MZ-4217 | |
| MHB-4007 | | MZ-4218 | |
| MHB-4010 | | MZ-4219 | |
| MHB-4012 | | MZ-4221 | |
| MHB-4013 | | MZ-4224 | |
| MHB-4014 | | MZ-4222 | |
| MHB-4016 | | MZ-4223 | |
| MHB-4017 | | MZ-4225 | |
| MHB-4019 | | MZ-6222 | |
| MHB-4020 | | MZ-6224 | |

| MODEL | DESCRIPTION | PART NO. | PRICE |
|----------|--|----------|-------|
| ERZ-8011 | Clockwise rotation, 12 Volt, 149 tooth - 12/14 Pitch Gear | 07-01102 | . |
| ERZ-8012 | Clockwise rotation, 12 Volt, 122 tooth - 10/12 Pitch Gear | 07-01103 | . |
| ERB-8011 | Clockwise rotation, 24 Volt, 14 9 tooth - 12/14 Pitch Gear | 07-01099 | . |
| ERB-8012 | Clockwise rotation, 24 Volt, 122 tooth-10/12 Pitch Gear | 07-01101 | . |

KELLY AEROSPACE STARTERS

TCM ENERGIZER STARTERS

| FACTORY NEW | | | | FACTORY OVERHAULED | | | |
|-------------|------|----------|-------|--------------------|------|----------|-------|
| Model | Core | Part No. | Price | Model | Core | Part No. | Price |
| ES646238-2 | . | CALL | CALL | 646238-2R | . | CALL | CALL |
| ES646238-3 | . | CALL | CALL | 646238-3R | . | 07-06501 | . |
| ES646275-1 | . | CALL | CALL | 646275-1R | . | 07-06502 | . |

KELLY AEROSPACE FACTORY OVERHAULED STARTERS

If No Cores are Available at factory, we will require your core for overhaul.



| Mfg. Ref. | P/N | Core | Price |
|------------|----------|----------|-------|
| MC-6501 | 07-06503 | . | . |
| MHB-4004R | 08-06206 | . | . |
| MHB-4005R | 08-06207 | . | . |
| MHB-4008R | 08-06203 | . | . |
| MHB-4014R | 08-06209 | . | . |
| MHB-4016R | 07-06504 | . | . |
| MHB-4017R | 08-06211 | . | . |
| MHB-4018R | 08-06212 | . | . |
| MHB-4020R | CALL | . | CALL |
| MHJ-4003SR | 07-06505 | . | . |
| MHJ-4004R | 08-06204 | . | . |
| MHJ-4005R | 08-06205 | . | . |
| MMU-4001R | 07-06506 | . | . |
| MZ-4204R | CALL | \$165.00 | CALL |
| MZ-4208R | 08-06208 | . | . |
| MZ-4214R | 07-06513 | . | . |
| MZ-4219R | CALL | . | CALL |
| MZ-4220R | 08-06198 | . | . |
| MZ4222R | 07-06509 | . | . |
| MZ-4224R | CALL | . | CALL |
| MZ-4225R | 08-06201 | . | . |
| MZ-4226R | 08-06202 | . | . |

KELLY AEROSPACE NEW STARTERS

| Description | Part No. | Price |
|-----------------------------|----------|-------|
| MHJ-4003S NEW KELLY STARTER | 08-06180 | . |
| MHB-4014 NEW KELLY STARTER | 08-06182 | . |
| MHB-4016 NEW KELLY STARTER | 07-01110 | . |
| MHB-6014 NEW KELLY STARTER | 07-01109 | . |
| MZ-4214 NEW KELLY STARTER | 08-06179 | . |
| MZ-4220 NEW KELLY STARTER | 08-06186 | . |
| MZ-4222 NEW KELLY STARTER | 08-06188 | . |
| MZ-6220 NEW KELLY STARTER | 07-01296 | . |

OVERHAULED EXCHANGE UNITS AVAILABLE FOR ALMOST ALL ELECTRICAL ACCESSORIES

Call for quote on unlisted requirements. We stock all accessories at competitive prices.



KELLY AEROSPACE STARTER DRIVES

Designed to fit prestolite starters. Shipping Weight: all units, 2 Lbs.

| Description | Part No. | Price |
|--|----------|-------|
| EBB75A MZ series 42054207, 42174219. MHB series 40014007 & 40104013 | 07-06515 | . |
| EBB124AMHJ series-All, MMU series-All, M24204, MHB4015 | 07-06510 | . |
| EBB131AMZ series 4221 to 4223, MHB 4016 to 4019 | 07-06511 | . |
| EBB142A STARTER DRIVE ES EBB142A | 07-06512 | . |
| Lamar 9301001-F 01 OVERHAUL KIT PM1201 & 2401 Series Starters includes shear pin | 07-01180 | . |

CONVERSION CHART

The Magnaflite lightweight starter listed in the table below will be superseded by the E-Drive and/or X-Drive starter listed therein. All Magnaflite P/N's listed below that are currently installed, being installed or in inventory are in no way affected. Standard Limited Warranty, is in effect and returns for reason of supercedure will not be accepted.

| KAPS Part Number | X-Drive Left Hand Solenoid | X-Drive Right Hand Solenoid | E-Drive |
|------------------|----------------------------|-----------------------------|----------|
| MHB-6016 | SRB-9021 | SRB-9031 | ERB-8011 |
| MHB-6018 | SRB-9021 | SRB-9031 | ERB-8011 |
| MMU-6001 | SRB-9022 | SRB-9032 | ERB-8012 |
| MZ-6204 | SRZ-9022 | SRZ-9032 | ERZ-8012 |
| MZ-6222 | SRZ-9021 | SRZ-9031 | ERZ-8011 |
| MZ-6224 | SRZ-9021 | SRZ-9031 | ERZ-8011 |
| MZ-6226 | SRZ-9021 | N/A | ERZ-8011 |



SKY-TEC STARTERS

SKY-TEC STARTERS FOR CONTINENTAL ENGINES

Sky-Tec starters are now the factory OEM starter for Teledyne Continental engines. Features of Sky-Tec's ST2 and ST3 starters for TCM engines include low current draw, high-torque and very light weight. All Sky-Tec Continental starters feature Sky-Tec's exclusive Kickback Protection System either by means of a field-replaceable shear pin (ST2 model starters) or torque limiter (ST2 model starters). Sky-Tec ST2 and ST3 starters are maintenance free and FAA-PMA manufactured to exacting TCM OEM standards. ST2 starters fit engines from A65-12 (Mooney Mite engine) up to O-300C (Cessna 172) and ST3 starters fit all TCM engines with a right-angle starter adapter gearbox on the rear of the engine (O-300D through TIO-520 engines).

Sky-Tec ST2 Model Starters weigh only 9.2 lbs. replacing heavyweight old OEM starters weighing more than twice as much. Installation is simple via PMA (factory key-start replacement C12ST2 starter) or STC (pull start conversion kit KCST2 starter). ST2 starters replace trouble-prone continuous running sprag clutched heavyweight old starters. Key-start ST2 starters can be installed without removing the needle bearing in the engine.

Sky-Tec ST3 Model starters weigh only 6.5 lbs. replacing heavyweight old OEM starters weighing up to three times as much! ST3 Model starter installation is a very simple bolt-off/bolt-on affair and certification is via FAA-PMA (no 337's or STC's required). Sky-Tec ST3 starters unique centrifugal clutch feature permit the ST3 starter to release the TCM starter adapter faster than any other starter making it the safest starter available for all types of TCM starter adapters. Sky-Tec ST3 model starters are the only lightweight permanent magnet starters recommended for use on all types of TCM starter adapters by the most respected starter adapter rebuilders. All Sky-Tec starters carry a generous 2-Year warranty.

SKY-TEC ST2 & KCST2 MODEL STARTERS FOR SMALL CONTINENTAL ENGINES



SKY-TEC C12ST2 - FOR FACTORY KEYS STARTER FOR A65-12 THROUGH O-300C ENGINES

- 9.2 lbs., Bolt-off / Bolt-on, High Torque, Low-Current, Gasket Included, Replaces TCM starter & continuous running sprag clutch in TCM factory keystart engines.

SKY-TEC KCST2 - STC-CERTIFIED CONVERSION KIT FOR FACTORY PULL-START ENGINES - STC Modification of Engine Required (removal of OEM starter pinion shaft in rear of engine). STC Modification of Airframe Required (replacement of pull-start T-handle with Sky-Tec-supplied push button & wiring) High Torque, Low-Current, 9.2 lbs.

Complete Conversion Kit includes: C12ST2/S Starter, Push Button Switch, Wiring Harness, Gasket, Instructions, STC for Airframe Modification, STC for Engine Modification

- Model C12ST2.....P/N 07-00614
- Model C12ST2/S (Starter only)P/N 07-00719
- Model KCST2P/N 07-00721
- KCSW Switch and harness only.....P/N 07-00722

SKY-TEC ST3 MODEL STARTERS FOR LARGE CONTINENTAL ENGINES



Safe for all types of TCM starter adapters! Feature Sky-Tec's exclusive proprietary clutch design virtually eliminating starter-induced TCM starter adapter wear. FAA-PMA certified replacement part approved for all TCM starter adapters including "classic Style", "improved style", "permold", and "sand cast" engines. Simple bolt-off / bolt-on installation.

Designed to crank no slower than TCM heavyweight OEM starters. Generous 2-Year factory warranty.

- Model C12ST3 12 Volt.....P/N 07-00766.....
- Model C24ST3 24 Volt.....P/N 07-00767.....

SKY-TEC STARTER FOR ROTAX ENGINES



4.1 lbs. Bolt-off / Bolt-on. High Torque, Low-Current. Heavy-Duty "Gold"-type Starter. Fits Rotax 912 and 914-series engines.

- P/N 07-01263

SKY-TEC BCE-6 EXTENSION CABLE KIT



6" Battery Cable Extension kit aids the installation of starters in aircraft that have limited slack available in the aircraft's starter power cable. Generally not required for TCM starter installations. May be needed in some PM, and NL model Lycoming installations.

- P/N 07-00923

SKY-TEC STARTERS FOR LYCOMING ENGINES

For more than twenty years, Sky-Tec has focused solely on one obsession: making the world's best aircraft engine starters. Sky-Tec's passion and commitment to general aviation continues today with a full line of lightweight, high-performance starters for Lycoming, Continental and even Rotax engines. Every Sky-Tec starter is engineered, designed, manufactured and supported by pilots and aircraft owners like you. Sky-Tec starters are specially designed for each aircraft engine application with a relentless focus on performance, reliability and trouble-free fit. Sky-Tec uses only FAA-PMA certified airworthy components resulting in reliability that exceeds engine TSO. Sky-Tec's legendary innovations include Sky-Tec's exclusive Kickback Protection System (KPS), ultra-lightweight high-torque motors, proven Bendix-free electromechanical solenoid engagement (and disengagement), and super-strong, lightweight housings designed to endure years of use on every aircraft. Every Sky-Tec starter comes backed by the best warranty in the industry (2-years) by the best people in the business. **There is NEVER A CORE CHARGE on Sky-Tec starters!**

SKY-TEC STARTERS HIGH-TORQUE INLINE STARTERS FOR LYCOMING ENGINES



Featuring Sky-Tec's Exclusive KPS® Kickback Protection System, Sky-Tec's NL-series of starters are now available in Extended Cranking SuperDuty versions (see table below) - perfect for hard to start as well as hard to fit aircraft. The /ec series starters feature

unprecedented duty cycle capabilities and are virtually impossible to hurt on even the hardest starting 24V aircraft. Now available as factory original equipment on nearly all new Lycoming-powered airplanes, no other starter is manufactured to more exacting standards for quality, reliability and workmanship than Sky-Tec's Inline series starters. All NL-series starters are FAA-PMA certified as replacement parts for all non-gear, flat Lycoming engines. Sky-Tec NL-series starters fit without modification or 337 paperwork. At only 9.4 lbs., the NL-series is the lightest Bendix-free inline available. Generous two-year warranty.

| Model No. | Voltage/Description | Pitch | FAA-PMA Eligible | Part No. | Price |
|------------|-----------------------------------|---------------------------------|--|----------|-------|
| 122-NL | 12 Volt (Also 24 Volt Switchable) | 10/12 (for 122-Tooth Rng Gears) | Lyc 235, 290, 320, 360, 540 & 720 | 07-00761 | . |
| 149-NL | 12 Volt (Also 24 Volt Switchable) | 12/14 (for 149-Tooth Rng Gears) | Lyc. 235, 290, 320, 340, 360, 540 | 07-00762 | . |
| 149-NLR | 12 Volt (Also 24 Volt Switchable) | 12/14 (for 149-Tooth Rng Gears) | Lyc. LIO-320, LO-360, LTO-360, LIO-360, LHO-360 & LTIO-540 | 07-00763 | . |
| 122-NL/ec | 24 Volt Super Duty | 10/12 (for 122-Tooth Rng Gears) | Lyc. 235, 290, 320, 360, 540 & 720 | 08-07061 | . |
| 149-NL/ec | 24 Volt Super Duty | 12/14 (for 149-Tooth Rng Gears) | Lyc. 235, 290, 320, 340, 360, 540 & | 08-07062 | . |
| 149-NLR/ec | 24 Volt Super Duty | 12/14 (for 149-Tooth Rng Gears) | Lyc. LTIO-540 | 08-07060 | . |

SKY-TEC HIGH-TORQUE STARTER



Newly Improved! The original High-Torque starter is available with Sky-Tec's exclusive Extended Cranking Super Duty 24 Volt motor. Also stronger and more durable thanks to an improved strontium-fortified aluminum alloy and beefed-up mount castings. Still one of the lightest Lycoming starters available at only 8.5 lbs. Spins twice as fast as most heavyweight OEM starters. Zero maintenance. FAA-PMA approved for most Lycoming engines. Also available specifically configured to directly replace costly B&C starters on Robinson helicopters. Some airframe applications may require modification for best fit. Confirm aircraft fit, ring gear tooth count and voltage before ordering. Generous 2-Year factory warranty.

| Model | Voltage | Description | Part No. | Price |
|-------------|--------------------|---|----------|-------|
| 122-12HT | 12 Volt | 10/12 (122 Tooth) | 07-06250 | . |
| 149-12HT | 12 Volt | 12/14 (149 Tooth) | 07-06251 | . |
| 122-HT/ec | 24 Volt Super Duty | 10/12 (122 Tooth) | 07-01323 | . |
| 149-HT/ec | 24 Volt Super Duty | Duty 12/14 (149 Tooth) | 07-06255 | . |
| 149-12HT-H | 12 Volt | Replaces B&C Starters on 12 Volt Robinson Helicopters | 07-01336 | . |
| 149-HT/ec-H | 24 Volt Super Duty | Replaces B&C Starters on 24 Volt Robinson Helicopters | 07-01337 | . |

SKY-TEC FLYWEIGHT™ STARTERS FOR LYCOMING ENGINES



Newly Improved! The original Flyweight™ starter that started the lightweight revolution is now even stronger and more durable thanks to an improved strontium-fortified aluminum alloy and beefed-up mount castings. Still one of the lightest Lycoming starters available at 8.25 lbs. Spins twice as fast as most heavyweight OEM starters. Zero maintenance. FAA-PMA approved for most Lycoming engines. Some airframe applications may require modification for best fit. LS model has the solenoid offset to the left side and PM model is offset to

the right. Confirm aircraft fit, ring gear tooth count and voltage before ordering. Generous 2-Year factory warranty.

| Model | Part No. | Price |
|-----------|----------|-------|
| 122-12LS | 07-06245 | . |
| 149-12LS | 07-06246 | . |
| 149-24LS | 07-06247 | . |
| 122-12PM | 07-06252 | . |
| 149-12PM | 07-06253 | . |
| 122-243PM | 07-06249 | . |
| 149-24PM | 07-06257 | . |

LAMAR STARTERS

LAMAR STARTERS (NEW)



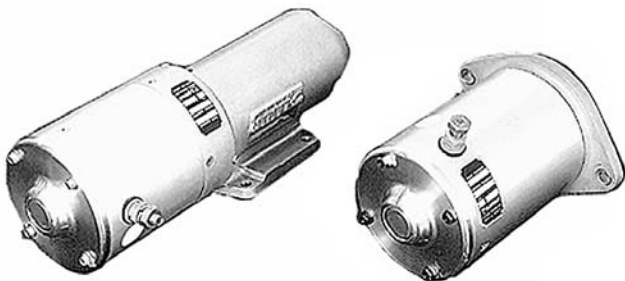
Lamar Permanent Magnet Starters represent the next generation in starter technology, setting new standards in performance and reliability. These new lightweight starters deliver exceptional torque to start virtually any general aviation piston engine in nearly any environment, yet weigh about 40 percent less than conventional starters. The key is Precision's patented permanent magnet motor design. It replaces the bulky windings of a conventional starter motor with lightweight permanent magnets. This revolutionary design not only eliminates considerable weight, but results in more efficient starter operation and improved performance under all conditions. During extensive performance testing, Lamar starters consistently provided quicker engine starts than conventional starters under a variety of operating conditions. These TBO starters are built to go the distance between engine overhauls. Conventional starters generally don't last. They usually have to be pulled off for repair or replacement at least once during the life of the engine.

During extensive performance testing, Lamar starters consistently provided quicker engine starts than conventional starters under a variety of operating conditions. These TBO starters are built to go the distance between engine overhauls. Conventional starters generally don't last. They usually have to be pulled off for repair or replacement at least once during the life of the engine.

| P/N 12V | PRESTOLITE | LYCOMING | PRICE | P/N 24V | PRESTOLITE | LYCOMING | PRICE |
|--------------------|------------|----------|-------|---------|------------|----------|-------|
| PM1203 | MZ-4204 | 76210 | . | PM2401 | MHB-4001 | 76212 | . |
| PM1201 | MZ-4205 | 76213 | . | PM2401 | MHB-4002 | 75700 | . |
| PM1201 | MZ-4206 | 76211 | . | PM2401 | MHB-4003 | 76214 | . |
| PM1201 | MZ-4207 | 75699 | . | N/A | MHB-4004 | 77879 | --- |
| N/A | MZ-4208 | 75787 | --- | PM2401 | MHB-4005 | 78791 | . |
| PM1204 | MZ-4216 | LW-10556 | --- | PM2401 | MHB-4007 | LW-11936 | . |
| PM1201 | MZ-4217 | LW-14209 | . | PM2401 | MHB-4008 | LW-12023 | . |
| PM1201 | MZ-4218 | LW-14207 | . | PM2401 | MHB-4009 | LW-12159 | . |
| N/A | MZ-4219 | LW-14211 | --- | PM2401 | MHB-4010 | LW-14208 | . |
| PM1204 | MZ-4220 | LW-14215 | --- | N/A | MHB-4011 | LW-14212 | --- |
| PM1201 | MZ-4221 | LW-15573 | . | PM2401 | MHB-4012 | LW-14210 | . |
| PM1201 | MZ-4222 | LW-17771 | . | PM2402 | MHB-4013 | LW-14213 | --- |
| N/A | MZ-4223 | LW-15576 | --- | PM2401 | MHB-4014 | LW-14214 | . |
| PM1202 | MZ-4224 | LW-16460 | --- | PM2403 | MHB-4015 | LW-15483 | . |
| PM1201 | MZ-4225 | LW-18047 | . | PM2401 | MHB-4016 | LW-15572 | . |
| PM1201 | MZ-4226 | LW-18989 | . | N/A | MHB-4017 | LW-15571 | --- |
| CONTINENTAL | | | | PM2402 | MHB-4018 | LW-15577 | --- |
| PM1207 | --- | 646238 | . | PM2401 | MHB-4019 | LW-15574 | . |
| | | | | PM2401 | MHB-4020 | LW-18990 | . |
| | | | | N/A | MHB-4004 | 77879 | --- |
| | | | | N/A | MHB-4005 | LW-12787 | --- |
| | | | | PM2403 | MHB-4001 | LW-16207 | . |
| CONTINENTAL | | | | PM2407 | --- | 642275 | . |



LAMAR OVERHAULED STARTERS



In addition to the factory new Lamar starters listed above, Aircraft Spruce also stocks overhauled Lamar starters. The PM1201 starter is ideal for the Lycoming O-320 & O-360 series engines and the PM2401 is applicable to the Lycoming O-540 series engines. Like the new Lamar starters, these overhauled starters are FAA/PMA approved, fully bench tested, provide superior cold weather performance, utilize a patented permanent magnet design, use a planetary gear reduction for optimum speed and torque (110 RPM), and draw less amperage than lightweights to help lengthen battery life.

Overhauled PM1201 starter P/N 08-01201
 Overhauled PM2401 starter P/N 08-02401

LAMAR SUPER SWITCH



The Super Switch is designed to replace all contractors on the aircraft with a wide variety of applications from master contractor through starter, external power, and alternator contractors.

The Super Switch reduces weight and increases reliability through solid state technology. Both Bi-directional and Uni-directional functions allow multiple applications. Current limiting is available for special applications requiring "Smart" technology.

Features & Benefits:

- Up to 66% lighter weight.
- 5 to 44 volt operating range.
- Solid State technology
- Up to 600 amps momentary operation.
- 99% more reliable.
- Replaces all mechanical contractors.
- No moving parts
- Up to 100 amps continuous
- Negative or positive turn on

Uni-Directional P/N 07-01283 **CALL FOR PRICE**
 Bi-Directional P/N 07-01284 **CALL FOR PRICE**

LAMAR ELECTRICAL COMPONENTS

LAMAR MC10 MASTER ELECTRICAL CONTROL UNIT



MC10

The Lamar MC10 is a master electrical control unit developed for 14V and 24V single engine experimental aircraft. It is designed to mount on the firewall or fuselage. It houses all the major electrical components except for the battery, starter, and alternator. The MC10 provides a greater degree of protection against moisture, dust and accidental electrical shorts along with the convenience of all the primary electrical components in one location. Features low installation cost, ease of installation and simplified troubleshooting and repair with several new performance & safety features.

The MC10 embodies the following functions:

- Master (battery) (solenoid) control closing the master switch on pilot's panel connects the battery to the primary bus.
- 3 aircraft bus outputs, protected via resettable circuit breakers.
- Alternator Control; voltage regulation, overvoltage protection, field output overload protection, alternator feeder fault protection
- Starter control (solenoid)
- Low voltage warning. (L model also includes overvoltage, over-current and reverse-current annunciation)
- Battery charge/ discharge ammeter drive (current shunt)
- Clock output (always-on) protected with easily accessible external mounted fuse.
- Ground power receptacle & control (solenoid) with reverse polarity protection.



PM Starter



XT60

| Description | Part No. | Price |
|---|----------|-------|
| Lamar Master Controller only 14V Exper. | 11-03295 | . |
| Lamar Master Controller 28V Exper. | 11-03298 | . |
| Lamar XT2860 New Alternator 28 | 07-00839 | . |
| Lamar Master Control 14V Exp. MC-10 | 11-03295 | . |
| Lamar AC14-EXP 28V | 11-05041 | . |
| Lamar GC07-EXP Generator Control | 11-05042 | . |
| Lamar GC11-EXP Generator Control | 11-05043 | . |
| Lamar MC09-T1 Master Control Turbo | 11-05055 | . |

LAMAR ELECTRICAL COMPONENTS


| LAMAR # | DESCRIPTION | APPLICATIONS | OUR P/N | PRICE |
|-------------|--|---|----------|-------|
| A-00258-1 | Switch, Alternator INOP | Piper: PA23 Series, PA30, PA39, PA38, PA28 Series, PA32 Series, PA34-200T, PA34-220T, Maule*, Raytheon:A36, V358, F338, F33, F33A, F33C, F33A, V35A, 36 | 07-01146 | . |
| A-00258-2 | Switch, Alternator INOP | Piper: PA23 Series, PA31 Series, PA34, PA31P, Twin Commander 700 Maule*, Raytheon: 57, E55, 5895B55, D55 | 07-01147 | . |
| B-00266-2 | Overvoltage Relay, 28V, Piper | Piper: PA23-235, PA23-250, PA31 Series, PA36 Series, Islander*: BN2A, BN2B, BN2T, BN2T-4, Trislander*: BN2A MK 11 Series | 07-01148 | . |
| B-00286-1 | Regulator, 28V, Parallel OP (twin) | Piper: PA23-235, PA23-250, PA31, PA300, PA44-180/180T, PA31P, PA34-220T, Cessna*: 421, 414, 402, 340, 310 | 07-01449 | . |
| B-00288-1 | Regulator, 14V, Parallel OP (twin) | Piper: PA23-235, PA23-250, PA30, PA39, PA34-200T, PA34-220T, PA44-180, PA44-180T, Gulfstream Aero* | 07-01150 | . |
| B-00289-2 | Overvoltage Relay, 14V | Piper: PA18, PA30, PA39, PA23-235, PA23-250, PA28 Series, PA32 Series, PA34-220, PA34-220T, Beech*: 19A, B19, M19A, 23, A23, A23A, A23-19, A23-24, B23, C23, A24, A24R, B24R, C24R, Bellanca*: 14-19, 19-2, 19-3, 19-3A, 17-30, 31, 31TC, 17-30A, 31A, 31ATC, Citabria*: 70CAA, 7ECA, 7GCBC, 7KCAB, 1GCBC, 1KCAB, Commander*: 112, B, TC, TCA, Cessna*: 175, 185, 188, Grumman*: AA-1, Lake*: LA-4, A, P, Maule*: M-5-180C, 235C, M-6-180, 235, M-7-235, MX-7-180, 235, Varga*: 2150A | 07-01151 | . |
| B-00306-3 | Regulator, 28V, Parallel OP (twin) | Piper: PA60, PA60-601, PA60-601P, PA60-602P, PA60-700P | 07-01153 | . |
| B-00307-1 | Voltage Regulator, 28V | Twin Commander 700, 500s | 07-01454 | . |
| B-00325-1 | Timer, Pneumatic, 28V | Piper: PA23 Series, PA31 Series, PA31T Series | 07-01455 | . |
| B-00331-2 | Voltage Regulator, Type 1, 14V | Piper: PA38 | 11-04130 | . |
| B-00337-0 | Overvoltage Relay, 28V | Twin Commander 690C, 695, 695A, 690D, 695B | 07-01456 | . |
| B-00337-1 | Overvoltage Relay, 28V | Twin Commander 700 | 07-01157 | . |
| B-00341-1 | Time Delay Switch | Piper: PA31 Series, PA42-720 | 07-01158 | . |
| B-00345-1 | Thermostat Control | Piper: PA31T, T1 | 07-01159 | . |
| B-00353-1 | Timer Module, Surface De-ice | Piper: PA31 Series, PA31P, PA42-720, PA42-1000 | 07-01161 | . |
| B-00363-1 | Timer, Courtesy Light, Beech-28V | Raytheon: E55, 58, 58TC, 58P, 38P, 38P-1, 38P-2, 390 | 07-01162 | . |
| B-00364-1 | Timer Courtesy Light (15 min.) | Piper: PA42-720, PA42-1000, PA46-350, PA31T Series | 07-01163 | . |
| B-00364-2 | Timer Courtesy Light (30 sec.) | Piper PA 31 Series, PA46-310, PA46-350 | 07-01164 | . |
| B-00368-25 | Alternator Control, 28V Load | Experimental | 11-03164 | . |
| B-00369-2 | Timer (15 sec.) | Piper: PA31T3 | 07-01166 | . |
| B-00371-1 | Alternator Control, 14V | Piper: PA 28 Series, PA32 Series, PA38, Bellanca*: 80CB, 8KCAB, Maule*: M-5-180C, 235C, M-7-235, MT-7-235, M-8-235, MX-7-180, MXT-7-160, 180, 235, Aviat*: Pitts S-2B, S2S, Zenair*: Zenith 2000 | 07-01167 | . |
| B-300371-25 | Alternator Control, 14V | Experimental | 11-03163 | . |
| B-00372-1 | Alternator Control, Load Balancing | Raytheon: 58, E55, 95B55 | 07-01168 | . |
| B-00375-1 | Monitor Low Voltage | Twin Commander 690C, 690D, 695, 695A | 07-01169 | . |
| B-00375-2 | Monitor Low Voltage | Piper: PA31P, PA31T Series, PA34 Series, PA46-310, PA46-350, PA31 Series | 07-01170 | . |
| B-00378-4 | Monitor Low Voltage, 14V | Experimental | 11-03166 | . |
| B-00378-5 | Monitor Low Voltage, 28V | Experimental | 11-03167 | . |
| B-00380-2 | Sensor-Alt Out, 28V Pulsed | Raytheon: 58 | 07-01171 | . |
| B-00382-1 | Alternator Control, 28V Load | Piper: PA31-350, PA34-220, PA46-310, PA46-350, PA31 | 07-01172 | . |
| B-00387-1 | Voltage Regulator with Overvoltage Protection, 28V | Raytheon: A36, F33A, B36TC, 58, V35B, F33C | 07-01173 | . |
| B-00392-1 | Alternator Control, 14V, Piper | Piper: PA44-180, PA44-180T | 07-01174 | . |
| B-00393-1 | Motor Control | Piper: PA46-310P, PA60-700P | 07-01175 | . |
| B-00396-2 | Dimmer Assembly, 14V/28V | Experimental | 11-03165 | . |
| B-00403-1 | Voltage Regulator with Overvoltage Protection, 14V | Raytheon: F33A, F33C, V35B, A36 | 07-01176 | . |

*ALL ITEMS ARE AVAILABLE THROUGH OEM ONLY.


EP

ENGINE PARTS


INTAKE HOSES

 Lycoming 1-3/4" Intake Hose
69603
Cont. #22800 OUTER & Cont.
#21185 INNER Hose (8 sets required
for A-65 thru 0-300) P/N 08-03700
Cont. #22800 OUTER Intake Hose
22800
Cont. #21185 INNER Intake Hose
21185


INTAKE GASKETS

 Cont. #21327 (4) for A-65 only. . ea
Cont. #22250 (4) for C-85 — 0-300 ea


EXHAUST GASKETS

 Cont. #21493 (08-05237) for
A-65 thru 0-300 (4) List \$4.30 . ea
Cont. #632837 Stainless Steel ea
Lyc. #65321 for 0-235 — 0-540 (4) ea


EXHAUST NUTS

 Cont. #22022 (5/16-24) for A-65 thru
0-300 (8) ea
Cont. #MS20500-428
(1/4-28) for 0-470 (12) ea
Lyc. #STD1410 (5/16-18) ea

ROCKER BOX GASKETS

 Cont. #530162 for A-65 thru 0-300
(4 required) ea
Lyc. #75906 for 0-235 thru 0-320 (4 req) ea

ROCKER BOX COVER SCREWS

 Cont. #535091 (24) Ea
Lyc. #STD1925 (24) Ea


CYLINDER BASE SEALS

 Cont. #21477 for A-65 thru
0-200 (4) Ea


MAGNETO FLANGE GASKET

 Cont. #535324 All Cont.
engines Ea
Lycoming #62224 Ea


TACH OIL SEAL

 Cont. #642714 (was #640087)
for A-65 thru 0-300
Lyc. #LW14260 for 0-235, 0-290
PN 642714

OIL PRESSURE HOUSING GASKETS

 Lyc. #61173 for 0-235, 0-290 (1) (2
with oil cooler) Ea

CARBURETOR GASKETS

 For A-65 thru 0-200 Cont.
#21051 (Top) Ea
Cont. #21323 (Bottom) Ea

GENERATOR DRIVE BELT

 Lyc. #60886 for 0-235,
0-290

"O" SERIES LYCOMING VALVE COVER GASKETS


 These homebuilder's
Lycoming valve cover gas-
kets replace the original cork
gaskets which come standard
on Lycoming 0-235, 0-320
and 0-360 engines. NOT FAA approved. For
experimental aircraft only.
P/N 08-01187




ANGLED VALVE "IO" SERIES LYCOMING VALVE COVER GASKETS

These gaskets are for the fuel injected "IO" series, sometimes referred to as the Angle Valve cylinder Lycoming They are not FAA approved and are not manufactured under a PMA. These are used on Angled valve Lycoming engines IO-360, IO-540, IO-720. P/N 08-05882

MAGNETO DRIVE GEAR

 Used on Bendix S4LN-21 and S4RN-21 magnetos. Not to be used on a C-90-8 engine. FAA PMA'd #36066


PUSH ROD SEALS

 Continental #539840 for A-65 thru
0-200 (8) Ea.


OIL SUMP GASKET & PLUG

 Cont. #3577 Gasket
Cont. #532432 Plug


CRANKSHAFT OIL SEALS

 Cont. #530019 for A-65 thru 0-200,
Flanged Shaft
Cont. #24321 for A-65 and C-85,
Taper Shaft
Lyc. #76940 for 0-235, 0-290

AN900 COPPER GASKETS

 Cont. Engine Applications, A-65
thru 0-200 (1) each:
-10: Oil sump drain plug ther-
mometer hole in oil screen, suc-
tion tube ass'y Ea
-14: Oil relief valve Ea
-22: Tach drive housing Ea
-28: Oil pressure screen Ea


AERO-SEAL HOSE CLAMPS

 Aero-Seal Clamps for Cont.
Intake Hoses.
P/N QS100-M32W Ea


PROP GOVERNOR GASKET

P/N 07-00878


RING HOSE CLAMPS

 Cont. #536388 (16) Required . Ea

ENGINE MOUNT BUSHINGS

 Cont. #22387 for A-65, C-85,
C-90 except C-90-14F (8) Req'd . Ea
Lyc. #60883 for 0-235 and 0-290,
7/8" hole (8) Req'd Ea
Lyc. #71032 for 0-320 with 1" hole (8) Req'd . Ea.

ENGINE MOUNT WASHERS

 Cont. #21530 for A-65, C-85,
C-90 except C-90-14F (8)
Req'd Ea
Lyc #STD619 for 0-235 thru
0-320 (8) Req'd Ea.

LYCOMING PARTS TO CONVERT 0-235 WITH SPIN ON OIL FILTER TO OIL SCREEN

Oil Pressure Screen Housing
P/N 68974
Oil Screen P/N 62817
Oil Screen Housing Gasket
P/N 61173
FOR OIL COOLER INSTALLATION ADD:
Spring P/N 69436
Plunger P/N 62415
Gasket P/N AN900-10

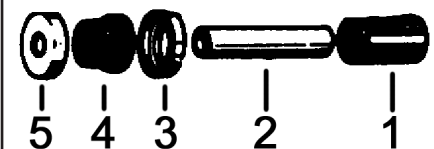
Cont. Oil Screen P/N 08-01544
OIL COOLER PARTS SHOWN ABOVE NOT USED WITH THERMAL VALVE ASS'Y

GENERATOR ATTACHING PARTS FOR CONT. C85, C90 & 0-200



| Ref. | P/N | Item | Price |
|------|--------|--------------|-------|
| #2 | 352068 | Oil Seal | |
| #3 | 530406 | Hub Coupling | |
| #4 | 352030 | Retainer | |
| #5 | 626543 | Bushing | ea |
| #6 | 530407 | Sleeve | |
| #7 | 531325 | Gear | |
| #8 | 530412 | Slotted Nut | |
| #9 | 35019 | Gen. Gskt | |
| #10 | 352179 | Starter Gskt | |

ENGINE MOUNTING PARTS FOR CONT. C-90-14F & 0-200 ONLY



| Ref. | P/N | Item | Qty. | Price Each |
|------|-------------|---------|------|------------|
| #1 | 628555-16 | Hose | (4) | |
| #2 | 530627 | Spacer | (4) | |
| #3 | 530626 | Seat | (8) | |
| #4 | 530740 | Bushing | (8) | |
| #5 | 530741 | Washer | (8) | |
| | AN6-55 | Bolt | (4) | |
| | AN310-6 | Nut | (4) | |
| | MS24665-283 | Pin | (4) | |

ALTERNATOR & GENERATOR BELTS



Lycoming 37A19773-376 (Alt.)
Lycoming 37B19774-374 (Gen.)
Lycoming 37B19774-325 (Gen.)
Continental 539547-31.19

24031 VALVE SPRING

 Continental Inner Valve
Spring Used on C90 & O-200
Engines
P/N 07-24031

EP

ENGINE PARTS

CONTINENTAL ENGINE PARTS

| C-85 | Price Each | Price Each |
|----------------------------------|-------------------|-----------------------------------|
| 639640 Bearing set, rod (2 req.) | | 643967 Ex. nut |
| 21477 Cyl base seal | | SA643873 Exhaust Valve |
| 530917 Crankshaft seal taper | | 653191 Gasket, rocker, angle |
| SA402151 Ex. stud | | SSR628260 Gasket, no-blow |
| 22022 Ex. nut | | SSR536413 Gasket, intake |
| 646612 Exhaust Valve | | 646546-A1 Gasket set, moh |
| 653728 Gasket, rocker | | 642917-1 Intake hose |
| 632837 Gasket, no-blow | | 646263 Piston |
| 22250 Gasket, intake | | 539467 Piston pin |
| 646539-A1 Gasket set, moh | | SA534610 Push rod packing |
| 21185 Intake hose | | 649226 Ring set, steel barrel |
| 641792 Intake Valve (30 degree) | | 649226CP Ring set, chrm barrel |
| 530019 Nose seal, flange sft. | | SSR539740 Rocker shaft |
| 530830 Piston pin | | 637837 Spring, valve, outer |
| 539840 Push rod packing | | 631521 Springs, valve, inner |
| 649632-A1 Ring set, steel barrel | | |
| IO-470 ANGLE HEAD | | |
| | | SSR532200 Cyl base seal |
| | | PA641250 Crankshaft seal |
| | | SA402151 Ex. stud |
| | | Ex. nut MS20500-428 |
| | | 643967 Ex. nut |
| | | SA643873 Exhaust Valve |
| | | 653191 Gasket, rocker, angle head |
| | | 628260 Gasket, no-blow |
| | | SSR536413 Gasket, intake |
| | | 646546-A1 Gasket set, moh |
| | | 642917-1 Intake hose |
| | | 646283 Intake Valve |
| | | 539467 Piston pin |
| | | SA534610 Push rod packing |
| | | SSR539740 Rocker shaft |
| IO-520 TSIO-520 | | |
| | | 630826 Bearing set, rod |
| | | 653888 Camshaft follower tappet |
| | | SSR641066 Cyl base seal |
| | | PA641250 Crankshaft seal |
| | | SSR401893 Ex. stud |
| | | SSR638125 Ex. stud, rosan |
| | | Ex. nut MS20500-428 |
| | | 643967 Ex. nut |
| | | SA643873 Exhaust Valve |
| | | 653191 Gasket, rocker |
| | | SSR628260 Gasket, no-blow |
| | | SSR536413 Gasket, intake |
| | | 642917-1 Intake hose |
| | | 646283 Intake Valve |
| | | 654850 Piston IO-520 |
| | | 630046 Piston pin |
| | | SA534610 Push rod packing |
| | | 652148 Ring set, steel cyl IO-520 |
| CONTINENTAL ENGINE BELTS | | |
| | | 539547-30.00 |
| | | 539547-31.19 |
| | | 539547-32.00 |
| | | 539547-35.00 |
| | | 642759 |
| | | 37A19973-376 (76026) |
| | | 37A19973-382 (74519) |
| | | 37B19774-325 (60886) |
| | | 37B19774-341 (71579) |
| CONTINENTAL CYLINDERS | | |
| | | O200 new assy 654377A10 |

LYCOMING ENGINE PARTS

| O-235 L,N SERIES | Price Each | Price Each |
|---------------------------------|-------------------|------------------------------|
| 69373 Bearing, rod, 8 req. | | SSRSTD-1196 |
| 71105 Camshaft follower tappet | | Intake hose 1-1/2" |
| SSR62869 Cyl base seal | | 69603 Intake hose 1-3/4" |
| STD-2180 Cyl drain hose | | 73938 Intake Valve |
| LW-11997 Crankshaft seal | | 75089 |
| SSR31C-12 Ex. stud | | Piston, high compression |
| STD-1410 Ex. nut | | 75413 |
| 41271 | | Piston, low compression |
| Fuel pump, mechanical | | SSRLW-13444 Piston pin |
| 75906 Gasket, rocker 4 required | | SSRLW-18661 |
| 77611 Gasket, no-blow | | Push rod packing |
| 71973 Gasket, intake | | 74241 Ring, compression |
| SSR61499-1 | | steel cylinder |
| Gasket set, moh | | SSR73857 |
| SSRSTD-1196 | | Ring, oil ctl steel cylinder |
| Intake hose 1-1/2" | | |
| LW11901 Intake Valve | | O,IO-360 |
| SSRLW-13445 Piston pin | | SSA72877 Camshaft follower |
| 68028 Piston pin plug | | SSR71481 Cyl base seal |
| SSRLW-18661 | | LW-11997 Crankshaft seal |
| Push rod packing | | SSR31C-12 Ex. stud |
| LW-11800 Spring, valve outer | | STD-1410 Ex. nut |
| | | LW-19001 Exhaust Valve |
| | | LW15473 Fuel pump, mech. |
| | | 75906 Gasket, rocker |
| | | 77611 Gasket, no-blow |
| | | 71973 Gasket, intake |
| | | SSR75439-1 |
| | | Gasket set, moh |
| | | 69603 Intake hose 1-3/4" |
| | | 75089 |
| | | Piston, high compression |
| | | SSRLW-18661 |
| | | Push rod packing |
| | | 74241 Ring, comp steel cyl |
| | | SSR73857 |
| | | Ring, oil ctk steel cyl |
| | | LW11795 |
| | | Springs, Valve, Inner |
| | | LW-11800 |
| | | Springs, Valve, Outer |
| | | O,IO-540 |
| | | SSR72877 Camshaft follower |
| | | SSR71481 Cyl base seal |
| | | 13792 Crankshaft seal |
| | | SSR31C-12 Ex. stud |
| | | STD-1410 Ex. nut |
| | | LW15473 Fuel pump, mech. |
| | | 75906 Gasket, rocker, most |
| | | 77611 Gasket, no-blow |
| | | 71973 Gasket, intake |
| | | SSR71569-1 Gasket set, moh |
| | | 69603 Intake hose 1-3/4" |
| | | 73938 Intake Valve |
| | | 75089 Piston |
| | | 60828 Piston pin plugs |
| | | SSR70310 Push rod packing |
| | | 74241 Ring, comp steel cyl |
| | | SSR73857 |
| | | Ring, oil ctk, steel cyl |
| | | LW11795 Spring, Valve, inner |
| | | LW-11800 |
| | | Springs Valve, outer |
| | | |
| | | O-320 |
| | | 71973 Gasket, intake |

EP

OIL COOLER GASKET SETS

| Our P/N | Continental P/N | Price ea. | Our P/N | Continental P/N | Price | Our P/N | Continental P/N | Price |
|----------|--------------------|-----------|----------|-----------------|-------|----------|-----------------|-------|
| 08-00951 | 631059/630849 | . | 08-00956 | 626342 | . | 08-00961 | 632372 | . |
| 08-00952 | 537282 4 Req./eng. | . | 08-00957 | 654554 | . | 08-00962 | 632372 | . |
| 08-00954 | 626342 | . | 08-00958 | 626342 | . | 08-00963 | 629116 | . |
| 08-00955 | 654554 | . | 08-00959 | 654554 | . | 08-00964 | 629116 | . |
| | | | 08-00960 | 631059/630849 | . | | | |

CHALLENGER AIR FILTERS



CHALLENGER AVIATION HIGH-FLOW AIR FILTER W/ K&N FILTER MEDIA

Features & Benefits of Prime air filters: • 40% - 50% better airflow • Can be washed and serviced up to 25 times • Increase horse power 2%-4% • Save money and improve engine efficiency • FAA-PMA approved • Properly serviced, can be used to TBO of an engine • Ecologically sound • Better takeoff and climb-out performance • Fire retardant • Faster airspeed and/or better fuel consumption • Have been used on high performance vehicles for 40yrs • Accordion fold design provides up to 5 times the filtering surface of non-pleated designs. **PART NUMBERS WITH A -1 INCLUDE GREASE.**

| Model | Application | Installation | Part No. | Price |
|----------|--|--|------------|-------|
| CPE-1957 | Aero Commander - A-9, A9A, A9B | Brackett BA-104 Fram CA-161PL | 08-00719-1 | . |
| CP-1150 | Aeronca - S65, S65CA, 7AC, 7ACA, 7 BCM(L-16A) ARMY, 7CCM(6-16B) ARMY, 7DC, 7EC, 7FC, 7JC, 7ECA, 7GCAA, 7GCBC, 7KC, 7KAB, 7SAC, 7SCCM, 7SDC, 7SEC P/N CP-3274 is the install kit. Use P/N CP-2402 to replace gasket at annual. | Brackett BA-4106 | 08-00843 | . |
| CPE-1957 | Aeronca - 7GC, 7GCA, 7HC, 7GCB, 7GCA, 7KC | Donaldson P10-4145, Fram CA-161-PL, Air Maze 13203 | 08-00719-1 | . |
| CP-2004 | Beech Baron - 95-C55 S/N TE-1 thru TE-451 except TE-50, 95-C55A S/N TE-1 Thru TE-451 Except TE-50, D55 S/N TE-452 Thru TE-492, D55A S/N TE-452 Thru TE-492, E55 S/N TE-768 Thru TE-1079, E55A S/N TE-768 Thru TE-1079, 58 S/N TH1-TH740. No sealing grease or gasket required for this application. | Donaldson P12-7996, Air Maze 121128-2, Brackett BA-6210-1 | 08-01024 | . |
| CP-2003 | Beech Bonanza/Debonaire - 35, A35, B35 S/N D2606 & UP, CGB35, 35-33, 35-A33, 35-B33, 35-C33, H35, J35, K35, M35, N35, P35, V35, V35A, V35B, S35, E33 all 225 H.P., E33A, F33, F33A, E33C, F33C, G33, 36, A36, A36TC, B36TC, G36, T-34 with STC SA1450SW, A45(T-34A) with STCSA1864SW, D45(T-34B) WITH STC SA1864SW, A45(B-45) with STC SA1864SW, A45(B-45) with STC SA1042GL, D45(T-34A) WITH STC SA1042GL, D45(T34B) with STC SA1042GL, A45(B-45) with STC SA1042GL. P/N C-P3276 is the install kit. Use P/N CP-2502 to replace gasket at annual. | Beech 35-380035-1-3-5-7, Donaldson - P10-5304, P10-137627, Brackett - BA-7110, BA-7210, BA-7410 | 08-00719-1 | . |
| CPE-1957 | Beech Musketeer - A23A, A23, A23-24, B23, 23 | Brackett BA-104, Beech 169-3 | 08-07101 | . |
| CP-1182 | Bellanca - 14-19-3-A, 17-30 P/N CP-3276 is the install kit. Use P/N CP-2602 To replace gasket at annual. | Brackett BA-8110 | 08-00870 | . |
| CPE-1957 | Bellanca - 17-30A | Brackett BA-104 | 08-00719-1 | . |
| CPE-1957 | Brantly B2B | Fram CA161PL | 08-00719-1 | . |
| CP-1150 | Cessna - 120, 140, 150, 150A-M, A150K, A150L, A150M, 152, A152 P/N CP-3274 is the install kit. Use P/N CP-2402 to replace gasket at annual. | Brackett BA-4106, Donaldson P10-7150, Cessna C294510-0201 | 08-00843 | . |
| CP-1172 | Cessna - 170, 170A, 170B, 172, 172A-G, H, I, K, L, M, N, P, Q P/N CP-3274 is the install kit. Use P/N CP-2302 To replace gasket at annual. | Cessna C294510-0301, Donaldson P10-7172, Brackett BA-5110 | 08-00902 | . |
| CPE-1173 | Cessna - 172R, S | Donaldson P198281, Fram 3559 | 08-00894-1 | . |
| CP-1182 | Cessna - 180, (exception 1953-1955 models), 180A-H, 180J-K, 182, 182A-H, 182J-R, T182 S/N 18208001 AND ON, 182S S/N 18280945 AND ON, 182T S/N 18280945 AND ON, 185, 185A-E, A185E, A185F P/N CP-3276 is the install kit. Use P/N CP-2602 To replace gasket at annual. | Cessna 0750038-1-4, Donaldson P10-6150, Brackett BA-8110 | 08-00870 | . |
| CPE-1202 | Cessna - 182S, S/N >s 18280001 thru 18280944 | Donaldson P19-8290, Fram CA3717 | 08-00903-1 | . |
| CPE-1178 | CIRRUS - SR-20, SR-22 No sealing grease required for this application. | Brackett BA-111 | 08-01221 | . |
| CP-2175 | GREAT LAKES - 2T1A-1, 2T1A-2 | 12009, P57A, AC-6486197 BA-101 | 08-06282 | . |
| CPE-1040 | GRUMMAN - AG CAT G164B | Brackett BA-105 | 08-00717-1 | . |
| CPE-1957 | LAVIA S.A. - PA25, PA25-235, PA25-260(PRIOR TO S/N 1477) | Fram CA-161PL, Brackett BA-104 | 08-00719-1 | . |
| CP-1150 | LUSCOMBE - 8, 8A, 8B, 8C, 8D, 8E, 8F, T-8F P/N CP-3274 is the install kit. Use P/N CP-2402 to replace gasket at annual. | Brackett BA-4106 | 08-00843 | . |
| CP-1172 | MAULE - M-4, M-4T, M-4C, M-4S, M-4-180C, M-4-180S, M-180T, M-4-220, M-4-220C, M-4-220S, M-4-220T, M-5-180C, MX-7-160, MX-7-180, M-5-210C, M-5-235C, M-5-210TC, M-5-220C, M-6-180, M-6-235, M-7-235 P/N CP-3274 is the install kit. Use P/N CP-2302 To replace gasket at annual. | Brackett BA-6110, Donaldson P12-6491 | 08-00902 | . |
| CPE-1178 | MAULE - M-4-210, M-4-210C, M-4-210S, M-4-210T, M-5-210C. No sealing grease required for this application. | Brackett BA-111 | 08-01221 | . |
| CP-1150 | MOONEY - M10 P/N CP-3274 is the install kit. Use P/N CP-2402 to replace gasket at annual. | Brackett BA-4106, Donaldson P12-0494 | 08-00843 | . |
| CP-1172 | MOONEY - M20, M20A, M20B, M20C, M20D, M20G P/N CP-3274 is the install kit. Use P/N CP-2302 To replace gasket at annual. | Fram 13219, Brackett BA-6110, Donaldson P12-6491 | 08-00902 | . |
| CP-1176 | MOONEY - M20 E,F REPLACEMENT GASKET P/N-CP-2802 | Donaldson P10-4065 Brackett BA-6310 | 08-01031 | . |
| CP-1174 | MOONEY - M20J (201) | BRACKETT BA-6210 | 08-00896 | . |
| CP-1175 | MOONEY - M20K S/N 25-1000 & UP | Donaldson P13-6287 | 08-01020-1 | . |
| CPE-1179 | MOONEY - M20M, M20R, M20S | MOONEY 600417-503, AM EDD4028, Donaldson P524257 | 08-01263-1 | . |
| CPE-1151 | PIPER - PA-18 S/N 18-6964 and up O-320 | Piper 454-118, Fram CA-122PL, Brackett BA-112 | 08-01032-1 | . |
| CPE-1040 | PIPER - PA28R-180, PA28R-200, PA28R-200T, PA28R-201, PA28RT-201, PA28R-201T, PA30, PA-34-200, PA39, PA44-180, PA44-180T | Piper 460-630 Brackett BA-105 | 08-00717-1 | . |
| CPE-1957 | PIPER - PA23-235A, PA23-235B, PA23-250B, PA-24 S/N 1479 and up, PA24-180 S/N 1477 and up, PA24-250 S/N 1477 and up, PA24-260, PA25-150, PA25-235, PA25-260 PRIOR TO S/N1477, PA28-140, PA28-150, PA28-160, PA28-180, PA28-181, PA28RT-201T, PA28-235, *PA32-260, *PA32-300 S/N 32-7640001 & UP, *PA32R-300, *PA32RT-300, *PA32R-301 (SP), *PA34-200T, *PA34-220T, *PA36 W/CONT. *COVER PLATE CPE-0528 MAY BE REQUIRED WHEN REPLACING Brackett FILTER. | Fram CA-161PL, Piper 460-632, Brackett BA-104, PURO AFP-2, AC-6485710 | 08-00719-1 | . |
| CP-1150 | PIPER - J3, J3C-65, J3C-65S, J5A, J5A-80, PA-11, PA-11S, PA-12, PA-12S, PA-16, PA-17, PA-18, PA-18A, PA-18S, PA-18-105, PA-20-115 PA-20-135, PA-22-108, PA-22-135, PA-22-150, PA-22-160, PA-38-112 P/N CP-3274 is the install kit. Use P/N CP-2402 to replace gasket at annual. | Brackett BA-4106, Piper 460-638 | 08-00843 | . |
| CPE-1956 | PIPER - PA28-151, 161 REPLACEMENT GASKET P/N CP-2604. | Brackett BA-16, Piper 560-679 | 08-01033 | . |
| CP-2003 | PIPER - PA-28-236, S/N 7311001 thru 7911282 P/N C-P3276 is the install kit. Use P/N CP-2502 To replace gasket at annual. | 560-854, P13-6602 | 08-00816 | . |
| CP-1150 | REIMS/(Cessna) F150G, F150H, F150J, F150K, F150L, F150M, FA150K, FA150L, F152, FA152 P/N CP-3274 is the install kit. Use P/N CP-2402 to replace gasket at annual. | Cessna C294510-0201 Brackett BA-4106 Donaldson P10-7150 | 08-00843 | . |
| CP-1172 | REIMS/(Cessna) - F172D, F172E, F172G, F172H, F172K, F172L, F172M P/N CP-3274 is the install kit. Use P/N CP-2302 To replace gasket at annual. | Cessna C294510-0301 Brackett BA-5110 Donaldson P10-7172 | 08-00902 | . |
| CPE-1220 | ROBINSON - R-44 | ROBINSON C771-1 | 08-00720-1 | . |
| CPE-1104 | ROBINSON - R-22 | ROBINSON A771-1 Brackett BA-110 | 08-01021-1 | . |
| CP-2100 | ROCKWELL COMMANDER - 100-180, 112, 112B | 124748-019 Brackett BA-3910 | 08-05915 | . |
| CP-2500 | ROCKWELL TWIN COMMANDER - 500A, B, U, 560F, 500S, 680F, 680FL, 680FL(P) | 3610239 Brackett BA-151 | 08-05916 | . |
| CP-1172 | SOCATA - TB9, TB10 P/N CP-3274 is the install kit. Use P/N CP-2302 To replace gasket at annual. | Brackett BA-5110 | 08-00902 | . |
| CP-2003 | SOCATA - TB20, TB21, TB200 P/N C-P3276 is the install kit. Use P/N CP-2502 TO REPLACE GASKET AT ANNUAL. | Brackett BA-7110 Brackett BA-7112 | 08-00816 | . |
| CP-1150 | TAYLORCRAFT - BF65, BF12-65, BFS65 P/N CP-3274 is the install kit. Use P/N CP-2402 to replace gasket at annual. | Brackett BA-4106 | 08-00843 | . |
| CP-1150 | TIGER AIRCRAFT/LLC/GULFSTREAM AMERICAN - AA-1, AA-1A, AA-1B, AA-1C, AA-5 P/N CP-3274 is the install kit. Use P/N CP-2402 to replace gasket at annual. | Brackett BA-4210 AMS13202 | 08-00843 | . |
| CP-1958 | TIGER AIRCRAFT/GULFSTREAM AMERICAN - TIGER AA-5B | Brackett BA-4106 | 08-01022-1 | . |
| CP-1150 | UNIVAIR - A-2, A2A (FORNEY) F-1, F-1A - P/N CP-3274 is the install kit. Use P/N CP-2402 to replace gasket at annual. | Brackett BA-4106 | 08-00843 | . |
| CP-1150 | GLOBE/SWIFT - SWIFT GC-1A, GC-1B P/N CP-3274 is the install kit. Use P/N CP-2402 to replace gasket at annual. | Brackett BA-4106 | 08-00843 | . |



CHALLENGER RE-CHARGING KIT

Challenger's recharger kit includes non-aerosol bottles of air filter cleaner and air filter oil for recharging air filters. Restores airflow efficiency. P/N 08-05884

DONALDSON AIR FILTERS



Donaldson has been the OEM source for Cessna, Piper, Beechcraft, and Maule & Mooney since the 1960's. They currently supply Cessna all of their SE Piston aircraft filters, Beech Bonanza & Baron filters, Mooney & Maul with their filters. For Piper they currently supply all of their Turbo charge aircraft with filters. Aircraft Spruce is a factory authorized distributor for Donaldson filters.

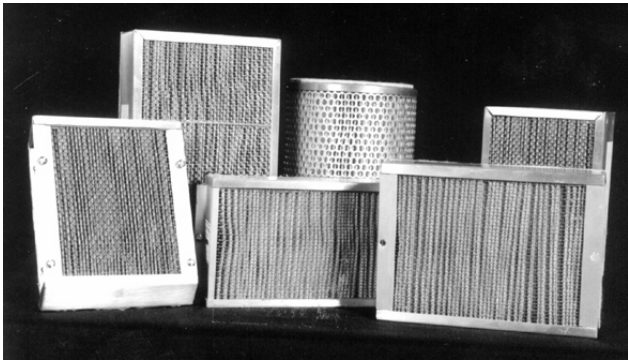
FEATURES: • High Performance Engine Intake Filters • Synthetic media: offers improved air flow and better dust capturing efficiency • Engineered to last 500 Flight Hours • Washable filter element, use compressed air/warm soapy water • Clean installation: dry media, no sticky/messy oil to trap dirt • OEM choice for GA aircraft for over 30 years • Meets All Flammability requirements per FAR 23.853 • Solid Construction with no removable parts-no loose screens, elements or screws • Exceptional wet weather performance, no oil to wash away in wet weather • Moisture passes thru the filter, doesn't build up an oiled surfaces (no oil present) • All filters starting with "P" feature our Premium Synthetic filter media • No Airworthiness Directives against Synthetic media filters • Cost efficient over the life of the filter, 3 years, 500 FH 5 cleanings

*Only filters with * after part number have cellulosus media*

| Donaldson # | OEM | Description | Our PN | Price |
|---------------|-------------------|----------------------------|----------------|-------|
| P107150 | C-294510-0201 | Engine Intake air filter | 08-06027 | . |
| P107172 | C-294510-0301 | Engine Intake air filter | 08-06024 | . |
| P15-1936 | PS600073 | Engine Intake air filter | 08-06029 | . |
| P107336 | C-294510-0401 | Engine Intake air filter | 08-06038 | . |
| P108337 | C-294510-0501 | Engine Intake air filter | Call for Quote | . |
| (AM107635FP*) | C-294510-0601 | Engine Intake air filter | 08-06040 | . |
| P106150 | 0750038-4 | Engine Intake air filter | 08-06023 | . |
| P131367 | C-294510-0901 | Engine Intake air filter | 08-06042 | . |
| P107188 | C-294510-0101 | Engine Intake air filter | 08-06043 | . |
| P112206 | 1250704-3 | Engine Intake air filter | 08-06044 | . |
| (AM102135FP*) | 1250704-3 | Engine Intake air filter | 08-06033 | . |
| P113206 | 1250704-4 | Engine Intake air filter | 08-06045 | . |
| (AM102235FP*) | 1250704-4 | Engine Intake air filter | 08-06046 | . |
| P107210 | 1250846-1 | Engine Intake air filter | 08-06047 | . |
| P131364 | C-294510-0801 | Engine Intake air filter | 08-06049 | . |
| P108421 | 99100181 | Engine Intake air filter | 08-06056 | . |
| P109337 | C-294510-0701 | Engine Intake air filter | Call for Quote | . |
| (AM102335FP*) | C-294510-0701 | Engine Intake air filter | 08-06051 | . |
| P108337 | C-294510-0501 | Engine Intake air filter | Call for Quote | . |
| (AM102035FP*) | C-294510-0501 | Engine Intake air filter | 08-06052 | . |
| P138988 | C-294510-1001 | Engine Intake air filter | Call for Quote | . |
| P148670 | C-294510-0902 | Engine Intake air filter | 08-06053 | . |
| (AM102735EA*) | 9910018-2 | Engine Intake air filter | 08-06054 | . |
| P126138 | 9910200-1 | Engine Intake air filter | Call for Quote | . |
| (AM102935EA*) | 9910200-1 | Engine Intake air filter | 08-06055 | . |
| P128156 | 9913001-1 | Engine Intake air filter | 08-06028 | . |
| P128157 | 9910141-1 | Engine Intake air filter | 08-06057 | . |
| (AM103035EA*) | 9910141-1 | Engine Intake air filter | 08-06058 | . |
| EBG03-0001 | C-294501-0101 | Instrument air filter | 08-06059 | . |
| P105290 | C-294501-0203 | Instrument air filter | 08-06060 | . |
| (AM106735EA) | 99100181 | Instrument air filter | 08-06030 | . |
| AM103435IA | C-294501-0301 | Instrument air filter | 08-06035 | . |
| AM103535IA | C-294501-0302 | Instrument air filter | 08-06036 | . |
| P122322 | 169-380064-3 | Engine Intake air filter | 08-06061 | . |
| P130374 | 45-91210 | Engine Intake air filter | 08-06062 | . |
| P102646 | 35-380035-3 | Engine Intake air filter | Call for Quote | . |
| P105304 | 35-380035-5 | Engine Intake air filter | 08-06032 | . |
| P137627 | 35-380035-7 | Engine Intake air filter | 08-06026 | . |
| P136680 | 105-389000-3 | Engine Intake air filter | 08-06063 | . |
| P133881 | P13-3881 | Engine Intake air filter | 08-06064 | . |
| P128219 | P12-8219 | Engine Intake air filter | 08-06065 | . |
| P127996 | P12-7996 | Engine Intake air filter | 08-06066 | . |
| P12-8167 | 96-389005-1 | Engine Intake air filter | 08-06025 | . |
| P10870 | 50-389070-15 | Engine Intake air filter | 08-06067 | . |
| P124439 | 50-389070-23 | Engine Intake air filter | 08-06069 | . |
| P105798 | 50-389070-11 | Engine Intake air filter | 08-06070 | . |
| AM101720FP* | 50-389070-11 | Engine Intake air filter | 08-06071 | . |
| EBG03-0003 | 205538-089 | Instrument air filter | 08-06072 | . |
| EBG03-0018 | 101-380039-1 | Instrument air filter | 08-06034 | . |
| P114419 | 26874-0 | Engine Intake air filter | 08-06073 | . |
| P136602 | P13-6602 | Engine Intake air filter | 08-06074 | . |
| P138683 | P13-8683 | Engine Intake air filter | 08-06075 | . |
| P106590 | P10-6590 | Engine Intake air filter | 08-06076 | . |
| AM105770FP* | 47075 | Engine Intake air filter | 08-06077 | . |
| P136739 | P13-6739 | Engine Intake air filter | 08-06078 | . |
| P138580 | 86881-2 | Engine Intake air filter | 08-06080 | . |
| P128156 | PS60007-3 | Engine Intake air filter | 08-06028 | . |
| AM108365FP* | P13-6287 | Engine Intake air filter | 08-06081 | . |
| 204418-156 | 77852 | Spin on oil Filter adapter | 08-06037 | . |
| P11-0172 | C-294510-0601 | Engine Intake air filter | 08-06228 | . |
| P198281 | P198281/CA3559 | Engine Intake air filter | 08-07051 | . |
| P198290 | P198290/CA3717 | Engine Intake air filter | 08-07052 | . |
| P197268 | P197268 | Engine Intake air filter | 08-07053 | . |
| P13-0234 | 125997-010 BA6210 | Engine Intake air filter | 08-07054 | . |
| ED04011 | 600417-501 | Engine Intake air filter | 08-07055 | . |
| ED04028 | 600417-503 | Engine Intake air filter | 08-07056 | . |
| P10-5225 | C-294501-0103 | Instrument air filter | 08-07057 | . |



AIR FILTERS



BEECH AIR FILTERS

| Item | Our P/N | Beech Equivalent P/N | Aircraft Type | Price |
|------|----------|--|------------------------------|-------|
| 1 | 08-00017 | 35-534470-19 P13-0374 | Beech 33, 35 | . |
| 2 | 08-00018 | P10-5304 35-534470-19 | Beech 33, 35, 36 | . |
| 3 | 08-00019 | P12-7996 (121128-2) TE946 thru TE1078 TH1 thru TH740 | Beech 58 | . |
| 4 | 08-00020 | P12-8219 (122601) | Beech 55 | . |
| 5 | 08-00021 | P10-8700 | Duke B60 | . |
| 5A | 08-00022 | P12-4439 (50-389070-23) | P Baron (58P) | . |
| 6 | 08-00023 | P12-8167 (96-389005-1) TE1079 & after TE741 & after | Beech E55 & 58 Late Model | . |
| 7 | 08-00024 | 169-380035-7 | | . |

CESSNA AIR FILTERS

| Item | Our P/N | Cessna Equivalent P/N | Aircraft Type | Price |
|------|----------|-----------------------|-------------------------------|-------|
| 2 | 08-00000 | C294510-0201 | Cessna 150 | . |
| 3 | 08-00001 | C294510-0301 | Cessna 172 | . |
| 4 | 08-00002 | C294510-0401 | Cessna 336, 337A-H | . |
| 4A | 08-00003 | C294510-0501 | Cessna 172 RG Cutlass | . |
| 5 | 08-00004 | C294510-0601 | Cessna 177 | . |
| 6 | 08-00005 | C294510-0801 | Cessna P210N, R | . |
| 7 | 08-00006 | C294510-0901 | Cessna 182RG | . |
| 8 | 08-00007 | 0750038-4 | Cessna 182 | . |
| 9 | 08-00008 | 1250704-3 (Port) | P206,A,B,C,D,E | . |
| 9A | 08-00009 | 1250704-4 (Stb) | To S/N 64535 w/o Air | . |
| 10 | 08-00010 | 1250846-1 | T206,A,B,C,D,E | . |
| 11 | 08-00011 | C294510-0501 | Cessna 337 | . |
| 12 | 08-00012 | 9910018-1 | Cessna T310R | . |
| 13 | 08-00013 | 9910018-2 | 310N,P,Q,T310P,T310Q | . |
| 14 | 08-00014 | 9910200-1 | Cessna 310R | . |
| 15 | 08-00015 | 9910141-1 | Cessna 404 | . |
| 16 | 08-00016 | 9913001-1 (108) | Cessna 340,340A Late Model | . |

PLEATED PAPER AIR FILTERS

These pleated paper aircraft induction air filters are manufactured in South Africa and are fully approved by the South African Dept. of Transport, Division of Civil Aviation. Strict quality control standards are enforced at all stages of manufacture. The filters feature aluminum frames and cured EA131 pleated elements with 96% micron rating. Rubber gaskets are waterproof, oil solvent, and chemical resistant. Mesh overlays are of stainless steel for enhanced strength, durability, and appearance. Not FAA approved at this time.

MOONEY AIR FILTERS

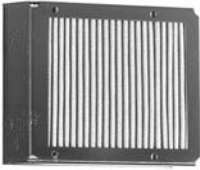
| Item | Our P/N | Mooney Equivalent P/N | Aircraft Type | Price |
|------|----------|-----------------------|---------------|-------|
| 1 | 08-00025 | 125997-010 | M20J | . |
| 2 | 08-00026 | 125685-004 | M20K | . |

PIPER AIR FILTERS

| Item | Our P/N | Piper Equivalent P/N | Aircraft Type | Price |
|------|----------|---|--|-------|
| 1 | 08-00027 | 560-854 (P13-8602) 28-7911001 thru 28-7911282 | Dakota PA28-236 | . |
| 2 | 08-00028 | 560-772 | Tomahawk (PA38) | . |
| 3 | 08-00029 | 124997-005 | Navajo/Chieftain (PA31) | . |
| 4 | 08-00030 | 13681-02 | Tri-Pacer (PA22) | . |
| 5 | 08-00031 | 560-947 | Saratoga (PA32-301T) | . |
| 6 | 08-00032 | 125196 | Piper Turbo Aztec (PA23) | . |
| 7 | 08-00033 | CA161 | PA28 & 32 Series (PA 36 Pawnee) (PA 34 Seneca) | . |
| 8 | 08-00034 | CA162 | PA32 & PA23 | . |
| 9 | 08-00035 | 35477-00 | PA28-161 | . |
| 10 | 08-00036 | CA122 | Super Cub (PA18) | . |

EP

AIR FILTERS



AIR-MAZE AIR FILTERS

Filter for Continental for A-65 thru C-125* P/N A40599
 Filter for Lycoming O-235, O-290, some O-320 (advise aircraft application) P/N A40599
 Aeronca 7AC, 11AC P/N 2-849

***FOR NEW INSTALLATION - P/N 24306 & P/N 24308 ARE REQUIRED**

K&N AIR FILTERS



Our K&N Filters are the industry standard in excellence. All filters are constructed with ultra-strong molded pliable rubber flanges which absorb vibration and provide secure attachment. These flanges can be stretched up to 1/8" (3mm) to fit in-between sizes. K&N Universal air filters are available in round, tapered, and oval designs, to fit just about any application. Use the dimensioned sketch and the selection chart to find the filter best suited to your application.

| Part No. | Application | Throat | Length | Dia. | Style | Price |
|----------|--------------------------------|---------|--------|--------|----------------|-------|
| 08-01053 | Rotax®/Bing 36mm | 2" | 2" | 5-3/8" | Round Straight | . |
| 08-01273 | Mikuni 32mm | 2-1/4" | 4" | 3-1/2" | Round Straight | . |
| 08-04977 | Mikuni 34mm | 2-1/2" | 3-1/2" | 4" | Round Straight | . |
| 08-04980 | Kawasaki/Mikuni 32mm | 2-3/4" | 3" | 5" | Round Straight | . |
| 08-04981 | Mikuni 36mm | 2-1/4" | 4" | 3-1/2" | Tapered | . |
| 08-04978 | Rotax®/Bing 32mm | 1-3/4" | 3" | 2-1/2" | Tapered | . |
| 08-01274 | Rotax®/Bing 36mm | 2-1/16" | 4" | 3-1/4" | Round Straight | . |
| 08-01275 | Rotax®/Bing 36mm | 2-1/16" | 4" | 3-1/2" | Tapered | . |
| 08-04979 | Rotax® 532/582 Dual Carbs | 2-1/16" | 8-1/2" | 3" | Dual Oval | . |
| 08-04976 | Rotax® 503 Dual Carbs | 2-1/16" | 8-1/2" | 3" | Dual Oval | . |
| 08-04977 | Mikuni 34mm | 2-7/16" | 3-1/2" | 4" | Straight | . |
| 08-01278 | Rotax® 503/532 Aerobatic carb. | 3-1/2" | 4-5/8" | 4-1/2" | Tapered | . |
| 08-01279 | Rotax® 912 Offset | 2" | 5-7/8" | 2" | Round offset | . |
| 08-01280 | Rotax® 814 Rd. Center | 2-7/16" | 3-1/2" | 5" | Round Centered | . |
| 08-04983 | Rotax®/Bing 36mm | 2-1/16" | 3" | 3" | Round Straight | . |
| 08-04984 | Rotax®/Bing 36mm | 2-1/16" | 3" | 3-1/2" | Round Straight | . |

EP



K&N AIR FILTERS

Rubber end cap instead of chrome makes this filter less likely to create damage in the event of a prop strike. Also includes rubber boss for safety wire attachment.

K&N AIR FILTER # SP2704 08-06098

K&N AIR FILTER # SP2706 08-06099

K&N FILTERCHARGER OIL



K&N Air Filter Oil is the only oil specially formulated to work in combination with the cotton fabric in K&N Filtercharger elements, providing a superior air filtration system. When used as directed, it quickly penetrates the filter pleats, where it remains suspended in the cotton fabric. Saturation is maintained until the element is cleaned with K&N Air Filter Cleaner.

6.5 oz. aerosol can - red P/N F99-0504

8 oz. squeeze bottle - red P/N F99-0533



K&N AIR FILTER CLEANER & DEGREASER

This is the only cleaner formulated to clean K&N Filtercharger elements. The use of any other cleaning solution will void the filter's warranty, and quite possibly could damage the cotton material. K&N Cleaner works to dissolve the dirt build-up and old filter oil, and can be washed away with water. It is biodegradable and safe on paint, chrome, cast aluminum, plastic, rubber, and vinyl when used as directed. Complete instructions on the bottle.

NOTE: Do not use on polished or anodized aluminum.

12-fluid oz. spray bottle P/N F99-0606

K&N SEALING GREASE



K&N Sealing Grease provides an airtight fit around sealing surfaces on all types of air filter elements. It resists heat and will not melt or run off. Not to be used on clamp-on filter elements.

8 oz. squeeze tube - black P/N F99-702



VARI-EZE / LONG EZ AIR INTAKE FILTER

NAPA #2904 air intake filter (equivalent to Purolator #AFP-177 & AC #44-8C)
 P/N 2904



K&N RECHARGER KIT

K&N Recharger® kits contain K&N air filter cleaner and air filter oil for recharging any K&N Filtercharger® Air Filter. Restores air flow efficiency so your K&N air filter performs like new!

P/N 08-00722

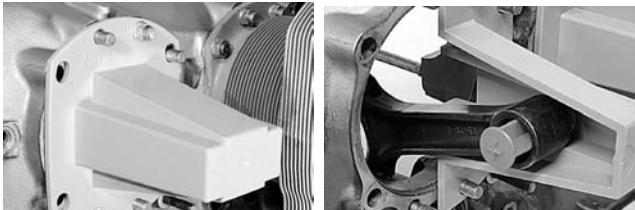
JANITROL HEATERS - LUBRICANTS

RAJAY TURBOCHARGER UNITS



Call Aircraft Spruce for quotation on all Rayjay turbocharger units, controllers, scavenge pumps, and valves. STC's Rayjay Turbocharging kits are available for certified and experimental aircraft such as Mooney, Piper, Cessna, Beech, Lancair, and Vans. Kits includes new exhaust system, turbocharger, scavenge pump, fuel pump, induction air box, and the hoses, valves, and fittings needed for installation.

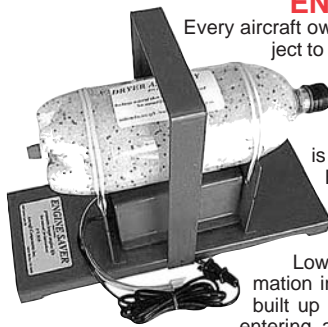
TOPCAP ENGINE PROTECTOR



Install TopCap in place of a removed cylinder to protect the engine from dirt, debris, and stray parts. Made from fuel and solvent resistant polymer, TopCap allows for full crankshaft rotation. One size fits Lycoming wide deck 320, 360, 540, 720 and Continental 470, 520, and 550.

P/N 08-00373..... /pr.

ENGINE SAVER



Every aircraft owner knows that his engine is subject to moisture build up and internal rust formation when not flown regularly. Oil companies spend millions developing special additives to minimize rust. Now there is a better way to fight this rust! The Engine saver produces a continuous supply of very low humidity air that is introduced into the engine through the breather. Low humidity air prevents water formation in the engine. The slight pressure built up keeps the moist outside air from entering, allowing the dry air to flow past the piston rings into the upper cylinder area protecting it as well. The Engine Saver is 110vac powered, requires no installation or FAA approval, and works with all piston engines. Pilots are flying less and the Engine Saver will save them money by reducing maintenance costs.

P/N 08-00724

AIRCRAFT HEATER KART 7600



A powerful blower draws in the hot air from your kerosene heater and blasts it out at high pressure and velocity. The adjustable discharge nozzle allows you to aim the hot air up into your engine cowling from below. The hot air naturally flows up and around the engine. The blower moves so much air that a tight seal with the cowling is not needed. Just roll the heater into position, turn it on and do your pre-flight. Aircraft Heater Kart 7600

P/N. 13-03150.....

JANITROL HEATERS



Our Janitrol heaters, rebuilt right at the factory by Janitrol Heater Products, a division of Kelly Aerospace feature new CermaKote combustion tubes and a more efficient, lightweight permanent magnet blower motor. These heaters are rebuilt to factory new tolerances and upgraded to the latest model configuration with a new serial number. These heaters are not affected by FAA AD Note 96-20-07. Three year, 1000 hour limited warranty, 1500 hour TBO.

JANITROL HEATER CERMAKOTE COMBUSTION TUBES

Janitrol Heater Products, division of Kelly Aerospace produces extended life "CermaKote" combustion tubes for individual sale. The "CermaKote" combustion tubes incorporate a special process to coat the areas susceptible to flame erosion. The FAA/TSO approved OEM combustion tube is engineered to provide years of safe operation through improved materials designed to better withstand the high temperatures and corrosive environment inside your heater. This product improvement will greatly decrease your routine heater maintenance cost and give you the added assurance that your heater is being maintained with the highest quality parts on the market today!

TANIS ENGINE DEHYDRATOR



Remove moisture, reduce corrosion, and increase engine life with the Tanis engine dehydrator. The Tanis engine dehydrator, features a closed loop system that removes moisture by circulating crankcase air through a self-contained desiccant. Easy set-up with one hose connected to the oil fill tube and the other to the crankcase vent. Includes adaptors for easy connection to Lycoming and large bore Continental engines.

Features : * Blower circulates humid engine air through a desiccant * Color changing desiccant absorbs moisture * Built-in oven regenerates desiccant - no need to remove desiccant to regenerate! * Digital thermometer/humidity sensor monitors performance

P/N 08-07105

AIM-A-SQUIRT



Aim-A-Squirt was developed out of the need to apply lubricants, corrosion inhibitors and solvents in those hard to reach areas without getting the products all over everything. Aim-A-Squirt has been tested with hundreds of different products which have had no affect on the special plastics the straw is made of. The straw is flexible enough that it will not kink when it is twisted in a small circle.

P/N 09-02325.....

LINKITE AVBLEND LUBRICANT

An oil supplement for all piston engine-powered aircraft owners and operators worldwide. AvBlend produces a wetting action that allows lubrication to penetrate the pores of an engine's metal surfaces. Providing critical lubrication at start-up, AvBlend helps prevent accumulation of combustion chamber areas. Wear is reduced, engines stay cleaner and combustion chambers stay properly sealed. Proper cylinder sealing is essential for achieving optimum peak pressure and design-level output. FAA approved. 4-cylinder engines require 1 can at each oil change, and 6 cylinder engines require 2 cans.



12oz. canP/N 08-05470
1Case (24 cans)P/N 08-05470-1

LUBRICANTS – GASKETS – DEGREASERS

REAL GASKET PUSHROD TUBE SEALS

These seals from Real Gasket Tennessee provide 37% more sealing area at the point of contact with the pushrod tube, and vector spring pressure by its beveled top and companion washer. FAA Approved for the Continental engines shown below.

| Part No. | Application | Kit Price |
|------------|----------------------------------|-----------|
| RG-360PR | IO/TIO-360 complete engine* | |
| RG-360PR-1 | IO/TIO-360 single cylinder** | |
| RG-520PR | O/IO-470, IO-520, IO-550A,B,C*** | |
| RG-520PR-1 | As above except single cylinder | |
| RG-550GPR | IO-550-G complete engine | |

*6 cylinder kit **1 cylinder kit ***3 cylinder kit

REAL GASKET PUSHROD TUBE CONVERSION KITS FOR CONTINENTALS

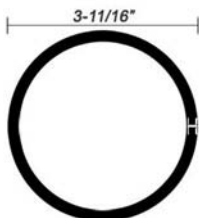
These kits from Real Gasket Tennessee replace problematic pushrod tubes of continental engine models: A-65, A-75, C-75/85/90/125/145, O-200, O-300 and GO-300. The installation does not require loosening or removal of the cylinder and converts it to an "independently serviceable" spring loaded pushrod tube system, similar to IO-470, IO-520, and IO-550 continental engines. It also allows access and service to the lifters. The kit is designed for easy installation and uses real gasket's FAA-PMA pushrod tube seals as used in the continental IO-470, IO-520 and IO-550 engines. For certified aircraft engines, form 337 is required.

1-cylinder kit P/N 08-00802
 4-cylinder kit P/N 08-04444
 6-cylinder kit P/N 08-44444

REAL GASKET FRANKLIN ENG. PARTS

RG-17794-S/12 ... Pushrod Tube Seal P/N 08-00779
 RG-17864-S/12 ... Pushrod Tube Seal P/N 08-00780
 RG-10366 Oil Pan Gasket P/N 08-00781
 RG-17794-S/12 ... Valve Cover Gasket P/N 08-00782
 RG-17794-S/12 ... Crankcase Cover Gasket P/N 08-00783

FAA Approved



LW12681 LYCOMING MAGNETO GASKET

Lycoming Magneto Gasket model # LW12681. For Lycoming O320 all letter designations EXCEPT the "H" series.
 P/N 08-00285.....

PERMATEX HI-TEMPERATURE SEALANT

This quality sealant increases reliability of seals at high temperatures, cuts repair time, and reduces breakdowns. It seals flanges, threaded connections and fasteners in high temperature applications up to 600°F. Also seals steam lines and exhaust manifolds on industrial engines. Applies easily.

7 oz. tube.....P/N 09-28425

PERMATEX FORM-A-GASKET NO. 1

Seals and repairs a wide range of gaskets. Fills in uneven flanges surfaces. Seals pipe fittings, air ducts, boilers, plumbing connections and threaded assemblies. Dries fast, sets hard for sealing permanent or rigid assemblies. Easy to apply. Improves gasket sealing power, adds reliability to rigid or permanent assemblies. Eliminates delays.

3 oz., Tube, #1B..... P/N 09-28415.....
 11 oz, Tube, #1C..... P/N 09-28430.....

PERMATEX FORM-A-GASKET NO. 2

A non-hardening, heavy-bodied, pliable sealant for semi-permanent assemblies. Use on threaded assemblies, over plates and hose connections, metal-to-metal applications. Temperature range -65° to 400° F., pressures up to 5000 PSI. Apply with putty knife or stiff bristle brush. Conforms to MIL-S-45180B Type II.

3 Oz. Tube #2B P/N 09-28420
 11Oz. Tube #2C P/N 09-28400.....

AVIATION FORM-A-GASKET NO. 3

A non-hardening sealant. Recommended for heating hose connections, close fitting metal parts and threaded connections. Resists water, gasoline, acids and alkalis. Temperature range -65° to 400°F., pressures to 5000 PSI. Conforms to MIL-S-45180B, Type III.

4 Oz. Can #3H P/N 09-28500.....
 1 Pint Can #3D P/N 09-28600.....

BENDIX MAGNETO GREASE



#10-27165 - Factory recommended lubricant for bearings in Bendix magnetos.
 1 Lb. Can..... P/N 10-27165

#10-391200 - Grease for AD Note on 1200 Series magnetos.
 1 Lb. Can..... P/N 10-391200
 1 oz. tube P/N 07-02500

#10-39140-0 - Distributor block bushing coating
 P/N 10-39140-0

#10-86527 - High temperature breaker/cam lubricant
 P/N 10-86527

GUNK SUPER CONCENTRATE DEGREASER



A concentrated self-emulsifying degreasing solvent for engine and parts. Dilute one part concentrate with nine parts of kerosine or light Diesel fuel oil for very effective cleaning. Spray or brush on. Does not harm electrical system, strip paint or cause rust. Water rinse.

SC-2A, Qt. (2 Lbs.) P/N 09-29400
 SC-3, Gal. (8 Lbs.) P/N 09-29500
 SC-5, 5 Gal. Pail (41Lbs.) P/N 09-29600.....



GUNK "ENGINE BRITE" ENGINE CLEANER

Ready-to-use engine cleaner in convenient aerosol or squirt can.
 EB-1, 16 Oz. Aerosol.....P/N 09-29700.....

GUNK HYDRO-SEAL



Two-layer room temperature carbon digester and paint stripper. No flash point. Safe on all metals. Simply soak and pressure rinse or solvent rinse. 5 gal. pail contains parts soaking basket.



HS-3, 1 Gal. Can (11 Lbs.).....P/N 09-29900.....
 HS-5K, 5 Gal. Pail w/ parts basket (Wt. 56 lbs., truck shipment req'd) P/N 09-30000
Factory-direct shipment on 50 gal. drums of Gunk and Hydro-seal. F.O.B. Charlotte, N.C.



TITSEAL

Prevents corrosion and seizing of metal parts. Assures leakproof, pressure tight connections. Unaffected by water, oil, gasoline.

Light Wt., #T20-66, 1 Lb. Can P/N T20-66
 Medium Wt., #T25-66, 1 Lb. Can P/N T25-66



MARVEL MYSTERY OIL

Standard for break-in on new or overhauled engines and for carbon removal from cylinder heads, piston rings, valves, etc. Mix with regular oil for perfect engine operation to -20°F. Lubricates tight nuts, control hinges and landing gear. Dust repellent.

4 oz. #012..... P/N 09-27515
 Qt. #013..... P/N 09-27500
 Gal. #014 P/N 09-27600



MOUSE MILK OIL

For speedy help in removal of rusted or frozen studs, nut and bolts; frees up cables, slides and linkage; unequalled wherever a lubricant and penetrant are required. Lasting lubricating qualities.

8 Oz..... P/N 09-39608.....
 32 Oz..... P/N 09-39632.....

EP

ENGINE PREHEATERS

RED DRAGON ENGINE PREHEATERS



For quick engine starts in cold weather. Propane heated air is blown directly into engine compartment by a 12V fan (can be used to heat cabin, thaw ice or warm hanger). 12V comes from either plane or car battery with no appreciable electrical drain. Easy-to-operate electric igniter allows you to ignite heater with a push of a button. Entire unit weighs only 14 lbs. 100% safety control stops fuel flow should flame go out. Complete with 5ft. of pressure propane hose, excess flow valve, regulator, safety control and 10ft. power cord with alligator clips to attach to battery. All UL approved. Now includes high limit safety control package - provides total protection from over-heat situations and will effectively shut down fuel upon an over-heat situation. Use standard propane bottles.

- MODEL MH300** - This model is the same as MH-300 except it uses 115 VAC to power the fan. Wt: 17lbs. P/N 08-04300
- MODEL MH310** - This model is the same as MH-300 except it uses 115 VAC to power the fan. Wt: 17lbs. P/N 08-04305
- MODEL H175** - This Red Dragon preheater is a cart style self contained preheater. Includes preheater, cart, battery box, fuel cylinder, and ducting. Excellent for FBO's. Wt: 58lbs. P/N 08-04315

RED DRAGON ACCESSORIES

- Heat Ducting** - 12' long x 4" diameter; Heavy-Duty Flexible Ducting. P/N 08-04310
- 6"Lx4" Dia. Heavy-Duty Flexible Ducting. P/N 08-04325
- Carrying Case - Strong Plastic Case w/lock, for model MH300. size: 20.25" x 9.5" x 9.5" P/N 08-04320
- 12V Cigarette Lighter Adapter Plug** P/N 08-04330
- Propane Quick Disconnect set - For Rapid Connect & Disconnect of Fuel Line from Propane Bottle w/o Tools (even under pressure) P/N 08-04340
- Propane Bottle - Std. Refillable Bottle (5 Gal. Cap. or 20 Lbs.) Supplies Minimum of 2 Hours of Heating. (Empty) P/N 08-04351
- Soft Carrying Case - This soft carrying case is for 115V preheaters only. P/N 08-01218
- Red Dragon Disposable Cylinder Adapter - Has a shut off valve and is disposable usually for 1 preheat. P/N 08-01295

DESIGN LOGIC ENGINE PREHEATERS



Constructed of solid aluminum, known for their dependability, performance, and overall value. An improved design saves time and money by allowing easy transfer to other engines or reinstallation after overhaul. Ea. 08-04425 kit includes 2 adapter plates, 1 flat and 1 curved (curve fits Continental sumps). The applicable adapter plate is simply screwed to the heater plate. This assembly is then adhered to the engine sump with thermally conductive adhesive (included). When necessary to remove the preheater, simply remove 4 screws! Specifications: 330W (08-00425) or 220W (08-00372). Thermostatically controlled 170°-200°F. Thermal fuse to prevent overheating should thermostat fail and heater become dislodged. FAA/PMA approved for over 600 engines. 2-yr, no hassle warranty. Application: Continental (except kidney shaped) 5"x4-3/8"x7/8".

- 08-04425 P/N 08-04430
- Application: Lycoming (except as below), Continental (except kidney shaped), Franklin, Garrett, & Marathon. 2-yr. warranty. Size: 5"x 4-3/8"x 5/8" (7/8" w/curved plate) P/N 08-04425
- Application: Lycoming IOs w/air intake on bottom (IO 360A1A, for example); for engines where a smaller footprint required; typically mounts on side of sump. 2-yr warranty. Size: 5"x 2-7/8"x 5/8" P/N 08-00372

Replacement Parts

- Continental Adapter Plate 08-01092
- Replacement Adhesive 08-01054
- Replacement Adhesive Kit (includes Applicator, Tie wraps, and Safety Wire) 08-01055

KENNON INSULATED ENGINE BLANKETS



Kennon's insulated engine covers are custom made for the specific year, make and model of aircraft for a snug fit. Kennon makes its own engine blanket material using a bonded fiberfill that doesn't need to be quilted to stay in place, which can destroy the loft and put thousands of needle holes in the cover where heat can escape. The outer shell is made from red, blue, or black polyester rather than nylon, increasing the useful life of the cover and the inner layer is fluorescent orange which can be used as a signaling device in the event of an emergency. Flaps for oil doors to check or fill the oil and cowling inlet flaps for preheating purposes can be added for \$10 each. Insulated prop and spinner covers are also available.

- 2-Seat A/C (sml) . 07-00983..... 4-6 seat A/C (reg.) . 07-00984
- Twin Eng. A/C ... 07-00985..... Spinner Cover . 07-00987
- Prop Cover 07-00988..... Cessna 207 07-01307
- Cessna 208 07-00991..... Piper Malibu 07-00992
- Dehavilland Beaver.. 07-00993..... Beech B18..... 07-00994

E-Z HEAT AIRCRAFT ENGINE PREHEATER



Preheating engines for winter operations is at best a miserable chore and at worst can be a disaster for the plane, the pilot & flight operations. E-Z Heat Preheaters feature easy peel & stick application. 7 models are available. Efficient engine heating for virtually all propeller driven aircraft. The heaters consist of a flexible synthetic pad that easily conforms to the contours of the oil pan. Heat 12 qts of oil from -40° to +60°F in an hour while using approximately 300 watts of electricity. The heater is 1/32" thick. enable immediate heat transfer from heater to engine. The heaters are thermostatically controlled, so leaving them plugged in overnight means the plane will be ready to go in the morning. Pre-heating normally takes 3-5 hours for the entire engine to be nice and warm. The Lite Brite power cord is included on all 110V E-Z Heat pre-heaters. Molded into the male plug end is a newly designed light emitting diode (LED). This LED allows the operator to visually recognize if there is electrical power to the preheat system even from a distance. FAA Approved for certificated aircraft. 2 year "No hassle" warranty.

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| P/N | Application | Heater # | Price |
|------------|--|-----------------|-------|
| 07-00756 | Cont. A-65 to 0-200 (round) | 260 | . |
| 07-05315 | Cont. A-65 to 0-200 (rectangle) | 270 | . |
| 07-05100 | Cont. C-125 to 0-300, E-165 to E-225, IO-360 to T10-360 Lyc. 0-235, 0-290, 0-320* | 440 | . |
| 07-05200 | Cont. 0-470, IO-470, 0-520, IO-520 Lyc. 0-320*, 0-360, IO-360, 0-540, IO-540C, D, T10-540C | 441 | . |
| 07-01320 | Cont. O-470, IO-470, O-520, IO-520 | 470 | . |
| 07-05210 | Lyc. IO-360A & C Series | 442 | . |
| 07-05345 | Cont. 0-470, IO-470, 0-520, IO-520 IO-550 Lyc. 0-540, TIO-540 (except C), IO-720 | 411, 440 or 540 | . |
| 07-05200-2 | Model 441 - 220Volt | 441-2 | . |

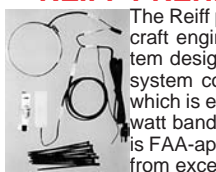
* Except H and Rear Carbs

REIFF HOTSTRIP OIL SUMP HEATERS



HotStrip is thin and lightweight like a silicone pad, but made of steel for maximum durability. Works either as a stand-alone sump heater or integrated with the Hot Band Cylinder Heating Systems. Bonds to the bottom or side of oil sump and electrically heats the oil. Features dual heating elements for redundancy. System includes two 100W elements thermostat, and power cord. FAA Approved Lycoming 0-235; All 290, 320, 360 series; All 435, 480, 540, 541 series; Continental IO-346; All 300, 600 series; E-165, E-185, E-225, All 470, 520, 550 series. P/N 08-00688

REIFF PREHEATER FOR ROTAX 912/914



The Reiff preheat system for Rotax 912 and Rotax 914 aircraft engines is an engine-mounted electric preheat system designed for easier cold-weather starts. The preheat system consists of a 100-watt metal "hot strip" element, which is epoxied to the bottom of the crankcase, and a 50-watt band heater that is clamped to the oil tank. The Reiff is FAA-approved, and includes a thermostat to keep the oil from exceeding 150° F. P/N 08-06219

SAFE-HEET ENGINE HEATERS



SAFE-HEET is a thin flexible pad that is bonded to the engine oil sump. The kit is complete with materials and step-by-step instructions. A log book entry is all that is required for permanent installation; No S.T.C. or 337 form required. There are no airframe modifications required. SAFE-HEET can be used with a timer or the 707 temperature controller, and uses standard 110 A.C. voltage. We recommend using the SAFE-HEET 707 Temperature Controller to cure the adhesive for faster installation.

- MODEL 700 Dimension: 4" x 4" P/N 05-04420
- MODEL 720 Dimension: 4" x 7" P/N 05-04421
- MODEL 705 Dimension: 7.3" x 3.5" P/N 05-04422

VARIABLE TEMPERATURE CONTROLLER - The SAFE-HEET Variable Temperature Controller can be used with any 700 Series SAFE-HEET Engine Pre-heater as an installation aid, or for providing temperature control for continuous pre-heat without promoting internal engine corrosion. P/N 05-04423

TANIS PRODUCTS - ENGINE PREHEATERS

TANIS AIRCRAFT PRODUCTS

TANIS PREHEATER FOR ROTAX ENGINES



Rotax 912 Engines - Preheat your Rotax 912 engine in cold weather for faster and safer starts. This system directly heats the cylinder heads, crankcase, and oil reservoir. The kit includes all heating elements, wiring harness with 120 volt power plug, instructions, and complete installation materials. Cylinders are heated with the exclusive Tanis heated bolts that take the place of the Allen head cap screws that secure the rocker covers.
PN 08-07084

TANIS PREHEATER FOR JABIRU ENGINES



Preheat your Jabiru engine in cold weather for faster and safer starts. This system directly heats the cylinder heads and oil sump. The kit includes all heating elements, wiring harness with 120 volt power plug, instructions, and complete installation materials. Cylinders are heated with elements that bond to the rocker covers. Available for four and six cylinder engines.
TAS100-33 (Jabiru 2200)
PN 08-07087

TAS100-31 (Jabiru 3300)
PN 08-07088

TANIS ENGINE PICKLE KITS



Recommended by engine manufacturers for long-term storage of piston engines. Each kit includes cylinder protectant spray, corrosion preventative oil additive, exhaust and intake desiccant bags, dehydrator plugs to replace spark plugs, complete instructions and service letters.
PKL-4 (for 4 cylinder engines)
PN 08-07085

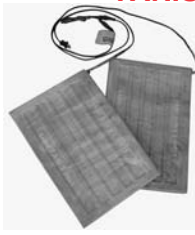
PKL-6 (for 6 cylinder engines)
PN 08-07086

TANIS COCKPIT PREHEATER



Heat the cockpit for comfort and the instruments for longer life with the Tanis ceramic heater. The ceramic heater produces 500 watts of heat in a triple-protected compact unit (5"x7.5"x1.5"). Temperature is controlled with a thermostat built into the 120 volt power cord. The ceramic heater has no glowing parts. PN 08-07091

TANIS HEATED FLOOR MATS



Preheat the cockpit of your aircraft with Tanis heated floor mats. Heated floor mats come in matched sets of two with a total heat output of 500 watts. They are interconnected with a harness and contain a thermostat in the power cord for temperature control. The mats can be integrated with the Tanis engine preheat system by connecting to the preheat harness. Or, they can be plugged into any 120Volt outlet. These durable floor mats can remain in the aircraft during flight and come in two sizes for the best fit in your aircraft.

12"x18" PN 08-07089

8.5"x32" PN 08-07090

AEROTHERM AIRCRAFT ENGINE HEATER - THE DEUCE



- * Industrial heater
- * No propane tank needed
- * Hot air is recirculated through engine compartment
- * Engine will heat completely (including oil) in 3 hrs at 0 degree hangar temperature
- * Hoses rated from -60 to 260 degrees
- * Thermostat to shut off air at desired temperature
- * Portable and lightweight
- * 120V

PURCHASED BY NASA!

Aircraft owners have long been familiar with the AeroTherm Engine Pre-Heater, but now there's a new and improved model. It's the AeroTherm Deuce, doing double the work, it has double the airflow and heating power of the original model.

The AeroTherm makes it easy to keep your airplane's engine warm in the winter. Instead of blasting extreme heat into the engine compartment like some heaters, the AeroTherm evenly and consistently heats all parts of the engine using the same principal as your home furnace.

Rather than using propane (and the accompanying tanks to be hauled around and refilled), The Deuce uses two 800 watt heating elements. It's easy-to-set thermostat maintains the desired temperature automatically. The Deuce can be kept plugged in all winter, keeping the engine warm, or it can be used as a traditional preheater. The Deuce consists of very durable components; a 40,000-hour high output CFM fan from Germany, a 100,000-cycle thermostat and a back-up reset thermostat. All components are modular and easy to replace.

When it's plugged in, the AeroTherm Deuce supplies 6500 BTUs of heat at 210°F to the engine compartment. It then draws the same heat out of the compartment and back through the heater, until the desired temperature is reached.

When used as a preheater, the engine will be warm enough to start in about 90 minutes. Or, it will heat completely (including oil) in three hours at 0°F outside temperature.

Weighing just 11 lbs., the AeroTherm Deuce comes with two hoses, a nylon suspension band that allows the unit to hang from the prop of your aircraft, carrying tubes and four sponges to seal the engine intakes. It's portable enough to take with you.

P/N 13-06101

TEMPEST AA1000 ENGINE PRESERVATION SYSTEM



Protect Your Engine With the Tempest EPS.

All engines accumulate moisture when they are not run everyday. Moisture will oxidize and create rust in the engine causing potential damage as well as faulty oil analysis.

AA1000 EPS pumps dry air into the engine oil filler cap and removes the moisture already in the engine. Continuous operation

will prevent any additional moisture from accumulating. Removal of the moisture preserves and protects your engine.

P/N 08-07062

ACCESSORIES

Replacement Desiccant for AA1000 EPS (1 lb)
P/N 07-03400

Replacement Desiccant for AA1000 EPS (1/4 lb)
P/N 07-00731



OIL FILTERS – OIL SYSTEMS

KELLY AEROSPACE AVIATION OIL FILTERS



- Better Fit! Better Filtration!**
- Shorter height than the leading competitor for easier installations.
 - Improved synthetic / cellulose blended media that exceeds SAE ARP1400B filtration requirements.
 - Silicone impregnated gasket for easier removal.
 - Manufactured and Independent lab tested to meet or exceed Industry standards.
 - Improved weld on hex nut
 - Meets TCM By-Pass Valve opening pressure specs.
 - Anti-Drainback valve on ES48108-1 & ES48109-1 models.

Save 10% when buying six or more of the same filter.

| Kelly P/N | Part P/N | Engine Model | Price | 4 Pack | Price |
|------------------|----------|---|-------|----------|-------|
| ES48103-1 Short | 08-00968 | O-320, IO-320, O-360, IO-360, LO-360, TO-360, HIO-360, LTO-360, LHIO-360 Series | . | 08-07065 | . |
| ES48104-1 Long | 08-00969 | O-320, IO-320, O-360, IO-360, LO-360, TO-360, HIO-360, LTO-360, LHIO-360 Series, 6-285, IO-346, IO-360, TSIO-360, LTSIO-360 | . | 08-07066 | . |
| ES48108-1 Short | 08-00970 | O-470, IO-470, LIO-470, TSIO-470, IO-520, TSIO-520, GTSIO-520, LTSIO-520, IO-550 Series, 6-285, IO-346, IO-360, TSIO-360, LTSIO-360 | . | 08-07067 | . |
| ES48109-1 Long | 08-00971 | O-470, IO-470, LIO-470, TSIO-470, IO-520, TSIO-520, GTSIO-520, LTSIO-520, IO-550 Series, O-235, IO-320 Series LIO-320, AIO-320, AEIO-320 | . | 08-07068 | . |
| ES48110-1 Short | 08-00972 | O-360, IO-360, AIO-360, HIO-360, LIO-360, TIO-360, LHIO-360, AEIO-360, O-540, IO-540, HIO-540, TIO-540, AEIO-540, LTI-540, TIO-541, IO-580, IO-720 Series | . | 08-07069 | . |
| ES48111-1 Long | 08-00973 | O-360, IO-360, AIO-360, HIO-360, LIO-360, TIO-360, LHIO-360, AEIO-360, O-540, IO-540, HIO-540, TIO-540, AEIO-540, LTI-540, TIO-541, IO-580, IO-720 Series | . | 08-07070 | . |
| Mechanics 4-Pack | 08-07160 | Includes 2 ES48108-1 & 2 ES48110-1 | . | --- | . |

CHAMPION SPIN-ON OIL FILTERS

| Filter P/N | Aircraft Model | Filter P/N |
|------------|--|------------|
| CH48110-1 | Beech E33, F33, A35 thru S35 | CH481109-1 |
| CH48111-1 | Cessna 120, 140, 170, 172, 180, 182, 185, 205, 210, 310 | CH481110-1 |
| | Mooney M20, M22 | CH481110-1 |
| | Piper PA-18, PA-22, PA-23, PA-24, PA-25, PA-28, PA-30, PA-31, PA-34, PA-60 | CH481110-1 |

| Filter P/N | Price | 12 Pack | Price | Filter P/N | Price | 12 Pack | Price |
|------------|-------|-------------|-------|------------|-------|-------------|-------|
| CH48103-1 | . | 08-00905-12 | . | CH48110-1 | . | 08-00909-12 | . |
| CH48104-1 | . | 08-00906-12 | . | CH48111-1 | . | 08-00910-12 | . |
| CH48108-1 | . | 08-00907-12 | . | CFO-100-1 | . | ---- | ---- |
| CH48109-1 | . | 08-00908-12 | . | | | | |



FM ENGINE MOUNTED OIL FILTER ADAPTER

FM engine mounted oil filter adapters eliminate the need for oil screens and provide increased filtering capabilities for longer engine life. Being engine mounted with no external lines, they reduce mess during oil changes and increase the time between oil changes. Includes adapter, filter, gaskets and STC. (CO-300 Pictured)

| FM Model | Aircraft Application | Engine Application | Part No. | Price |
|------------|--|---|-----------|-------|
| T.A.F.-L | Cont. C-75-12 C-85-12 O-200 O-200A | Cessna 120, 140 150, Aero-coupe, Luscombe 8E Piper PA-11, J3, J5 | 08-00631 | . |
| CO-300 | Cont. C-125, C-145, CO-300 | Cessna 170, 172, Globe Swift, Maule | 08-00632 | . |
| C6LC-S | Cont. O-470, Cont. IO-520 | Bellanca Viking, Cessna 182, 55 series Beech Baron | 08-00633* | . |
| C6LC-L | Cont. O-470 IO-470, IO-520 | Cessna 205, 206, 207, 210, 310, Beech Bonanza & Debonair, Navion, Meyers, Twin Commander, Widgeon | 08-00634 | . |
| C6SC | Cont. IO-360 | Maule, Cessna 172 Hawk XP, Cessna 337, Cessna 336, Cessna O-2, Mooney M20-K, Piper Turbo Arrow II & IV, Piper Seneca II, PA-34-200T, Cessna 175 | 08-01038 | . |
| C6LC-11/15 | Cont. O-470-11, Cont. O-470-15 | Cessna L-19 "Bird dog" | 08-01037 | . |
| KS 5639 | | Filter Torque Wrench | 12-00758 | . |

* WILL NOT FIT AIRCRAFT WITH FLOATS



ROTAX OIL FILTER 825-701

825-701 (825-703) Oil Filter - Rotax 912. Original factory replacement filter.

P/N 08-06100

TEMPEST OIL FILTERS



Proven full size design, in use for 30 years! Leaf spring technology for lateral stability of filter pack. Powder coated finish for durability. Available in six packs.
* Full Can Thickness: .019" * Base Plate Thickness: .187" * Burst Pressure: 700 psi * Media Size: 311 sq. in. * Bypass Relief Valve TCM specs: 12-14 psi

| Filter No. | Our Part No. | Price |
|------------|--------------|-------|
| AA48103 | 08-01266 | . |
| AA48104 | 08-01267 | . |
| AA48108 | 08-01268 | . |
| AA48109 | 08-01269 | . |
| AA48110 | 08-01270 | . |
| AA48111 | 08-01271 | . |

SPIN-ON OIL FILTER - SIX PACK

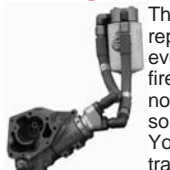
| Part No. | Tempest | Price | Part No. | Tempest | Price |
|----------|-------------|-------|----------|-------------|-------|
| 08-04969 | AA48103-6PK | . | 08-04972 | AA48109-6PK | . |
| 08-04970 | AA48104-6PK | . | 08-04973 | AA48110-6PK | . |
| 08-04971 | AA48108-6PK | . | 08-04974 | AA48111-6PK | . |

TEMPEST AA472 OIL FILTER TORQUE WRENCH



The Tempest AA472 oil filter torque wrench is a great addition to any toolbox. Its 1" hex allows easy installation or removal of all oil filters. The torque wrench also comes present to 17 foot pounds and is easily recalibrated. P/N 08-07023

AIRWOLF REMOTE MOUNTED OIL FILTER KITS



The remote mount oil filter kit by Airwolf Filter Corp. replaces the Lycoming oil screen and housing allowing every aircraft to have an oil filter and to locate it on the firewall where its easy to get to. The adapter takes up no more space on the engine than the original part, so even the tightest installations can benefit from it. Your Vernatherm and oil temp bulb are reused and transferred directly to our adapter, everything else is included. Universal STC'd kit fits any Lycoming powered Single/Multi engine airplane less than 450hp. All other STC'd for specific aircraft. Hoses not included unless where indicated..

Perfect for Tight Installations in:

- * Avion * Aeronca * Bellanca * Beech * Cessna * Cozy MK-IV
- * Glasair * Grumman * Lancair * Long EZ * Maule * Mooney
- * Piper * Pitts * RV * Skybolt * T-18 * Vari-EZ
- * Velocity

Fits Lycoming Series Engines: 0-235, 290, 320, 340, 360, & 540

- * Easy To Install * Extends Engine Cooling * FAA/PMA Approved
- * Full Flow * Total Weight under 4 Lbs * Change oil in minutes not hours.

| Application | Part No. | Price |
|--|-----------|-------|
| Lycoming Filter Relocation Kit - Requires existing Lycoming 77852 Spin-on adapter. Application does not include helicopters. | 08-00038 | . |
| STC'd Pratt & Whitney R985 Kit | 08-00039 | . |
| P&W R985 Kit, Stearman | 08-00995 | . |
| P&W R1340 Kit, T-6/Harvard | 08-00996 | . |
| AFC-K015-D P&W R1830 Kit, DC-3/C-47 | 08-00997 | . |
| AFC-K015-E R985 Kit, Beach-18, Staggerwing, DGA-15 | 08-00998 | . |
| P&W R1340 Kit, Otter | 08-00999 | . |
| AFC-K015-G P&W R985/1340 Kit, AG-Cat | 08-01001 | . |
| AFC-K015-H P&W R1340 Kit, AT301/401/501 | 08-01002 | . |
| R1340 Kit, Thrush/S2D (Snow) | 08-01003 | . |
| AFC-K015-L P&W R985 Kit, | 08-01004 | . |
| Lycoming Homebuilt Kit | 08-05605 | . |
| STCD Husky Kit AFC-K005 | 08-05635 | . |
| STCD Super Cub Kit AFC-K006 | 08-05630 | . |
| STCD Universal Lycoming Kit | 08-05660 | . |
| STCD Lycoming Kit-Fits all with Single Drive, Dual Magneto Engines. | 08-05665 | . |
| STCD Lycoming Kit - Fits All IO-720 Engines | 08-05670 | . |
| STCD Universal Continental Kit - Fits A50, A65, A75, A80, C75, C85, C90, C125, O-200, & IO-240 Engines. | 08-05675 | . |
| STCD Continental Kit-Fits C145, O300, G0300, & IO360A, C, D, G, H, J, K | 08-05680 | . |
| STCD Continental Kit (O470, IO470, IO520, TSIO520, GT, IO520, & IO550 Engines) | 08-05685 | . |
| STCD Continental Kit (O470-11 & -15 Military Engines used on T34 & Cessna 305 Birddogs.) | 08-05690 | . |
| STCD Continental Kit - Fits E-165, E-185, E-205, E-225 | 08-05700 | . |
| STCD Continental Kit (TIO360, IO520BA, C, M, TSIO520 B, D, E, J, K, L, N, U, BE, VB, WB & IO550B, C Engines) | 08-05800 | . |
| STCD Continental Kit - Fits W-670 Radials (Stearman) | 08-05805 | . |
| STCD Continental Kit - Fits W-670 Radials (Waco) | 08-05810 | . |
| STCD Franklin Oil Filter Kit | 08-05815 | . |
| Replacement Filter Standard Length (Champion oil filter) | CH48108-1 | . |
| Replacement Filter Long (Champion oil filter) | CH48109 | . |

OIL FILTERS ADAPTERS — OIL DRAIN VALVES

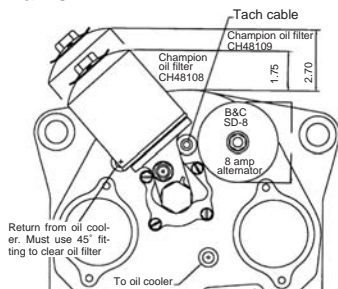


K&N OIL FILTERS

K&N powersports oil filters are 'TUV' product endorsed and 'TUV' factory production monitored. This means every K&N oil filter is equal to or will exceed all OEM specifications. Our filters contain a modern synthetic filter media, designed for ultimate flow with less pressure drop, yet engineered for outstanding filtration to meet or exceed all OEM specifications.

All K&N powersports 'spin-on' oil filters feature a heavy-duty metal can with a 17mm nut affixed onto the end that allows for easy installation and removal. The 17mm nut is cross-drilled so racers can safely wire the filter to their bike.

K&N OIL FILTER KN-141 P/N 08-06231
K&N OIL FILTER KN-142 P/N 08-00691



B&C MODEL BC700 LYCOMING OIL FILTER ADAPTER

This 90°, spin on oil filter adapter is FAA approved for replacement of existing oil pressure oil screens or spin-on filter adapters on Lycoming O-235; O, IO, LIO, AIO, AEIO-320; O, IO, LIO, HO, HIO, TIO, AEIO-360; O, IO, HIO, TIO, LTI, AEIO-540 & IO-720 series engines. It is CNC milled from solid aluminum billet and fits

perfectly without interference with the magnetos, vacuum pump, or the mechanical tach drive. Adapter kit comes complete with new gasket, new aluminum washer for the vernatherm, new copper gasket for the oil temperature sensor, sealant for the gaskets, & new Lycoming bolts for mounting the adapter. Wt: 4lbs. Uses CH48108 or CH48109 filters.

Adapter Kit w/ STC (for certified A/C) P/N 08-00195.....

Adapter Kit w/o STC (for homebuilt A/C) P/N 08-00196.....

Required Items:

B&C Oil Temp Probe Adapter P/N 08-07092.....

B&C Vern-a-therm Opening Plug P/N 08-07093.....

CESSNA / CONTINENTAL OIL FILTER ADAPTER KITS

| Part No. | Aircraft Application | Price |
|-------------|---------------------------------|-------|
| 0450404-202 | C150, A150, F150, FA150, FRA150 | . |
| 0556010-200 | C172, F172 | . |
| 1250922-201 | C180, C185, C188, T188 | . |
| 1250922-200 | C205, C206, U206, P206, 207 | . |

All the Continental spin on adapter kits above require the following items in addition to the adapter: Oil Filter P/N CH48110

Nut P/N 1250405-1

AN123883 O-Ring . P/N 08-04930

LYCOMING SPIN-ON FILTER ADAPTER KITS

| Part No. | Aircraft Application | Price |
|----------|---|-------|
| LW-13743 | All Applicable Engines Except Models Shown In Table Below | . |
| LW-13744 | O-235 Series | . |
| LW-13745 | IO-720 with 1200 Series Series Magnetos | . |
| 08-00513 | O-320-H (LW-14969) | . |
| LW-13904 | All Engines with Dual Magnetos. Includes Converter Plate Assembly and Does Not Include Filter | . |

All Lycoming spin on oil filter adapter kits above include adapter, oil filter assembly, adapter plate, gaskets, & attaching hardware. LW-14969 kit also contains oil cooler bypass valve assembly, 2 elbows, & 2 oil seals for oil cooler installations.

LYCOMING 90° OIL FILTER HOUSING



Designed to provide sport plane builders and owners several improvements over the standard Lycoming oil screen or filter hardware. This device locates the filter in the vertical plane for two unique advantages.

1) The filter is now in "free" space, permitting installation with tight engine to firewall clearance (that would otherwise be limited to an oil screen). 2) The filter is easily accessible without contortions or broken knuckles. 3) When it is time for filter changes . . . a prick punch in the top of the filter allows oil to drain back to the sump such that none is spilled during removal. No accessory case, lower cowl, or nose gear cleanup is required after filter removal.

Kits Include: * Housing * Filter * O-Ring and Washer

CH48109-1 filter P/N 08-00977

Experimental Adapter plus CH48108-1 filter P/N 08-00976

Experimental Adapter only P/N 08-00975

STC'd Adapter plus CH48109-1 filter P/N 08-01237

STC'd Adapter plus CH48108-1 filter P/N 08-01236

STC'd Adapter only P/N 08-01094

AEROQUIP E-Z OIL DRAIN SUMP VALVES



Makes aircraft oil changes easy. The hand actuated valve when attached to the oil drain port permits engine oil changes from the ground without removing the engine cowling. The spring loaded E-Z Drain valve cannot be accidentally opened.

Actuation of the valve requires a combination push/twist motion. It also contains a dual seal arrangement which combines both an O-ring & metal-to-metal seal to prevent accidental leakage of oil through the valve. FAA Approved for use on the engines listed. Incorporates fine Aeroquip quality hose. Installation eligibility listing furnished with each unit.

| Part No. | Engine Application | Thread | Price |
|----------|---|--------|-------|
| AE99950G | Cont. C-90, O-200, GO-300, IO-360 TSIO-360, O-470, IO-470 TSIO-470, IO-520, TSIO-520, GTSIO-520 | 5/8-18 | . |
| AE80666H | Cont. O-300, late C-145 | 1-18 | . |
| AE80664H | Lycoming Engines | 1/2NPT | . |

Valve O-Ring, All Models MS28775-011 Ea.

Interchange O-Ring AE99950G MS28775-113 Ea.

AE805555H MS28775-118 Ea.

Not to be used on Piper Models PA-28R-200, PA-28R-201, PA-28RT-200.

SAF-AIR OIL DRAIN SUMP VALVES



Changing engine oil has never been easier. With the Saf-Air Oil Drain Valve, no wrench is needed to remove the drain plug. A simple push and turn of the Saf-Air valve locks it in the open position. The valves are made completely from aluminum & stainless steel parts. FAA & PMA APPROVED

| Part No. | Engine Application | Thread | Price |
|----------|-----------------------------------|-------------|-------|
| S6250 | Cont. (same as Aeroquip AE99950G) | 5/8-18 | . |
| S1000 | Cont. (same as Aeroquip AE80666H) | 1-18 | . |
| P5000 | LYC (same as Aeroquip AE80664H) | 1/2NPT | . |
| M12175 | ROTAX 912, 914 | 12mm x 1.75 | . |
| S7516 | Cont IO-520-E | 3/4"-16 | . |
| P7500 | Franklin Engines | 3/4" NPT | . |
| S5020J | Jabiru 2200 / 3300 | 1/2"-20 | . |
| M20150 | Subaru 2.2L / 2.5L | 20-1.50mm | . |

F62

SAF-AIR LOW PROFILE

2-PIECE OIL DRAIN SUMP VALVES



Perfect for a close clearance engine oil drain application such as on the Piper Arrow. These low profile oil drain valves are designed to clear retractable landing gears & other restrictions. The valve is very affordable and can be rebuilt. It is a simple procedure to sample or drain hot oil. The valve is made from 360 brass & 302 stainless steel. FAA & PMA APPROVED.

| Mfg. No. | Part No. | Engine Application | Thread | Price |
|----------|----------|--------------------|------------|-------|
| F62 | 05-00981 | Continental | 5/8-18 | . |
| F10 | 05-00982 | Pratt & Whitney | 1-18 | . |
| F50 | 05-00983 | Lycoming | 1/2-18 NPT | . |

LOW PROFILE OIL DRAIN VALVE FOR LANCAIR



This is exactly what Lancair IV owners have needed for their continental engine! Forget the huge mess when changing oil! Engineered to fit and will not interfere with the retracted nose strut! Finally, makes oil changing simple and easy in your Lancair IV! Fits any 5/8"-18 thread drain plug. Brass and steel construction; yellow zinc plated dust cover provides protection between changes. Drains via hose directly into container. P/N 08-01298

SAF-AIR OIL DRAIN VALVES



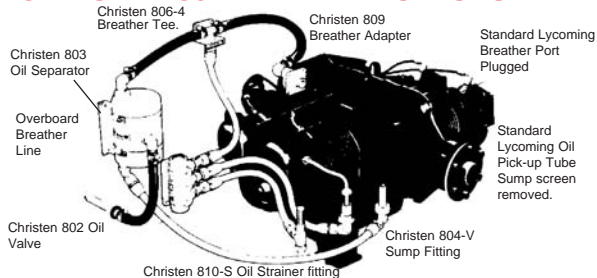
Changing hot engine oil has never been easier! With the SAF-AIR oil drain valve, no wrench is needed to remove the drain plug. A simple push and turn of the SAF-AIR valve locks it in the open position. The valve is made completely from anodized aluminum and stainless steel components. These materials are used throughout the aircraft industry due to their strength and durability. FAA & PMA APPROVED.

| Description | Part No. | Price | Description | Part No. | Price |
|-------------|----------|-------|-------------|----------|-------|
| S7516 | 05-00984 | . | S6250 | 06-00637 | . |
| P7500 | 05-00985 | . | S5020J | 05-00986 | . |
| P5000 | 07-00879 | . | M12175 | 07-00876 | . |
| M20150 | 05-00987 | . | S1000 | 07-00880 | . |

EP

OIL SYSTEMS

CHRISTEN 801 INVERTED OIL SYSTEM



This accessory kit for Lycoming engines provides normal engine lubrication with minimal oil loss during aerobatic flight. It functions as a self-contained extension of the normal engine oil and breather systems. Can be installed in a few hours without engine disassembly.

| Part No. | Description | Price |
|----------|---|-------|
| 801-4 | For four-cylinder engines. Includes 802 Oil Valve (with plug wrench and plugs for unused ports), 803 Oil Separator, 806-4 Breather Tee, and product manual which provides detailed instructions for application. Weight: 4.75 lb. installed. | . |
| 801-6 | For six-cylinder engines. Same as 801-4 Kit, but is supplied with 806-6 Breather Tee. Weight: 4.75 lb. installed. | . |
| 811-V | For vertical-screen sump engines. Includes 810-S Oil Strainer Fitting, 810-R Oil Return Fitting, 804-V Sump Fitting (vertical type) with crush gasket and MS20822-10D elbow. Weight: 0.50 lb. installed. | . |
| 811-A | For horizontal-screen sump engines. Includes 810-S Oil Strainer Fitting, 810-R Oil Return Fitting, 805 Sump Plug with insertion tool, 804-A Sump Fitting (angular 360° swivel-type) with crush gasket and wrench for swivel clamping screw. Weight: 0.36 lb. installed. | . |
| 811-S | For horizontal-screen sump engines. Includes 810-S Oil Strainer Fitting, 810-R Oil Return Fitting, 805 Sump Plug with insertion tool, 804-S Sump Fitting (straight-type) with crush gasket. Weight: 0.33 lb. installed. | . |
| 809-K | For engines with forward breather ports such as the O-235 and O-290 models. Includes 809 Breather Adapter with gasket, AN842-12D hose elbow, and MS20913-6D plug for forward breather port. Weight: 0.53 lb. installed. | . |
| 812-2 | For addition of oil ports to engine sumps. Includes two 812 Weld Bosses and quantity of 5% silicon-aluminum welding rod (type 4043). Weight: 0.12 lb. installed. | . |
| 812-1 | Same as 812-2 Kit, except with only one 812 Weld Boss for addition of single sump port. Weight: 0.06 lb. installed. | . |
| 813-4 | Stainless steel spring wire. Installed inside breather hose to permit relatively sharp bends without collapsing or kinking. 10 x 47/64". Weight: 0.12 lb. installed. | . |
| 813-6 | Stainless steel spring wire. Installed inside breather hose to permit relatively sharp bends without collapsing or kinking. 10 x 63/64". Weight: 0.12 lb. installed. | . |
| 807-4 | All hoses and fittings required for deluxe show-plane quality installation on four-cylinder engines. Includes Aeroquip braided stainless steel hose for oil lines, MIL-H-8000 rubber-fabric hose for breather lines, thin abrasive cut-off wheel for professional-quality hose cuts, AN and MS fittings (blue anodized), Aeroquip hose end fittings (blue and red anodized), and miniature stainless steel hose clamps. All materials are factory new; no surplus. Weight Excluding Hose: 1.53 lb. installed. | . |

10-page detailed manual - describes system operation & procedure for selecting proper components for each engine model.

P/N 05-20600 ea.

CHRISTEN OIL VALVE

Multiple port gravity operated ball valve. It is cast aluminum with textured white epoxy enamel finish and all internal steel parts are cadmium plated. Normally installed on firewall or on engine mount. Designed for fittings to be installed either at side or front or both. Requires 3 AN816-10D nipples for hose connection. Wt. 1.75 lbs. installed. P/N 08-06745

CHRISTEN OIL SEPARATOR

Features welded aluminum construction with a textured white epoxy enamel finish. All internal parts are cadmium plated, and unit includes stainless steel positioning clamps. Normally installed on fire wall or on engine mount. Requires 2 AN842-12D or -16D hose elbows and one AN823-10D hose fitting. Wt. 2.8 lbs. installed. Applicable to all Lycoming engine applications. Used to replace a worn out or broken oil separator on Christen 801-4 systems only. P/N 08-06740

AERO CONVERSIONS OIL SEPARATOR

The AeroConversions Oil Separator is a high-quality welded and powder-coated aluminum assembly designed to save oil vs. direct overboard crankcase breathers in normal flight operations. In addition, the AeroConversions Oil Separator features an extra-high-volume design offering enhanced inverted flight performance in entry-level aerobatic aircraft, allowing oil to be retained and returned to the engine during short-duration inverted and limited negative G maneuvers. The AeroConversions Oil Separator's angled design makes it a perfect fit for Sonex Aircraft angled firewalls, while retaining compatibility with traditional vertical firewall installations in other aircraft. The AeroConversions Oil Separator ships with comprehensive installation instructions suitable for a wide-range of engine installations. P/N 08-07107

RAVEN WELD BOSS KITS

These kits for sump mods come with fittings and welding rod. Aluminum Sumps (most 4 cyl) One boss... P/N 08-00789
Two boss... P/N 08-00790
Magnesium Sumps (most 6 cyl.) One boss... P/N 08-00791
Two boss... P/N 08-00792

RAVEN KNIFE EDGE MODIFICATION KITS

Horizontally mounted valve and fittings to reduce or eliminate knife edge oil pressure problems. Includes valve, specialized fittings, and one weld boss kit to add on to a regular inverted system (requires sump modification)
4cyl. kit..... P/N 08-00793.....
6 cyl. kit..... P/N 08-00794.....

ADC OIL FILTER SYSTEM



ADC Oil Filter System



ADC Remote Spin-On Kit

The ADC Oil Filter System has a cleanable element which provides remarkable filtering ability, additional oil cooling (15-20 degrees), visual bypass indicator light, outstanding engine diagnostic ability, and longer engine life. STC's and PMA's for all Lycoming and Continental engines, and most all aircraft. The Remote Spin-On Adapter Kit uses standard Champion CH48108 and CH48109 spin-on filters with the benefit of firewall or engine mount mounting for easy access for filter changes. This kit has a provision for the ADC optional chip detector, comes with lines and fittings, and is machined, rather than cast or welded. Anti-torque feature prevents firewall damage. STC's and PMA's for all Lycoming and Continental engines, and most all aircraft.

ADC Oil Filter System - Includes everything to install, including STC, installation instructions, filter element, all hardware, hoses, fittings, electrical components and engine adapter:

Lycoming Engines

O-235&O-290 engines w/standard screen housing. P/N 07-06930
All engines w/factory installed spin-on filter P/N 07-00225
320 series & up w/ standard screen housing.... P/N 07-06925

Continental Engines

All engines w/spin-ons or screen housing...P/N 07-00226

ADC Remote Spin-On Filter Kit - Includes STC, installation instructions, all hardware, hoses, fittings and engine adapter.

Lycoming Engines

O-235 & O-290 engines w/standard screen housing P/N 07-06933
All engines w/factory installed spin-on filter.... P/N 07-00227
320 series & up w/ standard screen housing ..P/N 07-06935

Continental Engines

All engines w/spin-ons or screen housing...P/N 07-00228

We stock ADC engine adapters for Lycoming & Continental engines. Call for information and pricing.

RAVEN BASIC INVERTED OIL SYSTEM

Raven systems consist of the valve with three pipe plugs, tank, mount, and clamps. The tank is constructed from aluminum and is tig welded using stainless steel internal parts prevent corrosion. Valve is machined from solid aluminum, and all parts are power coated black or white. Valve is 5-1/2" x 1-1/2" x 1-1/2" and weighs 1.85 lbs, 5" tank is for 4 or 6 cylinder applications, & 4" tank is for 4 cyl. applications only.

5" tank-black P/N 08-00796
5" tank-white P/N 08-00800
4" tank-black P/N 08-00797
4" tank-white P/N 08-00801

RAVEN INVERTED SYSTEM VAC ADAPTERS

These vac adapters are machined from solid aluminum with anodized finish. Furnished with a seal installed, and complete with AN fitting and gaskets.

Vac-6 for 6 cyl Lycomings..... P/N 08-00784.....
Vac-4 for 4 cyl Lycomings..... P/N 08-00785.....
Non-Acc'y Vac Pad Oil P/U P/N 08-00786.....

RAVEN SUMP FITTING KITS

These sump fitting kits come with specialized fittings, washers , O rings needed to install the kit.
Sump kit for Horizontal screen 4 or 6 cyl. Lyc. P/N 08-00787

Sump kit for Vertical screen 4 or 6 cyl. Lyc. ... P/N 08-00788

SLIME FIGHTER

For engines that have horizontal oil filters, this system will eliminate the problem of oil dripping down into the engine and on the firewall while the filter is being removed. A tray is supplied that catches the oil coming from the engine flange and filter while it is being unscrewed. The oil in the tray pours down a hose connected to the bottom of the tray. The filter can now be removed and thrown away. Includes the welded aluminum tray, oil filter wrench and hose. Full set of instructions included.....P/N 08-00974

OIL FILTER SYSTEMS

AIRWOLF AIR/OIL SEPARATOR



The Airwolf Air/Oil Separator will improve the efficiency of your aircraft dramatically whether it is a single engine fun craft or a twin powered corporate plane. Designed to separate air and oil in the crankcase breather & wet vacuum pump systems on conventional aircraft engines, Airwolf recovers oil from the crankcase, thus eliminating the oily overboard discharge and the ever present "oily belly" syndrome. Oil loss is greatly reduced - tests have indicated a recovery of up to 80% of crankcase oil previously wasted, depending on the type and condition of the engine. The Airwolf oil recovery system is only slightly larger than an oil filter cartridge (4" dia. x 7.5") and it is available for all conventional engines regardless of displacement. It can be easily

removed and disassembled for inspection and cleaning. With no moving parts, the Airwolf is designed to last the life of your engine. Available for planes with either wet or dry vacuum pump. Now STC'd for most aircraft. Available in black epoxy finish only. Specify aircraft model no., serial no., and engine model. Now manufactured by Airwolf.

| Airwolf | Application | P/N | Price |
|------------|---|----------|-------|
| AFC-W300-A | Beech H35, J35, K35, M35, N35, P35 (S/N D-4866 thru D-7309) Debonair 35-33, 35-A33, 35-B33, 35-C33 (S/N CD-2 thru CD-1118) | 08-00645 | . |
| AFC-W302-A | Cessna 180/182/185/A185 | 08-03806 | . |
| AFC-W304-A | Beech Bonanza (Pressure Gyro Systems Only) Beech V35B (S/N D-9787) Beech V35B (S/N D-9806 & after) Beech A36 (S/N E-716) Beech A36 (S/N E-732 & after) Beech F33 (S/N CE-602 & after) | 08-01299 | . |
| AFC-W307 | Bellanca Viking 17-30A | 08-01301 | . |
| AFC-W309-A | Beech (Vacuum Gyro Systems Only) Baron All 55 Series (with IO470) | 08-01302 | . |
| AFC-W311-A | Mooney M20 A/B/C/D/E/F/G/J | 08-01303 | . |
| AFC-W314-A | Piper PA24-250/260 Comanche | 08-03834 | . |
| AFC-W316-A | Cessna (Non Turbo Charged) P206A, B, C, D, E U206A, B, C, D, E, F, G 210L, M | 08-00652 | . |
| AFC-W318-A | Cessna (Turbo Charged) TP206A, B, C, D, E TU206A, B, C, D, E, F, G T210L, M | 08-01297 | . |
| AFC-W321-A | Cessna Skyhawk 1721, K, L, M (3/8" Rocker Box Drain Lines) | 08-00655 | . |
| AFC-W322 | Cessna Cardinal 177 Cessna Cardinal 177RG | 08-01304 | . |
| AFC-W323-A | Cessna Skylane RG 182 | 08-01306 | . |

CALL ON UNLISTED MODELS!

AIRWOLF MINI AIR/OIL SEPARATOR



Reduce oil consumption and remove harmful water vapor with Airwolf's Walker Air/Oil Separator. The AirSep distills and recirculates crankcase oil vapor generated by normal operation, extending engine life.

The Airwolf Walker AirSeps uses a tiny amount of vacuum pump discharge air, to help condense the oil inside the AirSep, and to overcome crankcase pressure to return collected oil to the engine while the engine is running. The competitive systems are only gravity flow so no oil returns into the engine until the engine is completely shut off. Thus, one system is large enough to clean both the engine breather oil and wet vacuum pumps discharge. It

comes with a lifetime warranty on workmanship and material of all new AirSeps produced. STC'd

Airwolf Mini Air/Oil Separator 08-05887



CHALLENGER FAA/PMA LIFETIME OIL FILTER SYSTEM

The challenger Lifetime Oil Filter System for piston engine aircraft, is the most technologically advanced oil filtration system in the last fifty years. Challenger's revolutionary technology oil filter assembly is machined from 6061-T6 aircraft billet aluminum. Inside the aluminum housing is a high flow, 22 micron, cleanable woven stainless steel filter element. Large inlet and outlet passages provide for a maximum oil flow rate of twenty two gallons per minute (22 GPM), double the flow of the largest "Throw-Away" oil filters. It's plain and simple, clean oil preserves piston engine components service life. You'll find that unscheduled removal of engine parts is a thing of the past, and parts that haven't reached their life limit can now be returned to service, saving a bundle on engine overhaul cost. Every year millions of throw-away oil filters and used oil is thrown into land fills. Challenger's cleanable oil

filter with up to 100 hours between oil changes will help reduce waste. One time Form 337 required for installation. Our cleanable oil and air filters are STC and PMA approved, therefore, a one time 337 is needed for installation.

| Challenger | Replaces | Our P/N | Engine Model | Price |
|---|-----------|----------|---|-------|
| CP-48103C 13/16-16 Thread w/o relief valve | CH48103-1 | 08-06017 | LYCOMING O-320, IO320, O360, IO-360, LO-360, TO-360, HIO-360, LTO-360, LHIO-360 SERIES | . |
| CP-48104C 13/16-16 Thread w/o relief valve | CH48104-1 | 08-06018 | | . |
| CP-48108C 3/4-16 Thread w/o relief valve | CH48108-1 | 08-06019 | CONTINENTAL 6-285, IO-346, IO-360, TSIO-360, O-470, IO-470, LIO-470, TSIO-470, IO-520, TSIO-520, GT- SIO-520, LTSIO-520, IO-550 SERIES | . |
| CP-48109C 3/4-16 Thread w/ relief valve | CH48109-1 | 08-06020 | | . |
| CP-48108C 3/4-16 Thread w/ Nipple w/o relief valve | CH48110-1 | 08-06021 | LYCOMING O-235, IO-320 SERIES LIO-320, AIO-3230, AEIO-320, O360, IO360, AIO-360, HIO-360, LIO-360, TIO-360, LHIO-360, AEIO-360, O-540, IO-540, HIO-540, TIO-540, AEIO-540, LTIO-540, TIO-541, IO-580, IO-720 SERIES | . |
| CP-48109C 3/4-16 Thread w/ nipple w/o relief valve | CH48111-1 | 08-06022 | | . |

CHALLENGER ACCESSORIES

| | | |
|----------------------|----------|---|
| Bonanza Gasket | 08-01041 | . |
| Gasket C140 150 152 | 08-01043 | . |
| Gasket C170 172 | 08-01044 | . |
| Gasket c180 182 185 | 08-01045 | . |
| Gasket PA28-151, 161 | 08-01046 | . |
| Gasket Mooney 20E, F | 08-01047 | . |
| Gasket Mooney M20J | 08-01048 | . |
| Gasket Oval | 08-01049 | . |
| Gasket Piper Round | 08-01050 | . |
| Gasket C177 Cardnal | 08-01264 | . |

EP

AIR OIL SEPARATORS

SLIME FIGHTER AIR-OIL SEPARATOR



Universal air-oil separator ideal for virtually any experimental aircraft. They are machined from aluminum stock and welded by a certified welder. Oil separation is provided by baffles attached on the inside. This is a one pipe system with no extra drain lines or hoses required.

Oil drains back immediately to the engine and warm air without oil goes out. No back pressure. The unit is the size of a salt shaker and weighs only ounces. Installation instructions and fittings included. Easy to install. Currently in use on over 100 RV aircraft.

P/N 08-00661

SUPER SLIME FIGHTER®



Following in the success of the Slime Fighter® series of air separators, Aircraft Spruce now offers the Super Slime Fighter with the same ease of installation for large Lycoming engines found in aircraft such as the RV-10, Glassair III and the F1 Rocket. Installs in 20 minutes with no additional drain line required. Instructions, clamps and hoses included.

RV-10 kit includes custom hose shape. Not FAA approved.

Standard Experimental..... P/N 08-06151.....
RV-10 Experimental P/N 08-06152.....

HOMEBUILDER'S OIL BREATHER/SEPARATOR



These 4 inch diameter reservoirs have beaded outlets for 5/8" I.D. hoses and a mounting flange for easy firewall attachment. These units are of a new, improved design and the reservoir body is now a spun aluminum bowl for optimum performance. The oil separators minimize oil loss and allow free breathing of the engine. They are recommended for experimental aircraft use only and are not STC'd for any certificated aircraft. Size: 4" dia. x 3-3/8" h.

P/N 10570.....

RMJ-AERO OIL SEPARATOR



Designed to remove oil from the engine crankcase breather line providing the builder with a cleaner plane, less oil consumption, and prolonged engine life from maximum cooking, cleaning, & lubrication. Fashioned after Tony Bingelis's proven design, these separators incorporate several enhancements, including O-ring seals for the lid.

Fabricated from aircraft quality materials, TIG welded, and alodined for corrosion control. They can be firewall or cooling baffle mounted with the cushion clamp provided. The design allows for easy installation in the breather line by the use of hose clamps. Oil from the separator is returned thru tubing to a port in your engine's housing. Should your engine not have an available oil return port, RMJ-Aero can provide a Self Sealing Clamp-On Adapter utilizing your engine's oil filler neck. Installation of this adapter is easy for both flying and aircraft under construction. When clamped in place around the filler neck, the adapter provides a return port for separated oil and an integral seal, which prevents leakage. Installation & maintenance guidelines are included.

| Description | Part No. | Price |
|--|----------|-------|
| Oil Separator for Lycoming (3/4" inlet/outlet) | 08-00571 | . |
| Oil Separator for Cont. (5/8" inlet/outlet) | 08-00572 | . |
| Adapter for Lycomings | 08-00577 | . |
| Adapter for Continentals | 08-00578 | . |

HOMEBUILDER'S ENGINE CRANK CASE OIL BREATHER



This is a 3-1/4" dia. can reservoir with a 3/4 od hose barb outlet, 1/8npt curtis drain valve on bottom of can, and a fire wall mounting bracket. Item also available with a 5/8 od hose barb outlet, please call or email for price & availability.

It keeps oil in can and off belly of airplane then can be drained later with petcock. Helps to keep crank case condensation to a minimum. Recommended for experimental aircraft use only not STC'd for certified aircraft. P/N 08-00765.....

AEROMAG



AeroMag is a powerful high-tech magnet assembly that fits around your oil filter to trap and hold steel particles against the inner wall of the filter canister. These are the particles that are missed by the standard aircraft filter. This results in fewer damaging wear particles recirculating in your oil, and prolonged engine life. Install is simple, and there are no moving parts. AeroMag fits all Lycoming & Continental engine filters. For experimental aircraft only (FAA approval pending).

P/N 08-01088.....
AeroMag for 3" Dia. Filters (Rotax)..... P/N 08-01235.....

M-20 AIR-OIL SEPARATOR



Model 300



Model 400

The M-20 Air/Oil Separators for crankcase breathers have set the performance standards for aviation. A simple performance test for any separator is to fill the engine oil to the full mark and take a 2 hour flight. Only with the M-20 will the oil still read full with none blown out on the belly. This difference makes them preferred over all others. Only the

M-20 Separators carry FAA approval for all 1600 makes and models of certified piston aircraft from 45 hp to 950 hp. They are also applicable to all homebuilts and foreign made aircraft with similar power.

No vacuum pump connection is used, since the addition of as little as 1/16 PSI will make a new engine perform like it is run-out. M-20's vent the crankcase pressure and use only gravity for returning the oil.

The -A and -B suffix varies only in the direction of the oil return tube. On the -A models the direction is away from the inlet, on the -B towards the inlet. The -A's generally favor Lycoming, Franklin and radials, the -B's favor Continentals. Either may be mounted in-line; the -B may also be firewall mounted since it has a blank side.

| Typical Airplane Models | Part No. | Price |
|---------------------------------|----------|-------|
| Model 300-A, 45 to 315 hp | 08-00182 | . |
| Model 300-B, 45 to 315 hp | 08-00409 | . |
| High Horsepower Airplane Models | Part No. | Price |
| Model 400XL-A, 315 to 950 hp | 08-00413 | . |
| Model 400XL-B, 315 to 950 hp | 08-00861 | . |
| Helicopter Models | Part No. | Price |
| Model 300H-A, 45 to 315 hp | 08-00411 | . |

MODEL 605Y "Y" FITTING

The oil returns of both the M-20 Breather separator and the Wet Pump Separator may be combined using the Model 605Y. This "Y" fitting has a venturi for scavenging the drop-by-drop return oil from the breather separator by the stream of oil from the wet pump separator.

P/N 08-00862.....



RAVEN AIR/OIL SEPERATOR

This oil/air separator, used in non aerobatic applications uses female threaded inserts so you can use any size of straight or angled fittings to custom fit your application. P/N 08-00798.....

ENGINE OIL CHIP DETECTION SYSTEM



The Chip Detector gives advance warning of possible excessive engine wear, which could prevent an impending failure. This early warning can also greatly reduce the cost of engine overhaul. Inexpensive and easy to install. It simply replaces the drain plug, and includes a warning light on the instrument panel which illuminates when metal chips bridge the gap in the magnetic probe, or when the press to test switch is activated. FAA approved (STC's) for all opposed Continental and Lycoming aircraft engines. Specify aircraft and engine make and model. Plus 14V or 28V. Available for installation in the oil filter or oil sump.

Single Engine Lyc. (Oil Filter)..... P/N 08-06762.....
Single Engine Lyc. (Oil Sump)..... P/N 08-06766.....
Single Engine Cont. (Oil Filter)..... P/N 08-06763.....
Single Engine Cont. (Oil Sump)..... P/N 08-06765.....

ANDAIR OIL/AIR SEPARATOR



Manufactured from aircraft grade materials and anodized for corrosion protection, this unit is extremely light weight and rugged. The OS8850 has been designed to remove the oil from the crankcase breather on Lycoming and Continental Engines. This gives reduced oil consumption, cleaner aircraft, and environment. The CS850 has some unique features that make it the best

on the market.

* Upper outlet can rotate through 360° allowing easy installation. * The unit can be dismantled for inspection/cleaning. * Vortex swirl separation. O-Ring seals. * Light weight: 6.4 oz. * 4 off 10-32 mounting lugs on the base of the separator for easy fire wall mounting.

P/N 08-01034.....

ANDAIR CONDENSATION TRAP



This new device is a small and very light weight condensation trap. It is used to extract the water from the oil when used in conjunction with the Andair Oil / Air Separator. Water can build up in the engine due to water in the air condensing during a cold night. Overnight this water sinks to the bottom of the sump settling at the lowest point. This is generally where the oil pump pick up is. Therefore there is a real potential that if one of these devices is not used water can build up in the engine. Flight test have shown that the worst possible condition for water in the oil is on humid days, cold nights and where short flights are undertaken..... P/N 08-01035.....

OIL COOLERS

STEWART WARNER OIL COOLERS

STEWART WARNER 8406R



Stewart Warner South Wind 8406R (formerly Harrison P/N 8526250). Applicable to all Lycoming installations from 4-cylinder O-235 through 6-cylinder IO-540 engines. Inlet & outlet ports accept 3/8" pipe fittings. Fits Beech B-19 Sport (O-320-E2C), C-23 Sundowner (O-360-A4G), Muskateer (O-360-A2G), Cessna 172 Skyhawk (O-320-E2D), 177 Cardinal (IO-360-AF6D), 177 Cardinal (O-0-360-A1FG), 177 Cardinal RG (O-360-AFGD), Mooney Ranger (O-360-A2D). Size: 7.75"l x 3.5"d x 4.75"h. Wt.: 4 lbs.
Model 8406R P/N 8406R

Model 8432R—Fits Beech A24R Sierra (IO-360-A2B), Mooney Chaparral (IO-360-A1A), Mooney Mark 22 (TIO-541-A1A). Weight 4 lbs. size: 5-3/4"Hx8"Wx3-5/8"L P/N 8432R

Model 10611R - Fits Piper Single Engines..... P/N 10611R

Model 10599R - Fits Cessna and Stoddard..... P/N 10599R

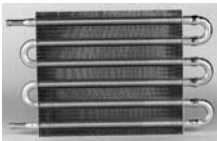
Model 10578R - Fits Gulfstream AA-1 P/N 10578R

Model 10610R - Fits Cessnas P/N 10610R

Model 10614R - Fits Piper, Cessna, Mooney .. P/N 10614R

Model 10568R - Fits Gulfstream AA5B, GA-7.. P/N 10568R

Note: The oil coolers manufactured by Stewart Warner will fit the aircraft listed but in most cases are not furnished with the FAA/PMA certification for those aircraft. The exceptions are P/N 8406R and P/N 8432R are furnished with FAA/PMA approval for certain Mooney aircraft. For all other applications, Form 337 field approvals are required for installation on certificated aircraft. Call for further information.



LIGHTWEIGHT OIL COOLER FOR HOMEBUILTS

Lightweight, compact oil cooler improves cooling in closely cowled homebuilts. Mounts in any position. Furnished with 4 ft. of 5/16" I.D. hose and 4 clamps. Size 7-1/2H x 12-3/4L x 3/4D. P/N 403



POSITECH OIL COOLERS

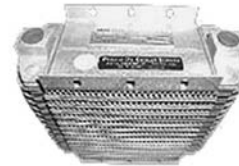
PosiTech factory new oil coolers are designed for use on experimental aircraft such as RV-4, 6, & 8, Glastar, Lancair, & Europa. Offered at exceptional savings compared to equivalent coolers. 2-yr/2000-hour warranty.

| Posi-Tech Part No. | No. of Oil Tubes | Overall (WxHxD) | PC No. | Applications | Our P/N | Price |
|--------------------|------------------|------------------------|--------|---------------|----------|-------|
| P10578C | 4 | 8"x 3.68"x 3.62" | 4213MN | O-200 | 08-01285 | . |
| P10568C | 5 | 8"x 4.17"x 3.62" | 4212MN | O-300 | 4212 | . |
| P20002C | 6 | 8"x 4.66"x 3.62" | 4211MN | O-360 | 4211 | . |
| P20003C | 7 | 8"x 5.15"x 3.62" | 4220MN | O-360 | 08-01286 | . |
| P20004C | 8 | 8"x 5.64"x 3.62" | 4215MN | IO-360 | 4215 | . |
| P20005C | 10 | 8"x 6.62"x 3.62" | 4216MN | IO-360 | 4216 | . |
| P20006C | 11 | 8"x 7.11"x 3.62" | 4219MN | IO-540 | 4219 | . |
| P20008C | 14 | 8"x 8.63"x 3.62" | 4221MN | IO-540, Heli. | 08-01287 | . |
| P10634C | 12 | 8"x 7.60"x 3.62" | 4222MN | IO-540 | 08-01288 | . |
| P20104C | 8 Two Pass | 8"x 5.64"x 3.62" | 4214MN | Variou | 4214 | . |
| P10641C | 9 Two Pass | 8"x 6.13"x 3.62" | 4217MN | Various | 08-01289 | . |
| P10631C | 11 Two Pass | 8"x 7.11"x 3.62" | 4218MN | Various | 08-01290 | . |
| P010904 | 9 | 11.25" x 5.35" x 1.25" | 4228MN | Rotax | 08-01291 | . |

OIL COOLER APPLICATION CHART

| Aircraft Model | Aero-Classic Part No. | Positech Part No. | Stewart Warner Part No. |
|---|-----------------------|-------------------|-------------------------|
| Beech 10, C23, A24R, C24R | 8000075 | 4211 | 8406R |
| Cessna 150,152,A152,170,170,172,175,177 | 8000075 | 4211 | 8406R |
| Experimental | 8000081 | 4215 | 10599 |
| Piper PA23-150, PA28-140, PA23-160 (SN 23-163 up), PA28-150, -151, PA28-160, -161, PA28-180, -181 | 8000075 | 4211 | 8406R |
| PA18, PA18A, PA22-135, -150, -160 | 8000328 | | |
| Pitts S2B | 8000215 | 4219 | 10611 |
| Stinson 108, 108-1, -2, -3 | 8000075 | 4211 | 8406R |
| Taylorcraft F22B, F22C, F22R | 8000075 | 4211 | 8406R |

AERO CLASSIC OIL COOLERS



Aero-Classic oil coolers are ideal for experimental aircraft and offer superior performance, lighter weight, and lower cost. In side by side tests, these aluminum plate and fin engine oil coolers outperformed competitive models. Pressure tested at 400 PSIG and corrosion protected per MIL-C-5541 Class 1A. AERO-Classics oil cooler P/N 8000307 is FAA-PMA for installation on TCM IO-520-A, D, E, F, J, K, and L series engines. P/N 8000307 is also an FAA-PMA replacement for Niagara P/N 20618A and TCM P/N 654593 oil coolers. AERO-Classics oil cooler P/N 8000319 is FAA-PMA for installation on TCM O-470-F, K, L, R and IO-520-A, D, E, F, J, K, and R series engines. P/N 8000319 is also an FAA-PMA replacement for Niagara 20446A and TCM P/N 639151 oil coolers.

| Model No. | No. Plates | Dimensions (WxHxD) | Wt. (Lbs) | Part No. | Price Each |
|-----------|------------|----------------------|-----------|----------|------------|
| 8000075 | 7 | 8.14"x 4.52"x 3.62" | 1.74 | 08-00640 | . |
| 8000074 | 9 | 8.14"x 5.33"x 3.62" | 2.08 | 08-00641 | . |
| 8000081* | 10 | 8.14"x 5.74"x 3.62" | 2.25 | 08-00642 | . |
| 8000215 | 13 | 8.14"x 6.96"x 3.62" | 2.79 | 08-00643 | . |
| 8000216 | 17 | 8.14"x 8.59"x 3.62" | 3.46 | 08-00644 | . |
| 8000353 | 18 | 8.14"x 9.00"x 3.62" | 3.82 | 08-00808 | . |
| 8000328 | bar&plate | 7.02"x 3.00"x 3.62" | 2.80 | 08-00809 | . |
| 8000343 | 9x2 | 8.14"x 5.75"x 3.62" | 2.23 | 08-00810 | . |
| 8000356 | bar&plate | 11.38"x 7.25"x 3.50" | 4.48 | 08-00811 | . |
| 8000357 | bar&plate | 11.38"x 7.25"x 3.50" | 4.48 | 08-00812 | . |
| 8000307 | 11 | 7"x 4"x 12" | 7.00 | 11-03590 | . |
| 8000319 | 11 | 7"x 4"x 12" | 7.00 | 11-03591 | . |

* Model 8000081 is NOT FAA/PMA approved.



OIL COOLERS

AERO CLASSIC CONTINENTAL OIL COOLERS



Pressure tested to 300 PSIG. Optimized internal oil flow design. Corrosion Protection per MIL-C-5541, Class 1A.



| AERO Part # | TCM Part # | 7th Stud | FAA-PMA Eligibility | P/N | Price |
|-------------|------------|----------|---|----------|-------|
| 8000545 | 639171 | NO | 0-470-R, S, U IO-550-D, E, F, L IO-520-A, D, E, F, J, K, L TSIO-520-C, G, H, M, P, R, T, AF, CE | 08-04961 | . |
| 8000677 | 654595 | YES | IO-550-D, E, F, L IO-520-A, D, E, F, J, K, L TSIO-520-C, G, H, M, P, R, T, AF, CE | 08-04962 | . |
| 8000319 | 639151 | NO | IO-470-F, K, L, R IO-520-A, D, E, F, J, K, L | 08-04963 | . |
| 8000307 | 654593 | YES | IO-520-A, D, E, F, J, K, L | 08-04964 | . |
| 8000531 | 639152 | NO | O-470-M IO-470-D, U, V IO-520-A, D, E, F, J, K, L | 08-04965 | . |
| 8000127 | 652759 | YES | IO-520-A, D, E, F, J, K, L | 08-04966 | . |
| 8000683 | 626189 | NO | O-470-B, J, K, L, M, R IO-470-D, F, L, M, S IO-520-A, D, E, F, J, K, L L/TSIO-520-AF | 08-04967 | . |
| 8000687 | 65271 | YES | IO-520-A, D, E, F, J, K, L L/TSIO-520-AF | 08-04968 | . |



NDM OIL COOLERS

NDM is one of the world's largest volume manufacturers of FAA approved oil coolers. An approved supplier to both Lycoming and Continental, as well as many airframe manufacturers, NDM holds FAA/PMA's for most of these oil coolers. NDM oil coolers are manufactured utilizing the vacuum oven brazing process rather than the less costly

Controlled Atmosphere Brazing (CAB) method used by others to save costs. Utilizing the vacuum oven process guarantees a high quality product and lower warranty returns. If you are not sure which NDM oil cooler is FAA Approved for your aircraft, please provide the aircraft model & serial number and we will determine the correct oil cooler for your application.

| Part No. | NDM P/N | Stewart Warner P/N | Price |
|----------|---------|--------------------|-------|
| 08-00739 | 20001A | N/A | . |
| 08-00740 | 20002A | 8406R | . |
| 08-00741 | 20003A | N/A | . |
| 08-00742 | 20004A | 10599R | . |
| 08-00743 | 20005A | N/A | . |
| 08-00744 | 20006A | 10611R | . |
| 08-00745 | 20007A | N/A | . |
| 08-00746 | 20008A | 10614R | . |



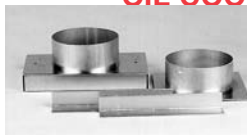
X-SERIES OIL COOLERS BY AIRFLOW SYSTEM

The first new aircraft oil cooler design in 50 years. Computer modeling and flight testing have been used to develop coolers that deliver significantly lower oil temps with no increase in oil cooler size or oil pressure drop. Designed as a direct replacement for popular oil coolers used in experimental aircraft,

the X- SERIES oil coolers are built to Airflow Systems specifications and certified aircraft oil cooler standards. Flight testing on the popular RV series of aircraft has shown oil temperature drops of 10 -15 degrees F for coolers of the same size in the same location. Not FAA approved.

| Model | Horsepower | PN | Price |
|-------|------------------|----------|-------|
| 2006X | 160 hp to 280 hp | 08-06154 | . |
| 2008X | 280 hp to 390 hp | 08-06155 | . |

OIL COOLER DUCT SYSTEM



This economical duct system provides the aircraft builder with a simple way to route cooling air to Stewart Warner style oil coolers. Manufactured from .040 aluminum, this kit was designed for use on RV series aircraft but is ideal for virtually any homebuilt using a firewall mounted oil

cooler. Kit includes baffle duct, oil cooler duct, hardware, & installation instructions. P/N 08-05000..... ea

ADC OIL COOLER ADAPTER KIT



The ADC Oil Cooler adapter is a direct replacement for Lycoming adapter LW14959 which is no longer produced. The ACD adapter allows installation of an oil cooler on Lycoming 0-235 and 0-290 series engines providing much needed oil cooling and enhanced performance.

The ADC adapter is machined from solid bar stock, rather than cast like the Lycoming adapter, thus producing a stronger and leak resistant product. The ADC kit is STC'd for all 0-235 (E-223) & 0-290 (E-229) and is ideal for certificated and homebuilt aircraft using these engines. Adapts to virtually any oil cooler and attaches to the engine underneath the oil screen housing.

P/N 07-06950.....

OIL COOLER AIR DUCTS



This lightweight air transition system provides the aircraft builder with an easy and simple way to supply cooling air to a firewall mounted oil cooler. Manufactured from composite materials, this duct system was designed to effectively and efficiently route cooling air to the oil cooler, thereby increasing the performance

of any oil cooler installation. Kit includes instructions and is made in the USA.

| Part No. | Application | Price |
|----------|---|-------|
| 08-01281 | 20002A Niagara, 800075 Aero Classics 8406R Stewart Warner, P20002C PosiTech | . |
| 08-01282 | 20004A Niagara, 800081 Aero Classics 10599R Stewart Warner, P20004C PosiTech | . |
| 08-01283 | 20006A Niagara, 800215 Aero Classics 10611R Stewart Warner, P20006C PosiTech | . |

TUNDRA IN-FLIGHT ADJUSTABLE OIL COOLER COVER



The Tundra Cover is designed to fit your Rotax radiators either from the front or rear. It is in-flight adjustable so you have complete control of your engines' temperature at all times.

In-Flight adjustable to give you complete control of your engines' temperature at all times. Control the Tundra Covers from the cockpit with precision and ease. Can adjust full open (giving approx. 80% airflow) to full closed or anywhere in between. Installs easily with all hardware supplied using only simple tools.

PN 13-05601.....

TUNDRA GROUND ADJUSTABLE OIL COOLER COVER



A new ground adjustable Oil Cooler Cover is now available for your Rotax 912 or HKS engine.

Comes complete and ready to install. There's a better way to get your engine's oil temps back in the green, so get rid of that Duct Tape and cardboard!

PN 13-05602.....

OIL DIPSTICKS



New manufacture oil tank dipsticks stamped with proper calibration markings.

| | |
|----------------------------------|-------------------|
| Dipstick Long Neck..... | P/N 08-00037..... |
| Dipstick Short Neck..... | P/N 08-04612..... |
| Dipstick Shrt NK 0-200&C-90..... | P/N 08-04613..... |
| Dipstick Ercoupe Long Neck..... | P/N 08-04614..... |

VERNI-THERM VALVE - Lycoming thermostatic oil cooler bypass valve wt. 4 oz. P/N 53E19600.....

OIL ANALYSIS KITS - ENGINE TREATMENT

METAL CHECK OIL FILTER TEST KIT



Includes oil and oil filter analysis. Oil filter debris analysis should be part of all preventative maintenance programs. Piston engines generate fine wear and larger particles as the wear becomes more critical. Filter analysis is critical for turbine engines because they generate predominately larger wear particles that are trapped by small micron filtration. The oil filter is rinsed and the exact

alloys presents in the debris are determined by SEM/EDXRF. The AMS number, amount, type, form, and condition of the particles are reported. Features: • Largest Oil Analysis Results Database • The Most Accurate Interpretive Results Guidelines • The Most Experienced staff. • Recommended, Approved, or Authorized by Engine Manufacturers. • 24 Hour a Day Service Available 7 Days a Week • Filter Debris Analysis and Alloy Determination Using Scanning Electron Microscopy Energy Dispersive X-Ray Fluorescence SEM/EDXRF. P/N 08-06270.....

AOA OIL ANALYSIS KIT



Why not take the extra worry out of flying: Examine the interior condition of your aircraft engine with Aviation Oil Analysis. How would oil analysis help you? Safety is the main factor for oil analysis. Preventive maintenance that can be done on the basis of reports can save you money by:

1. Replacement of worn parts prior to total engine failure.
2. Ability to schedule maintenance at your local FBO, rather than emergency repairs away from home.
3. Minimum down time for equipment.
4. Possible longer time between overhauls.

Small vial, mailing bag, shipping form and instructions are furnished with order. Upon receipt at the laboratory in Phoenix, Az., the oil sample is analyzed and a full report is forwarded in 24 hrs. AOA, unlike others, specialize in aviation analysis only so are most perspective in their findings.

Kit for reciprocating engines..... P/N 08-00436.....
Kit for turbine engines..... P/N 08-00435.....

LAB ONE AVIATION (LOA) OIL ANALYSIS KIT



Oil is the life blood of your engine. An aviation oil analysis can forecast future engine problems and save you money. This kit includes a sample bottle, shipping container and the paperwork. Upon receipt, your sample will be processed within 24 hours with the results emailed or mailed from Lab One in Phoenix, AZ. Kits can be used on any reciprocating or turbine engine and helicopter transmissions and tail rotors. P/N 08-01222.....

CHAMPION CH48200 OIL FILTER ANALYSIS KIT



Champion Oil Filter Analysis Kit can help you detect abnormal engine wear and even predict impending engine trouble, because it provides a comprehensive analysis of both the larger wear particles in the oil filter and the finer wear particles in the engines oil. With this Kit you will get a detailed report on the filter element and the oil that is based on the state of the art analytical techniques and lab results interpretation. The report will be generated with in 24 hrs of the receipt of the sample, and cost less than 1 hour of lab maintenance in the shop! **Each Kit Contains the following items:** • Customer Information Form (CIF) • Plastic Oil Filter Bottle • Oil Sample Bottle • Oil Sample Hose • User label for Oil Filter Bottle • User label for Oil Sample Bottle • Shipping label address to Aviation Laboratories • The laboratory analysis of the oil filter debris and oil sample included in the price of the kit (if sent with the oil filter). The filter can be returned; however, the cost of this is not included in the price. P/N 08-01051.....

AVIATION SERVICE REMINDERS

These reminder cards provide an excellent maintenance reminder for aircraft owners. They attach by static cling, leaving no residue on the windshield. Cold weather or hot, they stick in the corner of the windshield to remind the pilot of oil status every time they fly.

P/N 08-42305 10/pk



NEXT AIRCRAFT SERVICE DUE - STICKERS



Printed on white semigloss with black type and "FILL IN" blanks. Removable decals are designed to adhere to any surface and not leave residue behind. Measure 3.0" h x 2.75" h. Fields include: * Tail Number * Oil and Filter Change (Last and next hour and date) * Annual

Inspection Due Date (Month and Year) * ELT Battery Due Date (Month and Year) * Transponder Test / Inspection Due Date (Month and Year) * Altimeter & Static System Test Due Date (Month and Year) * 100 Hour Inspection (Last and Next) P/N 09-02137

VPCI-326™ CORROSION INHIBITOR OIL ADDITIVE



An approved Lycoming engine oil additive for prevention of oxidation of all metals. Designed for use in engine oil at 1:10 concentration, VpCI™ (Vapor Phase Corrosion Inhibitors) will protect your engine from corrosion (in solution and in all void spaces) for up to 3 years during storage. For hydraulic oil and gearbox assemblies. Performs effectively under the adverse conditions of 100% relative humidity, and in the presence of such corrosive species as chlorides, sulfur compounds or hydrogen sulfide. There are no hazardous chromates, nitrites or phosphate inhibitors, and it utilizes the finest paraffinic petroleum distillates as carriers. Possesses an exceedingly high flash point, enhancing in-plant safety when compared to common oil protectants. It comes in concentrate form, which is easily diluted with lubricating, hydraulic or preservative oils, saving shipping and inventory expense. Not only effective on ferrous metals, but also effective on zinc, aluminum, galvanized steel, copper, cadmium, silver, brass and many other alloys. Can be upgrade most lubricants in their anti-corrosion ability. Passes through 1 micron filter. Conforms to MIL-PRF-46002C. Conforms to MIL-I-85062 (Additives to oils). Conforms to MIL PRF-16173E. • NATO 6850-66-132-6100. • NSN 6850-01-470-3358 P/N 09-02002

CAMGUARD OIL ADDITIVE



Designed to dramatically improve the performance of all mineral based, semi-synthetic and fully synthetic motor oils in the areas of corrosion protection, wear reduction, and seal protection. Designed to make regular engine oil what it needs to protect and lubricate any engine. A synergistic blend of advanced oil additives from all over the world, designed to reduce wear, curb deposit formation and more importantly protect engines against rust and corrosion. It contains multiple corrosion inhibitors for both ferrous and non-ferrous metals. A combination of ashless anti-wear compounds, anti-oxidants designed to reduce carbon deposits and special seal conditioners to prevent oil weeping. Camguard is FAA accepted and approved for use in piston engine aircraft oils meeting SAE-1899 standards. Compatible with piston aircraft oils, passenger car motor oils, most marine oils, and heavy-duty diesel oils.

Camguard aircraft oil additive 1 pint..... P/N 08-07096.....
Camguard aircraft oil additive Case of 4 pints..... P/N 08-07097

MICROLON AIRCRAFT ENGINE TREATMENT



One-time metal treatment that virtually eliminates friction in all internal combustion engines which improves performance (horsepower), reduces wear, and extends engine life. Also decreases fuel consumption, reduces oil consumption, and lowers operating temperatures. Impregnates the engines bearing surfaces, forming a dry film lubricant that lasts no matter how many times the oil is changed. Continental A-65, C-85, and C-90 engines take the

Half Kit. Most Lycoming and Continental engines used in light aircraft take the Single Kit. Turbocharged and Radial engines take from 2 to 6 Single Kits. Call for details if you have any questions on the quantity of Microlon needed for your application.

Microlon CL-100 Aircraft Kit (Single)..... P/N 09-35805

Microlon CL-100 Aircraft Kit (Half) P/N 09-35810

FRICTION MASTER KIT



Friction Master Engine treatment is an oil additive that enhances the engine performance in many ways. Friction Master has fluoropolymer (PTFE) particles penetrate the metal surfaces leaving a surface with a lower coefficient of friction. In essence the metal-to-metal contact is changed to a PTFE to PTFE contact which is more efficient, meaning less energy is used to overcome friction.

Kit 270-1A is for engines up to 300 cubic inches, (approx. 125 HP max.) P/N 05-04302.....

Kit 270-1B is for engines up to 600 cubic inches, (approx 400 HP max.) P/N 05-04303.....

POLY-FIBER ESO ENGINE STORAGE OIL



A fine lubricating and preservative oil used to prevent corrosion in internal combustion engines during extended storage. MIL-1-21260. Quart..... P/N 09-42450

Gallon P/N 09-42455

GOLDEN SPECTRO 2-CYCLE ENGINE OIL



A modern synthetic blend that surpasses the lubrication and protection ability of petroleum oils. Formulated with clean-burning synthetics, it will not foul spark plugs. High film strength components ensure complete protection against piston seizure and scuffing due to inadequate lubrication. Special additives protect against rust and corrosion. Leaves your engine free of harmful deposits and offers essentially smoke-free operation when used at the recommended ratios. P/N GS001

EP

AVIATION OIL - GREASE

AEROSHELL AVIATION OILS



Aeroshell W100 is an ashless, SAE 50 dispersant oil that provides excellent service in all four cycle aircraft piston engines. Aeroshell W Multigrade 15W-50 is an antiwear, ashless, dispersant, semi-synthetic oil. It is fully approved in all Lycoming, Continental, and Pratt & Whitney aircraft piston engines. Reduces engine wear, fuel consumption, and oil consumption. Helps engines start faster and eliminates the need for seasonal oil changes. Aeroshell W100 Plus contains additive LW16702 which reduces engine wear and corrosion. Ideal for operations in mild to warm temperatures. Aeroshell W100 & SAE 50 oils meet MIL-L-22851C specification. Aeroshell Turbine Oil 500 provides superior high temperature corrosion protection & excellent anti-wear protection. Shell Oil W80 Plus introduces the anti-wear and anti-corrosion additives of AeroShell W100 Plus engine oil into a lighter, single-grade oil for use in colder climates. The anti-wear additive reduces wear on start-up by forming a microscopic layer on the engine's moving parts to prevent metal-to-metal contact when there is little oil present. Combined with a corrosion inhibitor, it is designed for pilots who fly either in cooler weather or less frequently.

| Description | Qt. P/N | Price/Qt. | Case P/N | Price/Case |
|--------------------|----------|-----------|----------|------------|
| W80 Plus | 08-05920 | . | 08-05919 | . |
| W100 SAE 50 | 08-05400 | . | 08-05401 | . |
| 15W-50 Multigrade | 08-05450 | . | 08-05451 | . |
| W100 Plus | 08-05485 | . | 08-05486 | . |
| Mineral Oil | 08-05410 | . | 08-05411 | . |
| Turbine Oil 500 | 08-00581 | . | 08-00582 | . |
| 20W-50 Mineral oil | 08-05310 | . | 08-05311 | . |

AEROSHELL OIL SPORT PLUS 4



AeroShell Oil Sport Plus 4 is ideal; as it is extremely resistant to the immense shear forces that occur in areas of high-pressure contact such as high-speed gearboxes, valve trains, bearings, pistons and liners. This is where the blend of base oil and additives is most crucial. AeroShell Oil Sport Plus 4 is made up of a blend incorporating synthetic technology and high performance additives to provide long lasting protection. In addition, detergents in the oil keep important areas, such as the pistons and cylinders, clear of carbon based particles that tend to adhere to these surfaces. So when you change your oil to new AeroShell Oil Sport Plus 4, you are not only removing dirt from your engine, you are also replenishing the additives used to protect your engine during normal operation.

DO NOT use AeroShell Oil Sport Plus 4 in engines that are designed to use Ashless Dispersant aviation piston engine oils such as AeroShell W Oils. This includes air cooled Teledyne Continental Motors, Textron Lycoming and Jabiru engines.

4 Cycle Sport Plus 4 Oil (Liter) P/N 08-07048
 4 Cycle Sport Plus 4 Oil (Case of 12) P/N 08-07047

2 Cycle Sport Plus 2 Oil Available Early 2009!

PHILLIPS 66 X/C AVIATION OIL



X/C oils provide easy starting and quick lubrication under low temperature conditions. Provides film strength and low wear under high temperature conditions. Provides excellent protection against engine deposits, ring groove carbon, piston lacquer, crankcase sludge and oil oxidation. Contains ashless dispersant which keeps engine clean. With more than 10 years of outstanding field performance, X/C oil meets Avco-Lycoming & Teledyne Continental engine specifications.

| Description | Qt. P/N | Price/Qt. | Case P/N | Price/Case |
|--------------------|----------|-----------|----------|------------|
| X/C 20W-50 Av. Oil | 08-05300 | . | 08-05301 | . |
| 20W-50 Mineral oil | 08-05310 | . | 08-05311 | . |

PHILLIPS 25W-60 ENGINE OIL GALLON



X/C 25W-60 is the first and only multiviscosity aviation oil designed and approved for radial engines originally designed to run on 120 grade. Pilots and mechanics will notice immediate benefits with X/C 25W-60 over single grade oils. Benefits such as improved oil flow at startup, quicker warm-up time, cooler operating temperatures and a cleaner operating engine. X/C 25W-60 also has proven corrosion protection in extreme conditions. X/C 25W-60 can be used year-round, during break-in and on to TBO. P/N 08-00885

EXXON ELITE AVIATION OIL



Exxon Elite™ 20W-50 is a multigrade oil with the flexibility to lubricate effectively over a wider range of temperatures than monograde oils. Compared to a monograde oil, a multigrade oil provides better cold-start protection and a stronger lubricant film at typical operating temperatures. Other benefits include lower oil consumption and better fuel economy as a multigrade oil, Exxon Elite™ 20W-50 has all these intrinsic advantages. • Meets SAE J1899 • Meets MIL-L-22851D (obsolete) • U.S. military approved • Contains anti-wear/anti-scuffing additive required by some Lycoming engines • FAA approved fluid for Alternative Method of compliance w/AD-80-04-03-R2, paragraph b.1

Quart..... P/N 08-00392
 Case P/N 08-00432

CASTROL AD & S PISTON OILS



Castrol® Aviator AD piston oils are formulated from selected, highlyrefined mineral basestocks blended with an advanced additive system designed to enhance low temperature fluidity, high temp. stability, corrosion inhibition and anti-wear protection. The additive system is ashless and of a dispersant nature offering greater engine cleanliness and maximum protection.

| Oil | Quarts P/N | Price | Case P/N | Price |
|---------------|------------|-------|----------|-------|
| Aviator S65 | 08-00923 | . | 08-00915 | . |
| Aviator S80 | 08-00924 | . | 08-00916 | . |
| Aviator S100 | 08-00925 | . | 08-00917 | . |
| Aviator S120 | 08-00926 | . | 08-00918 | . |
| Aviator AD65 | 08-00927 | . | 08-00919 | . |
| Aviator AD80 | 08-00928 | . | 08-00920 | . |
| Aviator AD100 | 08-00929 | . | 08-00921 | . |
| Aviator AD120 | 08-00930 | . | 08-00922 | . |
| Aviator A80 | 08-06992-1 | . | 08-06992 | . |
| Aviator A100 | 08-06993-1 | . | 08-06993 | . |
| Aviator A120 | 08-06994-1 | . | 08-06994 | . |

LYCOMING OIL ADDITIVE



Avco Lycoming has approved oil additive LW-16702 that contains an anti-scuffing agent and can dramatically reduce engine wear. This additive is applicable to all Avco Lycoming piston aircraft engines, and factory recommends use at every oil change or every 50 hours, whichever occurs first. For 6-8 qt. sump, use one 6 oz. can, for 12-15 qt. sump, use (2) 6 oz. cans, for 17-19 qt. sump, use (3) 6 oz. cans, for 23 qt. sump, use (4) 6 oz. cans. 6 oz. can P/N 08-05600

PENNZOIL OIL



Two-cycle oil for air-cooled engines. Recommended by engine manufacturers for air- and water-cooled engines.

8oz. Single Bottle..... P/N 08-06261
 16 oz. Single Bottle P/N 08-01240
 Case of 24 8oz. Bottles P/N 08-06260

AVIATION GAS TURBINE OILS

Case quantities are 24 quarts.

| Oil | Qt. P/N | Price | Case P/N | Price |
|------------------------|----------|-------|----------|-------|
| Aeroshell Turbine 500 | 08-00581 | . | 08-00582 | . |
| Aeroshell Turbine 555 | 08-00757 | . | 08-00758 | . |
| Aeroshell Turbine 560 | 08-00759 | . | 08-00760 | . |
| British Petroleum 2380 | 08-00761 | . | 08-00762 | . |

AEROSHELL GREASES

Mineral Grease #5 (MIL-G-3545C) P/N 08-05455.....
 General Purpose Grease #6 (MIL-PRF-24139A) .. P/N 08-05460.....
 Synthetic Grease #7 (MIL-PRF-23827C) P/N 08-05475.....
 Mineral Grease/Helicopter #14 (MIL-G-25537C) .. P/N 08-05480.....
 Synthetic Grease #22 (MIL-PRF-81322G)..... P/N 08-05490.....
 Synthetic Lithium Grease #33 (MIL-PRF-23827C) . P/N 08-00825.....
 Syn. High Pressure Grease #33MS(MIL-G-21164D) . P/N 08-00824.....

MOBIL GREASE 28



Mobilgrease 28 meets the quality level of U.S. Military Specification MIL-G-81322E, General-Purpose, Aircraft, and is approved against U.S. Military Specification DOD-G-24508A (Navy) for ship-board auxiliary machinery. It can be designated U.S. Military Symbol WTR and NATO Symbol G-395. P/N 08-06157

ENGINEGUARD AERO OIL ADDITIVE



EngineGuard Aero is corrosion inhibiting oil additive for protecting aero engines over winter or for inhibiting an engine for prolonged periods. Combining both powerful contact and vapour phase corrosion inhibitors, it provides an unprecedented level of protection against internal corrosion. Engine Guard Aero is supplied in 250ml tins.

EngineGuard Aero has been specifically formulated to provide outstanding protection to Aero engines that are used infrequently or that are inhibited and in long term storage. P/N 09-02068

MOBIL JET OIL II (AVIATION)



If you believe that one synthetic jet engine oil is the same as another, we have good news to share. They are not. Mobil Jet Oil II is a one-of-a-kind performer. No Standard Type II commercial aviation oil helps control jet engine deposits better than our products. Mobil Jet Oil II helps keep oil systems clean. That can mean less maintenance more flying and greater revenue. Mobil Jet Oil II has a history of helping to keep aircraft where they belong - in the air generating revenue. Let us show you what the world's most reliable lubricant for gas turbine engines can do for your fleet. Today, about 160 major airline use Mobil Jet Oil II in more than 11,000 gas turbine engines. Plus it can be less maintenance, more flying and greater revenue. QT. P/N 08-00763

Mobil Jet II Case P/N 08-00764

FUNNELS—OIL DRAIN SYS—CABIN HEATERS

CLEAN FUNNEL™



Clean Funnel™ is the funnel that keeps itself clean. Replacing the caps on each end after each use prevents left over fluid from dripping out, and keeps your work area or baggage compartment clean. No need to wipe your funnel out with a rag before reusing. Clean Funnel™ is ideal for use with fuel or oil as well as windshield washer fluid, detergents, antifreeze, hydraulic fluid, and more. Great for aircraft, automobiles, motorcycles, tractors, boats, ATV's snowmobiles, and more.

- Model 112 (turquoise) has a 1 pint fluid capacity and a 12" vinyl tube attached to its spout, making it very handy to reach into small or tight spaces.
- Model 415 (red) has a 1-1/2 quart capacity, 17" long with flexible spout, and spout I.D. is 9/16".
- Model 428 (black) has 1-1/2 quart & 13-1/4" long with a flexible spout and 1-1/8" O.D. spout.

| Model # | Color | Part No. | Price |
|---------|-----------|----------|-------|
| 112 | Turquoise | 12-00374 | . |
| 415 | Red | 12-00375 | . |
| 428 | Black | 12-00376 | . |

DISPOSABLE FOLDING OIL FUNNELS



These disposable funnels are very popular among aircraft owners and pilots for adding engine oil. They store flat, clean and dry in a recloseable bag, and eliminate the messy cleaning when using a regular funnel. Also ideal for brake fluid, resins, and paints. Furnished in pack of 10 funnels.

Pack of 10.... P/N 08-00040.....

LYCOMING OIL SCREEN ADAPTER



This oil screen adapter replaces the standard Lycoming oil screen housing on Lycoming O-320 series engines and up. It retains the thermistor valve and the oil temperature sender but eliminates the oil screen, eliminating the need for constant service. P/N 08-06752.....

OIL DRIP PAN



The drip pan is 54-1/2" x 32-1/2" x 2" and is manufactured out of an extremely durable and chemical resistant plastic (high density polyethylene). White in color, our drip pan is neat and clean in appearance

and allows for easy visual inspection and monitoring of any engine leaks. The size and design of the drip pan will collect virtually any leaking fluids and eliminate the need for five quart pails and other messy collection containers. It is also a convenient place to pour fuel samples. Specifically designed for general aviation... P/N 08-06700.....

DRIP TRAP - OIL ABSORBENT



Drip Trap is a mat made of corn stalks which captures oil, coolant, and other aviation fluids that can drip from the aircraft. Drip Trap measures 20" x 20" and can absorb up to 6 quarts of oil. It won't blow away, can be driven on, won't tip over like a drip pan, and can be walked on without tracking the fluids on the hangar floor. Excellent for use with aircraft, cars, SUV's, trucks, motorcycles and in shops. When Drip Trap is fully saturated just dispose of it and replace. Drip Trap is the environmentally friendly and economical way to capture and contain drips and spills. P/N 13-04950.....

DRAIN MATE



The patented Drain Mate is a handy new pilot tool that works like a second pair of hands. Great for complete draining of motor oil bottles and other fluid containers, Drain Mate saves time, money, and frustration. Simple to use. The spring clamp attaches to the funnel, bucket or bowl. Bend or flex it to near vertical drain position, then insert bottle for final draining (after conventional bulk removal). Depress finger tabs to clamp/unclamp bottle. The Drain Mate can also be used for other draining chores around the hangar, home, garage, marina, and shop. P/N 08-00570.....

OIL QUICK DRAIN PROBE KITS



STC SA4024NM - Drain oil in wind or shop with little clean up. - Save money on clean up, solvent, labor and parts. - Oil goes into bucket with out splashing or spilling.

Approved for Cessna Aircraft Models: 210J through 210 R, T210J through T210R, P210H through P210R, 337 through 337H, T337B through T337H, and P337H 310 through 310R, T310P through T310R 320 through 320F, 340, and 340 A401 through 401B, 402 through 402C, 404, 411, 411A, 414, 414A, and 421 through 421C

| Description | Part No. | Price |
|--|----------|-------|
| Single Engine Cessna Oil Quick Drain Kit Includes: 1 STC Paper Work, 1 Probe, 1 Valve With o-ring, 1 AN900-10 Gasket | 12-02101 | . |
| Twin Engine Cessna Oil Quick Drain Kit Includes: 1 STC Paper Work, 1 Probe, 2 Valve With o-ring, 2 AN900-10 Gasket | 12-02102 | . |
| Nylon probe only | 12-00697 | . |

EVANS NPG + COOLANT FOR ROTAX ENGINES



NPG+ is new coolant providing dramatic improvements in heat transfer and viscosity that make the new fluid a "pour-in," not requiring changes to cooling system components. NPG+ waterless coolant virtually eliminates boil over in gasoline or diesels - the waterless coolant allows engines to tolerate running hotter, without boiling over, and allows the cooling system to run at very low or no pressure. Because there is no water in the system engines operating with NPG+ will be free from corrosion and electrolysis, and the engines will run well no matter how hard they are driven or how hot or cold the environment is. Specified coolant for Rotax Aircraft Engines, Type 912 and 914 (series). P/N 08-04535.....

EVANS PREP FLUID



Evans Waterless Flush is used when systems cannot be drained properly of all the conventional water and antifreeze. Suggested to be used with experimental aircraft conversion and all motorcycle, ATV and import cars. Not intended to be used as a coolant. P/N 08-04534.....

EXXON OIL BOTTLE ADAPTER



This adapter allows easier pouring from the large mouth Elite oil bottles in certain aircraft and includes a built-in valve to allow the flow of oil to be regulated. P/N 08-01042.....

OIL VALVE - THE SPILL STOPPER

Oil Valve The Spill Stopper

• Takes the mess out of adding oil • On/Off control • No more spills • Re-usable P/N 13-02833.....



OIL BUDDY (NO SPILL)



For do it yourself oil changes or refilling small tanks in lawn mowers, snowblowers and chainsaws, Oil Buddy is your best tool. Eliminating the messy cleanup and spillage problems, Oil Buddy gets the job done fast and easy without getting your clothes dirty. For small fill ups, the Oil Buddy screws onto the head of the oil container and can be left there for further use if the bottle is still partially full. When the valve is closed, oil can't get out and dirt can't get in. Even if the oil container gets knocked over, no spillage will occur. Fits most 1-Quart /1-Litre bottles. P/N 13-03144.....

OIL AND OIL FILTER RECYCLING CONTAINERS



Distinctive Features: • Attractive, user-friendly design • Wide-mouth drain pan / lid make oil changing easy and neat. Snug-fitting top prevents spillage. • Large capacity. • Holds oil and filters for at least two average oil and oil filter changes. • Size: 4-1/2 gallons. Color: Yellow • Unique filter tray. • Filters drain on tray allowing for clean handling and removal. • Environmentally friendly. • Container's lid and tray are made of post-consumer recycled plastic. P/N 08-04975.....

RANS AIRCRAFT CABIN HEATER



The RANS aircraft heater is the answer to the winter flying "chills". It is very lightweight, inexpensive and installs easily in just two hours. This heater utilizes ram air & the heat off the engine muffler. Operation is simple. Slipstream air is forced through the heater inlet, passing over the muffler, picking up the heat and delivering it to the cabin or pod via an Aeroduct hose. Contains no moving parts. Fits Rotax mufflers and adaptable to other engines. P/N 05-17400.....

INFRA-RED CABIN HEATERS



These small, lightweight units are forced air infra-red D.C. quartz heaters that warm you almost instantly. Each model is thermally protected by a safety valve heat limiter and fuse protection is another safety feature. Select the heater you require according to the size of your alternator and your other electrical needs. All models weigh 2 lbs. and are 4" h x 5" w x 6" d. For use in homebuilt aircraft, boats, RVs, vans & heavy equipment.

| Model | Volts | Amps | Watts | Max BTU's | Min BTU's | Price |
|----------|-------|------|-------|-----------|-----------|-------|
| K12-2500 | 12 | 25 | 355 | 1212 | 808 | . |
| K12-3500 | 12 | 35 | 497 | 1696 | 1131 | . |
| K12-4700 | 12 | 47 | 658 | 2250 | 1125 | . |
| K24-2500 | 24 | 25 | 700 | 2389 | 1593 | . |
| K24-3000 | 24 | 30 | 840 | 2867 | 1912 | . |
| K24-3500 | 24 | 35 | 980 | 3345 | 1673 | . |

PROLUBER ENGINE PRE-OILER



ProLuber is a device that is added on to your oil system to give you pre-start oil pressure. You just turn on the ProLuber for a couple of seconds, watch your oil pressure gauge rise, and then start the engine when the pressure reaches the desired level. It is able to generate 40-60 lbs. of oil pressure in your engine before you hit the ignition switch. Simple to install and requires no drilling through your oil pan or the block. Complete kit for installation. P/N 08-00197.....

EP

ULTRALIGHT ENGINE ACCESSORIES

SPARK PLUG CADDY



Handy case holds (2) 14mm spark plugs. Small enough to fit into your pocket.

P/N 13-03869

SPARK PLUG WRENCH



Loosen or tighten your spark plugs with this handy tool.

P/N 13-03921

PLASTIC STARTER HANDLE



Black flexible plastic heavy duty handle. Tested to -40°F

P/N 13-03865

SPARK PLUG JACK



Rivets or screws to any flat surface and holds two spare 14mm plugs. Tough polycarbonate plastic with spring-loaded plug anchors keeps plugs dry and protects gaps.

P/N 13-03870

NYLON STARTER ROPE



The perfect replacement rope for worn-out manual starters.

P/N 13-03922 per ft.

SPARK PLUG CAPS



Original NGK. Black. 5000 ohm resistance. P/N 08-00737 is used on threaded type plugs. P/N 08-04960 is used on solid top plugs.

P/N 08-00737

P/N 08-04960

SPARK PLUG WIRE



High-quality multi-strand copper core unshielded wire. 7mm diameter. For all Rotax® and most other engines. Replaces Rotax® Part No. 965-158.

P/N 11-04105 per ft.

FLEXDRIVE



PosiFlex coupler for Quicksilver®

For 377/477 w/o high-thrust mod P/N 05-01985

For all high-thrust mods P/N 05-01986

ULTRALIGHT 503 IN-CABIN HEATER



This is a complete Rotax 503 In Cabin Heater Kit works great on Chinooks, Challengers, and other ultralight.

P/N 05-03064

ULTRALIGHT 912 ALTERNATOR KIT



External alternator kit comes with all necessary components other than wiring. It allows the owner of a Rotax 912 to achieve extra amperage for accessories (increases output between 35-40 amps). The external alternator is driven by a pulley/belt setup which is attached to the standard 912 prop flange. We have also machined an extra belt groove in the prop flange pulley which could be used for another belt driven device, such as a vacuum pump. The complete assembly weighs less than 9 lbs.

P/N 05-03063

RATIO-RITE CUP

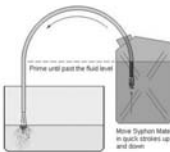


Getting the right oil-to-gas ratio is no problem with this tough polypropylene cup. Just fill the cup with oil to the ratio level desired, and mix with gasoline. Ratios from 16:1 to 50:1. Graduated in ounces and CCs for filling chain cases, etc. 18 oz. capacity.

Cup P/N 08-01091

Lid P/N 08-03677

SYPHON MATE



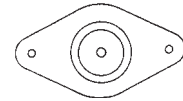
Here's a safe and easy method of fuel transfer. A simple jiggle of the Syphon Mate establishes the flow, and then air pressure maintains it. Never wears out, and it's guaranteed for three years. The outlet end is 1/2" standard pipe thread for easy attachment to a garden hose, if needed.

P/N 05-01018

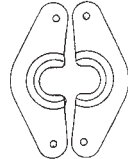
STAINLESS STEEL FIREWALL SHIELDS



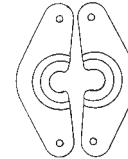
Single Piece
3/16" Hole
w/ Rubber Backing
P/N 61-175 ea.



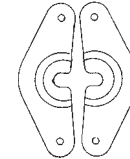
Single Piece 5/32" Hole
3/4" Dimple For Grommet
P/N 61-225 Ea.



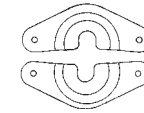
Two Piece 1/2" Hole
3/4" Dimple For Grommet
P/N 61-300 pr.



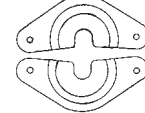
Two Piece 3/8" Hole
3/4" Dimple For Grommet
P/N 61-275 pr.



Two Piece 1/4" Hole
3/4" Dimple For Grommet
P/N 61-250 pr.



Two Piece 3/8" Hole
1" Dimple For Grommet
P/N 61-375 pr.



Two Piece 3/8" Hole 1-1/4"
Dimple For Grommet
P/N 61-475 Pr.

Two piece shields for use over cables or wires with large end-fittings or existing installations. Single piece for use where the cable or wire may pass through the hole. Flat shields designed for use on wooden or composite firewalls using a fire resistant sealant to prevent leaks. Both types of shield available in flat or with dimple to accommodate rubber grommets up to outside diameter.

Actual hole size in 2 piece shields is slightly larger than indicated to prevent chafing cable. Ream pilot hole in single piece shields oversize for the size grommet used. Use grommets that fit tightly around the cable or wire to insure a good seal.

Shields may be installed with screws, bolts and plate nuts or rivnuts. Install cable and grommet in firewall. Locate the shield to insure that it is centered on the cable - then drill attach holes in firewall. Shields pre-drilled with 5/32" mounting holes. If more than one cable passes through grommet fire resistant sealant must be applied to grommet.

Caution: Any holes drilled in the firewall are potential source of carbon monoxide in the cockpit. Extreme caution must be exercised when installing firewall shields in your aircraft. They do not provide the necessary seal around cables or wires to prevent carbon monoxide, smoke or fire from entering the cockpit. The shields are designed only to protect the sealing material (grommets/gaskets) from excessive heat.

HOMEBUILDERS CONICAL LYCOMING ENGINE MOUNT BUSHINGS



These new bushings offer superior damping qualities and do not harden over time as original mounts can do. They are molded from hi-tech silicone rubber which offering a much lower compression set which reduces engine sagging over time. Silicone also withstands a very wide temperature range and is compatible with grease and oil. These mounts are not PMA'd or FAA approved and are for use on experimental aircraft only. Not an approved replacement for Lycoming 71032 bushings. Sold in set of 8 bushings.

P/N 08-00662 /Set

LORD ENGINE MOUNTS FOR ULTRALIGHTS



All altitude mounts for vibration isolation and shock prevention in all directions. Available in soft, medium, or hard rubber.

Soft P/N 08-07049

Medium P/N 08-01013

Hard P/N 08-07050

Snubbing Washer P/N 9810145-01804

RUBBER ENGINE MOUNTS



Used to isolate vibration from engine/exhaust system to airframe. P/N 10-01557

RUBBER ENGINE MOUNTS



Natural Rubber and steel. P/N 13-03824

LORD SQUARE MOUNT

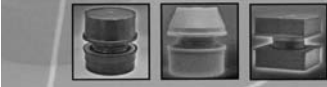
Natural Rubber and steel. P/N 13-03823



EP

BARRY ENGINE MOUNTS

BARRY MOUNTS



Barry Controls has actively supported the general aviation market since 1981 and holds PMA approvals on a wide range of engine mounts. Barry mounts are warranted for 500 hours or 12 months and feature outstanding quality & value. Call for unlisted part numbers.

BEECHCRAFT

| Aircraft | | P/N | Engine | Price |
|-------------------|--|----------------------------|--------|-------|
| Common Name | Model | | | |
| Skipper | 77 | 94150-40 | All | . |
| Sport | B19, M19A | 94150-01 | All | . |
| Musketeer | 23 | 94150-01 | All | . |
| Sundowner | C23 | 94150-01 | All | . |
| Bonanza | S-35-V35, A, B, C33A, E33A, C, F33A, C, 36 | 7351231-3 | All | . |
| Bonanza | A36 | 7351231-3 | All | . |
| Sport (Musketeer) | 19A | 94150-01 | All | . |
| Twin Bonanza | E50, G50, H50, F50, J50 | 94110-40 | All | . |
| Turbo Baron | 56TC, A56TC | 94011-04 | All | . |
| Baron | 58P | 94031-03 | All | . |
| Baron | 58TC | 94031-03 | All | . |
| Baron | A24, A24R, B24R, C24R, D55, D55A, E55, E55A, 58, 95-C55, 95-C55A | 96068-01 | All | . |
| Baron | 99-55, 95-A55, 95-B55, 95-B55A | 96071-01 | All | . |
| Bonanza | C35-G35 | 96115-01 | All | . |
| Duke | 60, A60, B60 | 94011-04 | All | . |
| Queen Air | 65, A65, 65/80, 65/88, 65-A80, 65-B80, 70 | 94110-40 | All | . |
| Duchess | 76 | 94011-02(2) 94011-20(2) | All | . |
| Travel Air | 95, B95, A, D95A, E95 | 94150-40 | All | . |

Note: (1) Denotes 1 ea. per engine. (2) Denotes 2 ea. per engine. All others require 4 engine

GULFSTREAM

| Aircraft | | P/N | Engine | Price |
|-----------------|--------------------|------------------------------|--------|-------|
| Common Name | Model | | | |
| | 111 | 94011-02(02) 94011-20(02) | All | . |
| | 112, B, T, TC, TCA | 94011-02(02) 94011-20(02) | All | . |
| Twin Commanders | 500 | 94110-01 | All | . |
| | 500A | 94110-40 | All | . |
| | 560A, E, F | 94110-40 | All | . |
| | 680, E, F, FL, FLP | 94110-40 | All | . |
| | 685 | 94001-01 | All | . |
| | 720 | 94110-40 | All | . |
| Cougar | GA-7 | 94011-20 | All | . |
| Tiger | AA5B | 94011-20 | All | . |

Note: (1) Denotes 1 ea. per engine. (2) Denotes 2 ea. per engine. All others require 4 engine * AIRCRAFT SERIAL NUMBERS

VANS

| Aircraft | | P/N | Engine | Price |
|-------------|-------|----------|--------|-------|
| Common Name | Model | | | |
| | RV-3 | 94011-20 | All | . |
| | RV-4 | 94011-20 | All | . |
| | RV-6 | 94011-20 | All | . |

CIRRUS DESIGN

| Aircraft | | P/N | Engine | Price |
|-------------|-------|----------|--------|-------|
| Common Name | Model | | | |
| Cirrus | SR20 | 94006-01 | All | . |
| Cirrus | SR22 | 94001-01 | All | . |

CESSNA

| Aircraft | | P/N | Engine | Price |
|-------------|------------------------|----------|--------|-------|
| Common Name | Model | | | |
| | 152, 152A | 94150-40 | All | . |
| Skyhawk | 172I, J, K, L, M, N, P | 94011-20 | All | . |
| | P172D | 94110-40 | All | . |
| | R172E | 94017-01 | All | . |
| Skylark | 175, A, B, C | 94110-40 | All | . |
| Cardinal | 177, A, B | 94011-20 | All | . |
| | 180, A thru H | 94110-40 | All | . |
| Skylane | 182, A thru R | 94110-40 | All | . |
| | R182, TR182, T182 | 94011-02 | All | . |
| Skywagon | 185, A thru F, A185F | 94110-40 | All | . |
| | 188 | 94110-40 | All | . |

CESSNA CONT.

| Aircraft | | P/N | Engine | Price |
|---------------------------|-------------------------------------|--|--------|-------|
| Common Name | Model | | | |
| Stationair | 206, U206, A thru G, P206, A thru E | 94030-01 94031-01 | All | . |
| | TP206, A thru E, TU206, A thru G | 94030-01 94031-01 | All | . |
| | 207, A, T207, T207A | 94030-01 94031-01 | All | . |
| Yates Aircraft Conversion | A188B | 94007-01 | All | . |
| Centurion | 210, A thru C 210, D thru H, J | 94110-40 94030-01 (2) 94031-01 (2) | All | . |
| Centurion | 210K thru N | 94030-01 (2) 94031-01 (1) 94031-02 (1) 94030-01 (2) | All | . |
| Turbo Centurion | T210F thru H | 94031-01 (1) 94031-02 (1) | All | . |
| Turbo Centurion | T210J thru N | 94030-01 (2) 94031-02 (1) | All | . |
| Pressurized Centurion | P210N, R | 94030-01 (2) 94021-01 (1) 94021-02 (1) | All | . |

TWIN ENGINE AIRCRAFT

| | | | | |
|----------------|----------------|----------|-----|---|
| | 310B, C | 94110-40 | All | . |
| Skynight | 320, A thru C | 94016-03 | All | . |
| | 320D, E, F | 94006-01 | All | . |
| | ALT. | 94017-01 | All | . |
| Skymaster | 336 | 94016-01 | All | . |
| | 337, A thru F | 94017-01 | All | . |
| | P337H | 94017-01 | All | . |
| | T337, B thru F | 94017-01 | All | . |
| | 340, A | 94006-01 | All | . |
| | 401, A, B | 94006-01 | All | . |
| Business Liner | 402, A thru C | 94006-01 | All | . |
| Titan | 404 | 94001-01 | All | . |
| | 411, A | 94001-01 | All | . |
| Chancellor | 414, A | 94006-01 | All | . |
| Golden Eagle | 421, A thru, C | 94001-01 | All | . |

Note: (1) Denotes 1 ea. per engine. (2) Denotes 2 ea. per engine. All others require 4 engine

DEHAVILLAND

| Aircraft | | P/N | Engine | Price |
|-------------|-----------|----------|------------|-------|
| Common Name | Model | | | |
| Beaver | DHC-2 MK1 | MB100875 | P&W R985 | --- |
| Otter | DHC-3 | MB4040 | P&W R-1340 | --- |

PIPER

| Aircraft | | P/N | Engine | Price |
|-----------------|------------|------------------------------|----------------------------------|-------|
| Common Name | Model | | | |
| Cherokee 140 | PA28-140 | 94150-01 | *20002-24999 | . |
| | PA28-140 | 94011-02 (2) 94011-20 (2) | *25000-7125641 *25000-7125641 | . |
| | PA28-140 | 94011-02 (2) 94011-20 (2) | *7225001 & UP *7225001 & UP | . |
| Cherokee 150 | PA28-150 | 94150-01 | All | . |
| Cherokee 160 | PA28-160 | 94150-01 | All | . |
| Warrior | PA28-151 | 94011-02 (2) 94011-20 (2) | 0-320-E3-D All | . |
| Warrior | PA28-161 | 94011-02 (2) 94011-20 (2) | All All | . |
| Cherokee 180 | PA28-180 | 94150-01 | *1761-4377 | . |
| | PA28-180 | 94150-01 | *4378-5149 | . |
| Cherokee Six | PA32-300 | 94110-02 | *32-7240056 & UP | . |
| Archer | PA28-180 | 94011-20 | *5151 & UP | . |
| Archer II | PA28-181 | 94011-20 | All | . |
| Arrow | PA28R-180 | 94011-20 | *3000 & UP | . |
| | PA28R-200 | 94011-20 | *35001-7135329 IO-360-C1C | . |
| Arrow II | PA28R-200 | 94011-20 | *7235001 & UP | . |
| Turbo Arrow II | PA28R-201T | 94006-01 | TSIO-360-F, FB | . |
| Arrow III | PA28R-201 | 94011-20 | *7737002 & UP | . |
| Turbo Arrow III | PA28R-201T | 94006-01 | All | . |
| Dakota | PA28-236 | 94011-02 | *0-540-J3A5D | . |
| Comanche 250 | PA25-250 | 94110-01 | 0-540-A1A | . |
| Comanche 260 | PA24-260 | 94110-01 | IO-540-E or D4A5 | . |

EP

BARRY MOUNTS CONT. - ENGINE MOUNTS

PIPER CONT.

| Aircraft | | P/N | Engine | Price |
|----------------------|-----------------|--------------|-------------------|-------|
| Common Name | Model | | | |
| Comanche 400 | PA24-400 | 94011-04 | IO-720 | . |
| Cherokee Lance | PA32R-300 | 94110-02 | IO-540-K1G5D | . |
| Lance II | PA32RT-300 | 94110-02 | IO-540-K1G5 | . |
| Saratoga | PA32-301 | 94011-02 (2) | All | . |
| | | 94011-03 (2) | All | . |
| Saratoga S.P | PA32R-301 | 94011-02 (2) | All | . |
| | | 94011-03 (2) | All | . |
| Tomahawk | PA38-112 | 94150-01 | 0-235 | . |
| Brave | PA36-300 | 94110-02 | All | . |
| Pawnee 235 | PA25-235 | 94110-01 | All | . |
| Pawnee 260 | PA25-260 | 94110-01 | All | . |
| TWIN ENGINE AIRCRAFT | | | | |
| Apache 235 | PA23-235 | 94110-01 | 0-540-B1A5 | . |
| Aztec | PA23-250 | 94110-01 | 0-540, IO-540 | . |
| Aztec C. F | PA23-250 | 94011-02 | IO-540-C4B5, CIB5 | . |
| Twin Comanche | PA30 | 94011-03 | All | . |
| | PA39 | 94011-03 | All | . |
| Turbo Navajo | PA31 | 94011-02 | All | . |
| Navajo C/R | PA31-325 | 94011-02 | TIO-540-F2BD(L) | . |
| Navajo Chieftain | PA31-350 | 94011-02 | TIO-540-J2BD(L) | . |
| Seneca | PA34-200 | 94011-20 | All | . |
| Seneca II | PA34-200T | 94006-01 | All | . |
| Seneca III | PA34-220T | 94006-01 | All | . |
| Seminole | PA44-180 | 94011-20 | All | . |
| Turbo Seminole | PA44-180T | 94011-20 | All | . |
| Aeorstar | PA60-700P | 94011-40 | All | . |
| | PA60-600, 601 | 94011-01 | All | . |
| | PA60-601P, 602P | 94011-01 | All | . |

Note: (1) Denotes 1ea. per engine. (2) Denotes 2 ea. per engine. All others require 4 engine * AIRCRAFT SERIAL NUMBERS

MAULE

| Aircraft | | P/N | Engine | Price |
|--------------------|----------------------|----------|------------------|-------|
| Common Name | Model | | | |
| Rocket | M-4-210, C, S, T | 94016-01 | | . |
| | M-5-210C | 94016-01 | | . |
| | M-5-235, C | 94016-02 | | . |
| | M-6-235 | 94016-02 | | . |
| Orion/Super Rocket | M-7-235/260, M-8-235 | 94016-02 | 0-540-J/10-540-J | . |

MOONEY

| Aircraft | | P/N | Engine | Price |
|---------------------|-------------------|----------|----------------|-------|
| Common Name | Model | | | |
| PFM | M20L | 95167-01 | Porche | . |
| Chaparral | M20E 1964 Only | 94150-01 | 0-360-A1A | . |
| Chaparral(Super 21) | M20E 1965 & Newer | 94011-02 | IO-360-A1A | . |
| Executive | M20F | 94011-02 | IO-360-A1A | . |
| 201 | M20J | 94011-20 | | . |
| 231 | M20K | 94006-01 | TSIO-360 | . |
| | CAP231 | 94016-44 | ALL | . |
| | M20A | 94150-40 | 0-360-A1A, D | . |
| | M20A | 94150-01 | 0-360-A1A | . |
| Master | M20D | 94150-40 | 0-360-A1D, A2D | . |
| Ranger | M20B | 94150-40 | 0-360-A1A, D | . |
| Ranger Mark 21 | M20C | 94150-40 | 0-360-A1A, D | . |
| Statesmen | M20G | 94150-40 | IO-360-A1D | . |

LANCAIR

| Aircraft | | P/N | Engine | Price |
|-------------|-------|---------------|------------------|-------|
| Common Name | Model | | | |
| Lancair | 235 | 94150-41 | 0-235 | . |
| Lancair | 320 | 94150-41 | 0-320 | . |
| Lancair | 360 | 94150-41 | 0-320, 0-360 | . |
| Lancair | 4 | 94001-01, (2) | TIO-550, TIO-520 | . |
| | | 94011-20, (2) | TIO-550, TIO-520 | . |
| Lancair | ES | 94017-01 | All | . |
| Columbia | 300 | 94001-01 | IO-550 | . |

Note: (1) Denotes 1ea. per engine. (2) Denotes 2 ea. per engine. All others require 4 engine

SAI MARCHETTI

| Aircraft | | P/N | Engine | Price |
|-------------|-------|----------|--------|-------|
| Common Name | Model | | | |
| | F260 | 94110-01 | All | . |
| | S208 | 94110-01 | All | . |

SOGATA

| Aircraft | | P/N | Engine | Price |
|-------------|---------|----------|------------|-------|
| Common Name | Model | | | |
| Rallye | 235C, E | 94011-20 | 0-540-B4B5 | . |



BARRY MOUNT FOR VANS AEROBATIC AIRCRAFT

Barry Controls is a manufacturer of many aircraft engine mounts of both experimental and certified types. They also manufacture engine mounts for experimental and kit airplanes of various makes and models. Please call or visit our website for application information.
P/N 94016-08.....



DYNAFOCAL ENGINE MOUNT RINGS & KITS

Standard rings furnished with 2-3/4" I.D. retainers, completely welded, ready for mount assembly. The Dynafocal ring kits contain all tubing cut and bent, with 2-3/4" I.D. retainers, ready to weld.

Dynafocal Ring for Lyc. 0-235 to IO-360 (200 HP)..... P/N 33521.....
Dynafocal Ring for Lycoming 0-320B..... P/N 33521-B.....
Dynafocal Ring Kit for Lyc. 0-235 to IO-360 (200 HP) . P/N 33522.....
Retainer Cups & Rings Kit P/N 33253.....
(includes 8 cups & 4 rings - everything in #33522 kit above except the tubing)
Engine mount ring for most Lyc. IO-540's.....P/N 08-00795.....

VIP ENGINE MOUNTS FOR EXPERIMENTAL AIRCRAFT

| Spruce P/N | Lord Equiv. | Barry Equiv | Price ea. |
|------------|-------------|-------------|-----------|
| 08-00774 | J9613-49 | 94110-20 | . |
| 08-00776 | J15198-1 | - - - | . |



SANDWICH MOUNTS FOR HOMEBUILT AIRCRAFT

Sandwich assemblies of natural rubber and specially blended synthetic compounds bonded to 2 metal plates. Normal installation requires 4 assemblies, each consisting of 2 sandwich mountings and 1 spacer. Satisfactory performance requires that the spacer be designed to the correct length to precompress each mounting to guarantee proper positioning of the mountings. Set consists of eight bonded sandwich mountings equivalent to Lord Mount No. J-7402-5 (2" Dia.) and four 4130 steel spacers with mounted rubber shoulder. Use with dynafocal engine mount rings using 2-3/4" I.D. retainer cups. Used on many homebuilts including the Defiant and Long-EZP/N 08-03500.....

SPECIAL HEAVY DUTY MOUNT SETS



Designed for use on aerobatic aircraft such as Christen Eagle and Acro. Same style as homebuilt type but inner core has been "beefed up" and elastomers added to encapsulate the spacer. 2-inch diameter. Set of 8 Mountings

Note: Mounting hole is 7/16" and requires AN7 bolts for installation.
50401-300 w/4 SpacersP/N 08-03600.....
DISCOUNT: LESS 10% ON 6 SETS, 15% ON 10 SETS, 20% ON 20 SETS



LORD MOUNTS FOR COZY ENGINE MOUNT

These Lord J-7402-24 mounts fit the engine mount for Lyc. 0-360 manufactured by CG Parts.....P/N 07-01115.....



912/914 ROTAX RING MOUNT

This ring mount for Rotax 912/914 engines is 4130 chrome-moly construction, powder coated, and fits all 912 and 914 engines. Not FAA approved, but built using the same processes and quality control required for certified parts. Standard color is white. Options include additional clearance for a 12-volt high-amp starter cable connection and powder coating in other colors. The mount is furnished with installation instructions and the required shim washers recommended by Rotax. Mounting hardware is not included.



Rotax 912/914 (WHITE)
P/N 08-07113.....
Rotax 912/914 Special Color
P/N 08-07152.....
Starter cable clearance option
P/N 08-07153.....

LORD ENGINE MOUNTS

LORD ELASTOMERIC ENGINE MOUNTS



These compression type couplings consist of bonded rubber joints pressed into the sockets of metal hubs. These dynafocal engine suspensions provide proper flexible support to isolate engine vibrations and reduce noise transmission to airframe structure in all aircraft applications. Careful design assures maximum strength to hold the engine under ultimate load and emergency conditions. Suspensions also distribute loads in most desirable patterns, control engine motions, accommodate thermal expansion and manufacturers' tolerances.

PROMPT SHIPPING GUARANTEED! IF YOU REQUIRE UNLISTED LORD MOUNTS, PLEASE CALL US FOR YOUR BEST PRICE. WE BEAT ALL COMPETITOR'S PRICES! LET US KNOW OF ANY LOWER PRICE AND WE WILL BEAT IT!

| Aircraft Model | Application/Engine | No. per A/C | Part No. | Price Each | Aircraft Model | Application/Engine | No. per A/C | Part No. | Price Each |
|---|--|-------------|--------------|------------|-------------------|---------------------|-------------|-----------|------------|
| AVIAT | | | | | BELLANCA | | | | |
| A-1 | Lyc. O-360-C1G/A1P | 8 | J-1552 | . | 17-31, 17-31A | Lyc. IO-540-K | 4 | J-9868-5 | . |
| S-1 | Lyc. O-320 | 8 | J-7401-2 | . | 17-31A | Lyc. IO-540-KIE5 | 4 | J-9868-5 | . |
| S-1S, -2A | Lyc. O-360-B4A, A1P | 8 | J-7401-2 | . | 17-31TC, 17-31ATC | Lyc. IO540-G, K | 4 | J-9868-5 | . |
| BEECHCRAFT | | | | | 7ACA | Franklin 2A-120A, B | 8 | J-3608-1 | . |
| 19 | Lyc. O-320-E2C | 4 | J-7402-16 | . | 7ECA | Cont. O-200-A | 8 | J-3608-1 | . |
| B19, M19A | Lyc. O-320-E2D | 4 | J-7402-16 | . | 7ECA | Lyc. O-235-C1 | 4 | J-6230-1 | . |
| 23 | Lyc. O-360-A4G | 4 | J-7402-16 | . | 7GCAA, 7GCBC | Lyc. O-320-A2B | 4 | J-6230-1 | . |
| 23 | Cont. IO-346-A | 4 | J-10778-4 | . | 7GCAA, 7GCBC | Lyc. O-320-A2D | 4 | J-6230-1 | . |
| A23-24 | Lyc. IO-360-A2B | 4 | J-10778-4 | . | 7KCAB | Lyc. O-320-E2A | 4 | J-6230-1 | . |
| C-23 | Lyc. O-360-A4K | 4 | J-7402-16 | . | 7KCA | Franklin 2A-120A, B | 8 | J-3608-1 | . |
| 24, A24, A24R, B24R | Lyc. IO-360-A2B | 2 ea* | J-10778-14 | . | 8GCBC-CS | Lyc. O-360-C1E | 4 | J-6230-1 | . |
| C-24R | Lyc. IO-360-A1B6 | 2 ea* | J-10778-16 | . | 8GCBC-FP | Lyc. O-360-C2E | 4 | J-6230-1 | . |
| B33, C33 | Cont. IO-470-K | 4 | J-7518-2 | . | 8GCBC | Lyc. O-360-C2E | 4 | J-6230-1 | . |
| C33A | Cont. IO-520-B | 4 | J-10520-1 | . | 8KCAB | Lyc. IO-320-E1A | 4 | J-6230-1 | . |
| E33, F33 | Cont. IO-470-K | 4 | J-7518-2 | . | 8KCAB-CS | Lyc. AEIO-320-E1B | 4 | J-6230-1 | . |
| E33A/C, F33A/C | Cont. IO-520-BB | 4 | J-10520-1 | . | 8KCAB-FP | Lyc. AEIO-320-E2B | 4 | J-6230-1 | . |
| G33 | Cont. IO-470-N | 4 | J-10520-1 | . | 8KCAB-180 | Lyc. AEIO-360-H1A | 4 | J-6230-1 | . |
| 35, A35, B35 | Cont. E185-8 | 8 | J-2245-1 | . | CESSNA | | | | |
| C35, D35, E35, F35 | Cont. E185-11 | 4 | J-3804-26 | . | 120-140 | Cont. C-85 | 8 | J-3608-1 | . |
| E35, F35, G35 | Cont. E225-8 | 4 | J-3804-26 | . | 140A | Cont. C-90 | 8 | J-3608-1 | . |
| H35 | Cont. O-470-G | 4 | J-7518-2 | . | 150, 150A-L | Cont. O-200-A | 8 | J-3608-1 | . |
| J35, K35, M35 | Cont. IO470-C | 4 | J-7518-2 | . | 152, 152 Aerobat | Lyc. O-235-L2C | 4 | J-7402-1 | . |
| N35, P35 | Cont. IO-470-N or-C | 4 | J-7518-2 | . | 170, 170A, B | Cont. C-145 | 4 | H-3006-1 | . |
| S35, T35, V35, V35A, B | Cont. IO-520-BB | 4 | J-10520-1 | . | 170B | Cont. O-300-A | 4 | H-3006-1 | . |
| 36, A-36 | Cont. IO-520-BB | 4 | J-10520-1 | . | 172 | Cont. O-300-A | 4 | H-3006-1 | . |
| A36TC | Cont. TSIO-520-UB | 4 | J-10520-1 | . | 172A | Cont. O-300-C | 4 | H-3006-1 | . |
| V35A-TC | Cont. TSIO-520-D | 4 | J-10520-1 | . | 172 B-H | Cont. O-300-C, D | 4 | H-3006-1 | . |
| B50 | Lyc. GO-435-C2/C2E | 8 | J-3804-10 | . | 172 I-P | Lyc. O-320-E2D | 4 | J-9613-49 | . |
| C50 | Lyc. GO-480-F1A6 | 8 | J-3804-10 | . | 172P | Cowl Mount | -- | J-7444-14 | . |
| D50, D50B/C/E | Lyc. GO-480-G2F6 | 4 | J-3804-10 | . | F172P | Cowl Mount | -- | J-7444-14 | . |
| E50, F50, G50, H50 | Lyc. GSO-480-B1B6 | 4 | Use J-7525-1 | . | F172P | Cowl Mount | -- | J-7444-24 | . |
| G50, G50, J50 | Lyc. IGSO-480-A1B6 | 4 | & J-6545-1 | . | F172 | Cowl Mount | -- | J-7444-36 | . |
| 55, A55, B55 | Cont. IO-470-L | 8 | J-7518-2 | . | 172 | Lyc. O-320-D2J | 4 | J-9613-49 | . |
| 55, A55, B55, B55A | Cont. IO-470-L | 8 | J-9613-5 | . | 172N | Lyc. O-320-H2AD | 4 | J-9613-49 | . |
| C55(1967), D55, | | | | . | 172 | Cont. IO-360-K | 4 | J-9613-42 | . |
| D55A, E55, E55A | Cont. IO-520-CB | 8 | J-10778-16 | . | 172RG | Lyc. O-360-A1F6 | 2 ea* | J-9613-49 | . |
| 56TC, A56TC | Lyc. TIO-541-E1B4 | 8 | J-9613-9 | . | | | | J-9613-72 | . |
| 58 | Cont. IO-520-CB | 8 | J-10778-16 | . | 172Q | Lyc. O-360-AL/N | 2 ea* | J-9613-49 | . |
| 58 (1984-on) | Cont. IO-550-C | 8 | J-10778-16 | . | | | | J-9613-72 | . |
| 58P | Cont. TSIO-520-L/-LB | 8 | J-12453-12 | . | 172P, Q | Cowl Mount | -- | J-7444-24 | . |
| 58P | Cont. TSIO-520-WB | 8 | J-12453-12 | . | 172 | Cowl Mount | -- | J-7444-36 | . |
| 58TC | Cont. TSIO-520-L/-LB | 8 | J-12453-12 | . | P172 | Cont. GO-300-E | 4 | J-6545-1 | . |
| 58TC | Cont. TSIO-520-WB | 8 | J-12453-12 | . | R172E, K | Cont. IO-360-D | 4 | J-9613-42 | . |
| 60, B60 | Lyc. TIO-541-E1C4 | 8 | J-9613-9 | . | 175 | Cont. GO-300-A | 4 | J-6545-1 | . |
| 65, A65, 70 | Lyc. IGSO-480-A1E6 | 4 | J-7525-1 | . | 175A, B | Cont. GO-300-C, D | 4 | J-6545-1 | . |
| | | 4 | J-6545-1 | . | 175C | Cont. GO-300-E | 4 | J-6545-1 | . |
| 76TC | Lyc. TO-360-CIA6D | 2 ea* | J-9613-49 | . | 177 | Lyc. O-320-E2D | 4 | J-9613-49 | . |
| 76 | Lyc. O-360-AIG6D | 2 ea* | J-9613-50 | . | 177A | Lyc. O-360-A2F | 4 | J-9613-49 | . |
| 77 | Lyc. O-235-L2C | 4 | J-7402-1 | . | 177B | Lyc. O-360-A1F6D | 4 | J-9613-49 | . |
| 80, A80, B80, 88 | Lyc. IGSO-540-AID | 4 | J-7525-1 & | . | 177RG | Lyc. IO-360-A1B6 | 4 | J-9613-59 | . |
| | | 4 | J-6545-1 | . | 180 | Cont. O-470-A, J | 2 ea* | J-3804-14 | . |
| C90, C90A | PWC PT6A-21 | 6 | LM427SA7 | . | | | | J-3804-15 | . |
| E90, F90 | PWC PT6A-28, -135, -135A | 6 | LM427SA7 | . | 180 | Cont. O-470-K | 4 | J-6545-1 | . |
| H90 | PWC PT6A-34B | 6 | LM427SA7 | . | 180A-H | Cont. O-470-K, R | 4 | J-6545-1 | . |
| 95, 95A, 95B | Lyc. IO-360-B1B | 8 | J-7402-1 | . | 180H, J | Cont. O-470-R, U | 4 | J-6545-1 | . |
| D95A, E95 | Lyc. IO-360-B1B | 8 | J-7402-1 | . | 182, 182A-R | Cont. O-470-R, U | 4 | J-6545-1 | . |
| A100 | PWC PT6A-28 | 6 | LM427SA7 | . | 182, 182A-N | Accessory Mount | -- | J-14290-4 | . |
| B100 | GA TPE331-6-252B | 4&2* | LM821SA49 | . | 182H-N | Panel Mount | -- | J-6984-64 | . |
| | | | LM821SA50 | . | T182 | Lyc. O-540-L3C5D | 4 | J-9613-12 | . |
| 200, 200C, 200CT | PWC PT6A-41 | 8 | LM427SA7 | . | TR182 | Lyc. O-540-L3C5D | 4 | J-9613-12 | . |
| A200/C/CT | PWC PT6A-41 | 8 | LM427SA7 | . | 185, 185A-E | Cont. IO-470-F | 4 | J-6545-1 | . |
| B200 | PWC PT6A-42 | 8 | LM427SA7 | . | 185 | Cont. IO-520-D | 4 | J-6545-1 | . |
| C90, E90, C99, 200C /CT, A200C/CT, B200C/CT/T | Overhaul kit for Barry Controls P/N5906-2SA5 | 8 | LM427SA12 | . | A185F | Cont. IO-520-D | 4 | J-6545-1 | . |
| | | | | . | 188 | Cont. O-470-R | 4 | J-6545-1 | . |
| | | | | . | 188 | Cont. IO-520-D | 4 | J-6545-1 | . |

NOTE: * indicates more than one Lord Part No. needed



LORD ENGINE MOUNTS

| Aircraft Model | Application / Engine | No. per A/C | Part No. | Price Ea. |
|-------------------------------|----------------------------|-------------|-----------|-----------|
| CESSNA cont. | | | | |
| 188 | Cont. IO-520-D | 2 ea* | J15198-1 | . |
| 188A, 188B | Cont. IO-520-D | 2 ea* | J15198-2 | . |
| 205, 205A | Cont. O-360-B4A | 4 | J-6545-1 | . |
| 206, 206A | Cont. IO-520A | 2 ea* | | . |
| 206B | Cont. IO-520F | 2 ea* | J12453-1 | . |
| U206T | Cont. TSIO-520C | 2 ea* | J12453-2 | . |
| U206 | Cont. IO-520F | 2 ea* | | . |
| U206 A, F | Panel Mount | -- | J-6984-64 | . |
| U206G | Cont. IO-520-F | 2 ea* | | . |
| TU206A-F | Cont. TSIO-520-C | 2 ea* | | . |
| T206G | Cont. TSIO-520-M | 2 ea* | | . |
| P206, P206A-F | Cont. IO-520-A | 2 ea* | J12453-1 | . |
| P206T, P206T A-E | Cont. TSIO-520-C | 2 ea* | J12453-2 | . |
| 207, 207A | Cont. IO-520-F | 2 ea* | | . |
| 207A II | Cont. IO-520-F | 2 ea* | | . |
| 207T | Cont. TSIO-520-G | 2 ea* | | . |
| T207A, T20A II | Cont. TSIO-520-M | 2 ea* | | . |
| 210, 210A-C | Cont. IO-470-E, S | 4 | J-6545-1 | . |
| 210 D-J | Cont. IO-520-A, J | 2 ea.* | J-12453-1 | . |
| 210 K-R | Cont. IO-520-L | 2 ea* | J-12453-2 | . |
| 210 K, L | Panel Mount | -- | J-6984-64 | . |
| T210M, N | Cont. TSIO-520-R | 2/1/1* | | . |
| T210 F-L | Cont. TSIO-520-C, H | 2 ea.* | J-12453-1 | . |
| P210M, N | Cont. TSIO-520-AF, P | 2/1/1* | J-12453-2 | . |
| T210R (1985-86) | Cont. TSIO-520-CE | 4/2* | | . |
| P210 R (1985-86) | Cont. TSIO-520-CE | 4/2* | | . |
| 310B | Cont. O-470-M | 8 | J-6545-1 | . |
| 310C-H | Cont. IO-470-D | 8 | J-12390-1 | . |
| 310JQ | Cont. IO-470-U, V, VO | 8 | J-12390-1 | . |
| 310R | Cont. IO-520-M, MB | 8 | J-9613-58 | . |
| T310 P, Q, R | Cont. TSIO-520-B, BB | 8 | J-9613-58 | . |
| 320, 320A-C | Cont. TSIO-470-B, D | 8 | J-7764-4 | . |
| 320 D-F | Cont. TSIO-520-B, BB | 8 | J-9613-58 | . |
| 337, 337A-H | Cont. IO-360-C, D, G | 8 | J-9613-58 | . |
| T337B-G | Cont. TSIO-360-A, H | 8 | J-9613-31 | . |
| P337H | Cont. TSIO-360-C, CB | 8 | J-9613-31 | . |
| 340 | Cont. TSIO-520-K, KB | 8 | J-9613-58 | . |
| 340A | Cont. TSIO-520-NB | 8 | J-9613-58 | . |
| 401, 401A, B | Cont. TSIO-520-E, EB | 8 | J-9613-58 | . |
| 402, 402A, B | Cont. TSIO-520-E, EB | 8 | J-9613-58 | . |
| 402C | Cont. TSIO-520-VB | 8 | J-9613-58 | . |
| 404 | Cont. GTSIO-520-M | 8 | J-9613-54 | . |
| 411, 411A | Cont. GTSIO-520-C | 8 | J-9613-54 | . |
| 414, 414A | Cont. TSIO-520-J, NB | 8 | J-9613-58 | . |
| 421, A, B | Cont. GTSIO-520-D, H | 8 | J-9613-54 | . |
| 421C | Cont. GTSIO-520-L, N | 8 | J-9613-54 | . |
| COMMANDER AIRCRAFT CO. | | | | |
| 112, 112B | Lyc. O-360-C1D6 | 2 ea.* | J-9613-40 | . |
| 112T, TCA | Lyc. IO-360-C1A6D | 2 ea.* | J-9613-53 | . |
| 114 | Lyc. IO-540-T4A5D | 4 | J-3804-28 | . |
| GRUMMAN AMERICAN | | | | |
| AA-1 | Lyc. O-235-C2C | 8 | J-6113-5 | . |
| AA-1A, B | Lyc. O-235-C2C | 8 | J-6113-5 | . |
| AA-1C (Tomcat) | Lyc. O-235-L2C | 4 | J-7402-24 | . |
| AA-1C (Lynx) | Lyc. O-235-L2C | 4 | J-7402-24 | . |
| AA-5 | Lyc. O-320-32G | 4 | J-7402-24 | . |
| AA-5A | Lyc. O-320-32G | 4 | J-7402-24 | . |
| AA-5B (S/N 1-399) | Lyc. O-360-A4K | 4 | J-9613-49 | . |
| AA-5B, AG-5B | Lyc. O-360-A4K | 4 | J-9613-59 | . |
| MOONEY AIRCRAFT | | | | |
| M20 | Lyc. O-320 | 4 | J-6230-1 | . |
| M20A (1958-1960) | Lyc. O-360 | 4 | J-7402-16 | . |
| M20B (S/N1701-1939) | Lyc. O-360-A1D | 4 | J-7402-1 | . |
| M20C(S/ N1940-20-1258) | Lyc. O-360-A1D | 4 | J-7402-1 | . |
| M20D (S/N101-260) | Lyc. O-360-A2D | 4 | J-7402-1 | . |
| M20E (S/N101-470) | Lyc. O-360-A1A | 4 | J-7402-16 | . |
| M20E (1969-75) | Lyc. O-360-A1A | 4 | J-9613-12 | . |
| M20F (1966-77) | Lyc. O-360-A1A | 4 | J-9613-12 | . |
| M20G (1968-70) | Lyc. O-360-A1D | 4 | J-7402-1 | . |
| M22 (1966-70) | Lyc. TIO-541-A1A | 4 | J-10520-1 | . |
| M20J (1976-up) | Lyc. IO-360-A3B6D | 4 | J-9613-40 | . |
| M20K (1979-85) | Cont. TSIO-360-GB1 | 4 | J-9613-58 | . |
| M20K (1979-85) | Cont. TSIO-360-GB3 | 1/3* | J-9613-75 | . |
| M20K (1979-85) | Cont. TSIO-360-GB4 | 1/3* | and | . |
| M20K (1979-85) | Cont. TSIO-360-LB1B | 1/3* | J-9613-76 | . |
| M20K (1986-up) | Cont. TSIO-360-MB1 | 1/3* | | . |
| NAVION AIRCRAFT | | | | |
| G, H | Cont. IO-470-H or IO-520-B | 4 | J-7518-4 | . |
| PIPER | | | | |
| PA-23 | Lyc. O-320-D2 | 8 | J-6230-1 | . |
| PA-23-160 | Lyc. O-320-B | 8 | J-6230-1 | . |

| | | | | |
|-------------------------|------------------------------------|--------|-------------|---|
| PA-23-235 | Lyc. OI-540-B1A5 | 8 | J-3804-20 | . |
| PA-23-250 | Lyc. O-540-A1B5, A1D5 | 8 | J-3804-20 | . |
| PA-23-250 (6) | Lyc. IO-540-C1B5, A1D5 | 8 | J-3804-20 | . |
| PA-23-250 (6) | Lyc. IO-540-C4B5 | 8 | J-9613-12 | . |
| PA-23-250 (6) | Lyc. IO-540-J4A5 | 8 | J-9613-12 | . |
| PA-23-250 | Lyc. IO-540-C4B5 | 8 | J-9613-12 | . |
| PA-23-250T | Lyc. TIO-540-C1A | 8 | J-9613-12 | . |
| PA-24-180 | Lyc. O-360-A1A | 4 | J-7402-5 | . |
| PA-24-250 | Lyc. O-540-C1B5, A1A | 4 | J-3804-20 | . |
| PA-24-260 | Lyc. IO-540-E4A5, D4A5 | 4 | J-3804-20 | . |
| PA-24-260 | Lyc. IO-540-N1A5 | 4 | J-3804-30 | . |
| PA-24-400 | Lyc. IO-720-A1A, A1B | 2 ea. | J-9613-9 | . |
| PA-25-235 | Lyc. O-540-B2C5, B2B5 | 4 | J-3804-20 | . |
| PA-25-260 | Lyc. O-540-E4 | 4 | J-3804-20 | . |
| PA-28-140 | Lyc. O-320-E2A | 4 | J-7402-16 | . |
| PA-28-140 | Lyc. O-320-E2A | 2 | J-9613-40 | . |
| PA-28-140 | Lyc. O-320-E3D | 2 ea.* | J-9613-40 | . |
| PA-28-150 | Lyc. O-320-A2B | 4 | J-7402-16 | . |
| PA-28-150 | Lyc. O-320-A2B* | 4 | J-7402-24 | . |
| PA-28-150 | Lyc. O-320-E2A | 4 | J-7402-16 | . |
| PA-28-151 | Lyc. O-320-E3D | 2 ea.* | J-9613-40 | . |
| PA-28-160 | Lyc. O-320-B2B | 4 | J-7402-16 | . |
| PA-28-160 | Lyc. O-320-D2A** | 4 | J-7402-16 | . |
| PA-28-160 | Lyc. O-320-D2A | 4 | J-7402-24 | . |
| PA-28-161 | Lyc. O-320-D3G | 2 ea.* | J-9613-40 | . |
| PA-28-180 | Lyc. O-360-A3A | 4 | J-7402-24 | . |
| PA-28-180 | Lyc. O-360-A4A | 4 | J-7402-24 | . |
| PA-28-180 | Lyc. O-360-A4A, M*** | 4 | J-9613-40 | . |
| PA-28R-180 | Lyc. O-360-B1F | 4 | J-9613-40 | . |
| PA-28-181 | Lyc. O-360-A4M | 4 | J-9613-40 | . |
| PA-28R-200 | Lyc. IO-360-C1C | 4 | J-9613-40 | . |
| PA-28R-201 | Lyc. IO-360-C1C, C1C6 | 4 | J-9613-40 | . |
| PA-28R-201T | Cont. TSIO-360-F, FB | 4 | J-9613-58 | . |
| PA-28-235 | Lyc. O-540-B2B5 | 4 | J-3804-20 | . |
| PA-28-235 | Lyc. O-540-B1B5 | 4 | J-7402-20 | . |
| PA-28-235 | Lyc. O-540-B4B5 | 4 | J-7402-20 | . |
| PA-28-235 | Lyc. O-540-B4B5**** | 4 | J-3804-27 | . |
| PA-28-236 | Lyc. O-540-J3A5D | 4 | J-9613-12 | . |
| PA-30 | Lyc. IO-320-B1A1C1A | 8 | J-9613-19 | . |
| PA-31 | Lyc. TIO-540-A1A, or A1B, A2C, A2B | 8 | J-9613-12 | . |
| PA-31-310 | Lyc. TIO-540-A2C | 8 | J-9613-12 | . |
| PA-31-325 | Lyc. L/ TIO-540-F2BD | 8 | J-9613-12 | . |
| PA-31-350 | Lyc. L/ TIO-540-J2BD | 8 | J-9613-29 | . |
| PA-31P-350 | Lyc. TIO-540-V2AD | -- | J-9613-53 | . |
| PA-31T-1, -500 | PWC PT6A-11 | 6 | LM-423-SA1 | . |
| PA-31T-620 | PWC PT6A-28, 135 | 4 | LM-423-SA1 | . |
| PA-31T-620XL, -31T2 | | 2 | LM-423-SA2 | . |
| PA-32-260 | Lyc. O-540-E4B5 | 4 | J-7402-20 | . |
| PA-32-260 (s/n 570-up) | Lyc. O-540-E4B5 | 4 | J-3804-27 | . |
| PA-32-300 | Lyc. IO-540-K1A5 | 4 | J-3804-27 | . |
| PA-32-300 | Lyc. IO-540-K1G5, K1A5 | 4 | J-3804-40 | . |
| PA-32R-300 | Lyc. IO-540-K1G5D | 4 | J-3804-31 | . |
| PA-32R-300 (s/n 141-up) | Lyc. IO-540-K1G5D | 4 | J-3804-40 | . |
| PA-32RT-300 | Lyc. IO-540-K1G5 | 2 ea. | J-3804-40 | . |
| PA-32RT-300T | Lyc. TIO-540-51AD | 2 ea. | J-3804-37& | . |
| PA-32-301 | Lyc. IO-540-K1G5D | 2 ea. | J-9613-19 & | . |
| PA-32R-301 | Lyc. IO-540-K1G5D | 2 ea. | J-9613-12 | . |
| PA-32-301T | Lyc. TIO-540-S1AD | 2 ea. | J-9613-19 & | . |
| PA-32R-301T | Lyc. TIO-540-S1AD | 2 ea. | J-9613-55 | . |
| PA-34-200 | Lyc. L/ IO-360-C1E6 | 8 | J-9613-40 | . |
| PA-34-200, 200T | Cont. TSIO-360-E, EB | 8 | J-9613-58 | . |
| PA-34-220T | Cont. L/ TSIO-360-KB | 4 | J-9613-58 | . |
| PA-36-285 | Cont. 6-285 | 4 | J-14090-7 | . |
| PA-36-300 | Lyc. IO-540-K1G5 | 4 | J-3804-31 | . |
| PA-38-112 | Lyc. O-235L2C | 4 | J-7402-16 | . |
| PA39 | Lyc. IO-320-B1AC1A | 8 | J-9613-19 | . |
| PA-44-180 | Lyc. O-360-E1A6D | 8 | J-9613-40 | . |
| PA-44-180T | Lyc. TIO-360-E1A6D | 8 | J-9613-40 | . |
| PA-46-310P | Cont. TSIO-520-BE | 4 | J-9613-55 | . |
| PA-46-350P | Lyc. TIO-540-AE2A | 8 | J-9613-55 | . |
| PA-60-360 | Lyc. IO-360-E1A | 8 | J-9613-12 | . |
| PA-60-600A | Lyc. IO-540-K1F5 | 8 | J-9613-9 | . |
| PA-60-600B | Lyc. IO-540S1A5 | 8 | J-9613-9 | . |
| PA-60-601P | Lyc. IO-540S1A5 | 8 | J-9613-9 | . |

LOCKING TAB WASHER - Used to lock mounting bolts to Lord Mounts. This Continental P/N 501867 is similar to Cessna P/N 08-51559-1. P/N 08-50186-7 ea.

COWL MOUNTS

Cessna150,172,177 P/N J-7444-14
Cessna 182 P/N J-7444-24.....

NOTE: * indicates more than one Lord Part No. needed

HEAT BOXES – EXHAUST COMPONENTS

WARM/COOL AIR SELECTOR/MIXER



This unit has not only the capability of providing warm air to the cockpit, but also cool air, or both. There are two parts to the unit. The "T" section (engine side of firewall) has a flapper to direct cool air from one side and/or warm from the other side. This section is designed to be riveted or bolted to the firewall. The short expanded section slips over the protruding tube and is clamped with a stainless steel hose clamp. The flap in this section closes off all air from the unit. The hose clamp, a gasket and 4 stainless steel blind rivets are furnished. The shafts, arms, and flapper valves

are all stainless steel. The bushings are brass and the tubing is 2" O.D. 6061-T4. Weight: 5.2 oz. P/N 08-00629..... ea.

DELUXE HOMEBUILDER'S CABIN HEAT BOX



This cabin box is a modification of our popular standard heat box. Re-engineered as a one-piece unit with two tube-end outlets, rather than one tube-end outlet and one flush outlet; it is smooth, efficient and very light. Originally designed for use on the popular RV series of aircraft, it is applicable to most homebuilts. They are constructed of aircraft grade aluminum and weigh only 5.5 oz. The new design

enables the cabin box to be more easily mounted to the forward face of the firewall with the 2" outside diameter outlet tube extending through the firewall; and is useful in ducting hot exhaust air out of the plenum area. (Both the inlet and outlet tubes are 2" outside diameter.) The outlet tubes are designed to accept a 2" inside diameter "Y" tube for leak-free ducting of warm air to more than one location. Cabin boxes are furnished with a gasket and four LP4-3 pop rivets for installation on the firewall. Superior craftsmanship and quality.

P/N 08-04005.....

Also available: Identical to the regular deluxe cabin heat box P/N 08-04005 with these exceptions: •Stainless steel mounting surface, box to firewall •Steel shaft and stainless flapper.

Extra protection in case of high temperatures, no smoke or flame could reach the cabin area through the cabin heat box.

Box with 2" outlets..... P/N 08-04010.....
Box with 2.5" inlet & outlet w/ 2" dump tube. P/N 08-04015.....

DELUXE HOMEBUILDER'S CABIN HEAT BOX – ALL STAINLESS

This cabin heat box is identical to the Deluxe Homebuilder's Cabin Heat Box except that the tubing that goes through the firewall and the mounting flange are also stainless steel for extra protection from fire. Features one inlet (2"O.D.) & two outlets (2"O.D.). All stainless except bushings.

P/N 08-04025..... ea.

CARBURETOR HEAT BOX FOR ELLISON TBI



The carburetor heat box and air grid are designed specifically for the Air Grid TBI to eliminate carburetor icing problems. There must always be a constant flow of air through a heat muff. The carburetor heat box has an automatic dump of hot air when carb heat is not being used, thereby eliminating the chance of heat muff burnout. The box has a 2.5" inlet for ram air and a 2" inlet for carb heat. The box is made of 5052 aluminum, stainless steel and 6061-T4 tube. The mounting surfaces, shaft, flapper, arm and rivets are stainless. In

addition, the box is strengthened in the mounting hole area to eliminate the possibility of metal fatigue. A 4" inspection/ mounting hole with a cover plate secured by nut plates and screws is located on the bottom of the box (not visible in the photo.) The purpose of the air grid is to eliminate air flow turbulence. The 1/2" stainless steel vanes straighten the air before it reaches the throat of the carburetor and achieves better air/fuel distribution. This is a proven performance enhancement technique.

Carburetor Heat Box..... P/N 08-00813
Air Grid (w/one gasket)..... P/N 08-00814
Extra Gaskets..... P/N 08-00815

HOMEBUILDERS CABIN HEAT SHUTTLE KIT



Easily assembled and designed so that it can be modified for custom applications. Kit includes construction plans and directions along with installation hints for the popular Vans RV series of homebuilt aircraft. Controlled by ratchet type control cable such as ACS model A740 (P/N 05-12500). Order control cable separately.

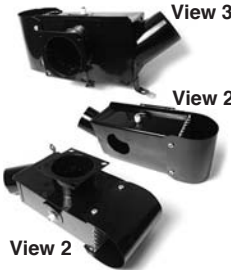
P/N 08-04460.....

HOMEBUILDER'S CABIN HEAT BOX



This cabin box has been engineered to be the smoothest, most efficient and lightest heat box built. Fabricated from aircraft-grade aluminum with stainless steel shaft, arm and flapper. Originally designed for use on the popular RV-4 homebuilt, but is applicable to most other designs. Total weight is only 5.2 oz. Furnished with a gasket flange for the forward side of the firewall for leak-free ducting of warm air to anywhere the builder wants it. Inlet and outlet are 2" OD 6061-T4 seamless aluminum. The body of the box is constructed of 5052-032 aluminum. Can be either riveted or bolted to the firewall of aircraft. The mounting flanges have holes for both bolts and rivets. The outlet tube extends through the firewall so that scat tubing can be attached to route the warm air. 4 stainless steel blind rivets and a mounting gasket are furnished. Superior craftsmanship and quality.

P/N 08-04000..... ea.



VAGABOND CARB HEAT BOX

This air grid carburetor heat box designed to fit the Piper PA-15 Vagabond. Dimension: 11" x 3-1/2" x 4"

P/N 08-06290.....

TUBING CONNECTORS

2" ALUMINUM FLANGE - Accepts 2" scat tube. Flange allows riveting to firewall, baffles, etc. Wt: 0.2 oz.

P/N 08-04135.....

CARB HEAT CONNECTOR - Mounts on FAB airbox or similar airbox. Flange accepts 2" scat tube from muff. Standoff design allows hot air to escape when carb heat is not selected. Weight: 0.9 oz.

P/N 08-04145.....

FLANGED DUCT - Accepts 2" ducting on both ends. Helps route ducting through bulkheads, firewalls, etc. Especially useful for getting heat to the back seat of the aircraft. 3" square plate with 2" tubing projecting 1" from each side. Wt:0.7 oz.

P/N 08-04140.....

CABIN HEAT BOX



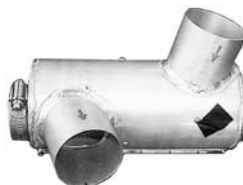
Custom built aluminum box mounts to firewall. Lever on butterfly may be attached to push-pull control for close adjustment of cabin air flow. Two 2" intake ports, one 2" outlet. Wt. 1 lb. 7-1/2" long. Fine quality construction.

P/N 08-01500.....

HOMEBUILDER'S HEAT MUFFS



P/N 08-03900



P/N 08-00473

These superior quality heat muffers are made entirely of 6061 and 5052 aircraft grade aluminum, offset from the center to clear the close cowling of most homebuilts. The muff can be installed anywhere on the exhaust system where there is 12" of straight pipe, baffle, or even on an aft vertical baffle. The reason for using forced air through the muffers rather than just taking warm air from the low pressure plenum is that in order to have cabin heat you have to have forced air. The muff is constructed so that it can be used for either cabin heat or carb heat, or both, as there is 1 outlet & 1 inlet. The muff is split and piano-hinged to "clam-shell" over the exhaust pipe. This is necessary if you have downturns on your exhaust pipes and do not want to cut off the downturns should you later want to remove the muff. Stainless steel clamps are furnished with the muff. Inlet and outlets are 2" dia. and will fit 1.75" dia. pipes. The standard 9" body has 1 inlet & 1 outlet and generally used for cabin heat (wt:10.4 oz.). The shorter 6.5" body 1 inlet & 1 outlet and generally used on the front crossover section of the exhaust to duct heat to the carburetor box (wt: 8.9oz.).

Standard 9" body..... P/N 08-03900.....

Standard 6.5" body..... P/N 08-00473.....



EXHAUST SYSTEMS



EXHAUST SYSTEMS BY AEROSPACE WELDING MINNEAPOLIS, INC.

Aerospace Welding, Inc. has earned a reputation for its uncompromising commitment to quality exhaust systems and components. Aircraft Spruce is an authorized distributor of AWI products, and as such can assure our customers of minimal down time and fast shipment through the Priority Service Program at AWI. All exhaust systems are built in fixtures for precise fit and are FAA approved for the listed aircraft. Available in factory new (N) and overhauled (OH) condition as noted.

| Aircraft | OEM Part No. | Description | Our Part No. | Price | Aircraft | OEM Part No. | Description | Our Part No. | Price |
|----------------------|---------------------|----------------------|--------------|----------|----------------------|---------------------|------------------------|--------------|----------|
| C-150 | 0450400-3 | LH Muffler (N) | 08-00061 | . | PA28-235 | 65012-00 | Muffler (OH) | 08-00137 | . |
| | 0450400-26 | RH Muffler (N) | 08-00062 | . | | 65813-00 | Muffler (OH) | 08-00138 | . |
| | 0450338-70 | RH Riser (N) | 08-00063 | . | | 68718-00 | Muffler (OH) | 08-00139 | . |
| | 0450338-69 | LH Riser (N) | 08-00064 | . | | 65038-00 | LH Stack (OH) | 08-00140 | . |
| | 0450338-66 | RH Tailpipe (N) | 08-00065 | . | | 65039-00 | RH Stack (OH) | 08-00141 | . |
| C-152 | 0450338-67 | LH Tailpipe (N) | 08-00066 | . | PA28-236 | 67517-00 | Muffler (N) | 08-00142 | . |
| | 0454009-5 | Muffler (OH) | 08-00067 | . | | LW16826 | LH Stack (OH) | 08-00144 | . |
| | 0454009-6 | Muffler (OH) | 08-00068 | . | | LW12127 | Transition (N) | 08-00145 | . |
| EL0099001-716 | Muffler (OH) | 08-00069 | . | LW12437 | | Transition (N) | 08-00146 | . | |
| 040310-09 | Lower Tailpipe (OH) | 08-00147 | . | 40310-08 | | Upper Tailpipe (OH) | 08-00148 | . | |
| C-170B/172 | 0550157-9 | LH Muffler (OH) | 08-00070 | . | 40310-10 | Upper Tailpipe (OH) | 08-00149 | . | |
| | 0550157-32 | RH Muffler (OH) | 08-00071 | . | PA32-260 | 68718-00 | Muffler (OH) | 08-00150 | . |
| | 0550157-7 | Riser (N) | 08-00072 | . | | 65038-00 | LH Stack (OH) | 08-00151 | . |
| | 0550157-8 | Curved Riser(OH) | 08-00073 | . | 65039-00 | RH Stack (OH) | 08-00152 | . | |
| C-172 Cont. | 0550176-59 | Muffler (N) | 08-00074 | . | PA32-300 | 68796-00 | Muffler (OH) | 08-00153 | . |
| | 0550157-7 | Riser (N) | 08-00075 | . | | 68793-00 | Stack (OH) | 08-00154 | . |
| | 0550176-13 | Riser (N) | 08-00076 | . | 67517-00 | Muffler (N) | 08-00155 | . | |
| | 0550176-13 | Riser (N) | 08-00076 | . | PA32R-301-T | W15859 | Westgate (OH) | 08-00156 | . |
| 1754001-25 | Muffler (N) | 08-00077 | . | W16759 | | Westgate (OH) | 08-00157 | . | |
| C-172 | 1754001-15 | Muffler (N) | 08-00078 | . | PA34-200-I | 78463-10 | LH Tailpipe (OH) | 08-00158 | . |
| | 1754007-1 | Riser (OH) | 08-00079 | . | | 78463-10 | RH Tailpipe (OH) | 08-00159 | . |
| | 1754008-1 | Riser (OH) | 08-00080 | . | PA38-112 | 77669-02 | Muffler (OH) | 08-00160 | . |
| | 1754009-1 | Riser (OH) | 08-00081 | . | | PA44-180 | 86299-07 | Muffler (OH) | 08-00161 |
| | 1754010-1 | Riser (OH) | 08-00082 | . | B-33 & 35A-G | 186 | LH Muffler (OH) | 08-00162 | . |
| 1754010-1 | Riser (OH) | 08-00082 | . | 189 | | RH Muffler (OH) | 08-00163 | . | |
| C-177 | 1754001-25 | Muffler (N) | 08-00083 | . | B-V35/A36 | 35-950005-1 | LH Stack (OH) | 08-00164 | . |
| | 1754001-9 | Muffler (N) | 08-00084 | . | | 35-950005-3 | RH Stack (OH) | 08-00165 | . |
| C-177RG | 2054000-42 | LH Muffler (OH) | 08-00085 | . | 701-4 | LH Muffler (OH) | 08-00166 | . | |
| | 2054000-40 | LH Muffler (OH) | 08-00086 | . | 701-20 | LH Muffler (OH) | 08-00167 | . | |
| C-180 | 2054000-31 | LH Muffler (OH) | 08-00087 | . | 701-5 | RH Muffler (OH) | 08-00168 | . | |
| | 2054000-39 | RH Muffler (OH) | 08-00088 | . | 701-19 | RH Muffler (OH) | 08-00169 | . | |
| C-180/182 | 0750290-3 | Muffler (OH) | 08-00089 | . | 35-950004-7 | LH Tailpipe (OH) | 08-00170 | . | |
| | 0750130-9 | Muffler (OH) | 08-00090 | . | 35-950004-9 | RH Tailpipe (OH) | 08-00171 | . | |
| C-182/185 | 0750130-12 | Muffler (OH) | 08-00091 | . | 35-950005-61 | LH Tailpipe (N) | 08-00172 | . | |
| | 0750130-44 | Muffler (OH) | 08-00092 | . | 35-950005-57 | RH Tailpipe (N) | 08-00173 | . | |
| | 0750130-48 | | | | B-35H-P | 492-27 | RH Muffler (OH) | 08-00174 | . |
| | 0750161-89 | Muffler (N) | 08-00094 | . | | 35-950004-7 | LH Tailpipe (OH) | 08-00176 | . |
| | 0750238-20 | Stack (N) | 08-00095 | . | 35-950004-9 | RH Tailpipe (OH) | 08-00177 | . | |
| C-182RG | 1250251-12 | LH Muffler (OH) | 08-00096 | . | 35-950005-61 | LH Tailpipe (N) | 08-00178 | . | |
| | 1250250-5 | RH Muffler (OH) | 08-00097 | . | 35-950005-57 | RH Tailpipe (N) | 08-00179 | . | |
| C-206/210 | 1250263-2 | LH Collector (OH) | 08-00103 | . | B-55/58 | 96-950002-55 | LE OTNBD Tailpipe (OH) | 08-00180 | . |
| | 1250264-2 | RH Collector (OH) | 08-00104 | . | | 96-950002-57 | RE INBD Tailpipe (OH) | 08-00181 | . |
| | 1250250-5 | LH Muffler (OH) | 08-00105 | . | | 96-950002-59 | LE INBD Tailpipe (OH) | 08-00200 | . |
| | 650-43 | LH Muffler (OH) | 08-00106 | . | | 96-950002-61 | RE OTNBD Tailpipe (OH) | 08-00201 | . |
| | 1250251-13 | RH Muffler (OH) | 08-00107 | . | | 96-950002-31 | Riser Cyl. #3 (OH) | 08-00202 | . |
| | 1250251-16 | RH Muffler (OH) | 08-00108 | . | 96-950002-7 | Riser Cyl. #4 (OH) | 08-00203 | . | |
| | 1250256-7 | LH Tailpipe (N) | 08-00109 | . | 96-950002-33 | Riser Cyl. #5 (OH) | 08-00204 | . | |
| | 1250257-7 | RH Tailpipe (N) | 08-00110 | . | 96-950002-9 | Riser Cyl. #6 (OH) | 08-00205 | . | |
| | 12502646-6 | RH Tailpipe (N) | 08-00111 | . | B-Sundowner | 099001-127 | Muffler (OH) | 08-00206 | . |
| | 1250860-110 | Tailpipe (OH) | 08-00112 | . | | B-Sport | 099001-126 | Muffler (OH) | 08-00207 |
| C-T206/T210 | 1250860-104 | RF Stack (OH) | 08-00113 | . | B-Sierra | 099001-131 | Muffler (OH) | 08-00208 | . |
| | 1250860-105 | Turbo Inlet (OH) | 08-00114 | . | Bellanca Citabria | 3-1493R | Muffler (OH) | 08-00209 | . |
| 1250860-203 | Heat Exchanger (OH) | 08-00115 | . | 3-1493L | | Muffler (OH) | 08-00210 | . | |
| 1250860-90 | Crossover (OH) | 08-00116 | . | 4-1104 | | Muffler (OH) | 08-00211 | . | |
| C-T206/T210 | 1250860-100 | Riser (N) | 08-00117 | . | 4-1105 | Muffler (OH) | 08-00212 | . | |
| | 1250860-07 | Tailpipe Adapter(OH) | 08-00119 | . | Bellanca 8KCAB | 099001-046 | Muffler (OH) | 08-00213 | . |
| C-337 | 1250250-5 | Muffler (OH) | 08-00120 | . | Bellanca 8GCBC | 099001-046 | Muffler (OH) | 08-00214 | . |
| | 1555001-1 | Muffler (OH) | 08-00121 | . | Bellanca 7GCAA | 099001-050 | Muffler (OH) | 08-00215 | . |
| Piper J-3 | 71053-02 | Muffler (OH) | 08-00122 | . | Bellanca 7GCBC | 099001-050 | Muffler (OH) | 08-00216 | . |
| | PA18 | 12433-014 | Muffler (OH) | 08-00123 | Bellanca 7ECA | 099001-049 | Muffler (OH) | 08-00217 | . |
| PA22 | 12457-002 | Stack (OH) | 08-00124 | . | Grumann AA1 Yankee | 099001-113 | Muffler (OH) | 08-00218 | . |
| | 10308-003 | Muffler (OH) | 08-00126 | . | Grumann AA1 A&B | 099001-137 | Muffler (OH) | 08-00219 | . |
| | 12043-22 | Stack (OH) | 08-00127 | . | Grumann AA5 Traveler | 099005-148 | Muffler (OH) | 08-00220 | . |
| | 12043-23 | Stack (OH) | 08-00128 | . | Grumann AA5A Cheech | 099005-195 | Muffler (OH) | 08-00221 | . |
| | 99482-00 | Muffler (OH) | 08-00129 | . | Grumann AA5B Tiger | 099001-191 | Muffler (OH) | 08-00222 | . |
| PA28-140/-180 | 99482-02 | Muffler (OH) | 08-00130 | . | Mooney M20 | 630060-501 | 180 Muffler (OH) | 08-00223 | . |
| | 99044-02 | Stack (OH) | 08-00131 | . | | 630060-503 | 200 Muffler (OH) | 08-00224 | . |
| | 99044-04 | Stack (OH) | 08-00132 | . | | | | | |
| | 99044-05 | Stack (OH) | 08-00133 | . | | | | | |
| | 99044-03 | Stack (OH) | 08-00134 | . | | | | | |
| PA28-151/161/180/191 | 66894-03 | Muffler (N) | 08-00135 | . | | | | | |
| PA28R-180/200 | 67517-00 | Muffler (N) | 08-00136 | . | | | | | |

Note: (N) or (OH) after description indicates New (N) or Overhauled (OH) condition. All overhauled parts carry a care charge. Please Order according to "Our Part No."

HEAT BOXES – HEAT SHIELDS



VHT FLAMEPROOF COATINGS

Originally designed for NASA's reentry spacecraft, VHT FlameProof is a scientifically formulated compound designed to withstand temps. up to 1500°F (816°C) VHT FlameProof coatings are capable of withstanding extreme environments of spacecraft, satellites, military aircraft, and motor sports. It survives where other paints can't, shields & protects, maintains the finish, prevents rust & corrosion, and resists oils & solvents. For aircraft applications the typical use is on high temperature steel components such as exhaust & turbocharging systems. Excellent for use as a heat resistant and anti-corrosion coating on exhaust manifolds and turbine casings. Both the Flat Aluminum and Flat Black are non-facing colors.

Flat Aluminum 16 oz. aerosol spray..... P/N 08-00713.....
 Flat Black 16 oz. aerosol spray..... P/N 08-00714.....
 Flat Black Quart Can..... P/N 08-00716.....



THERMO-TEC HEAVY-DUTY SPRAY ADHESIVE

Thermo-Tec's new Heavy-Duty Spray Adhesive is a fast-drying, quick-bonding, high temperature contact adhesive. Use it wherever you need a secure, long-lasting, easy-to-apply bond. It is available in a generous 16.75 oz. can.
 P/N 08-01026.....

BLACK SATIN COATING

The easiest to apply, Black Satin also requires bead or sand-blasting of all parts. It does not, however, require oven curing or burnishing. One 4oz bottle will cover one average exhaust system and will provide a long-lasting flat black finish.
 4 oz..... P/N 13-01024.....



EXHAUST HEAT SHIELD

This heat shield is placed on exhaust where fuel lines, cable, etc. are close to exhaust and where heat may be a problem.

Mounts with stainless radiator type clamp (not included). Fits exhaust pipes up to 2.5" diameter. Very popular on RV's and other homebuilt aircraft.
 Single Unit..... P/N 08-00050.....
 Double Unit..... P/N 08-00051.....



RADIANT HEAT SHIELD KIT

The purpose of this kit is to help the aircraft home-builder make their own heat shields. Experience has shown that a heat shield is rarely over 8 inches, thus the 20 inches of shield material in the kit should provide the various lengths needed. You would not be limited to heat shields that are fixed in length. Also you can position the brackets in many configurations allowing the shield to be attached to the exhaust pipe without interference with bends, other clamps, probes, and so forth. You do not have to limit the location based on standard heat shield attachment configuration.
 P/N 08-06286.....

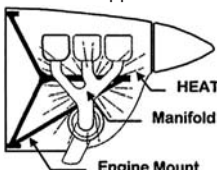


ENGINE MOUNT HEAT SHIELDS

Heat damaged O-470 & O-520 engine mounts are a definite problem area. You can easily protect these engine mounts from further damage with these heat shields. The aircraft manufacturers overlook providing heat protection in these areas when they designed and produced the aircraft. INSPECT ENGINE MOUNTS. Flaking paint, deterioration or pitting leads to cracking, and breakage – in other words, an UNSAFE CONDITION. If you want long-lasting protection from corrosion damage, the solution is install custom engine mount heat shields that are FAA & STC/PMA approved.



Avoid downtime and save money on airplane maintenance with this practical new device. The heat shields are built from an extremely durable 6061-T6 aluminum alloy and install in minutes. The complete kit includes installation hardware, instructions & copy of the Supplemental Type Certificate.



For Cessnas: Heat shield kit for 180, 180A-H, 180J, 180K, 182, 182A-R

Heat shield kit 185A-E, A185F. Fits Standard and 3 bladed mounts.
 P/N 08-00767.....
 Replace. Intake Shields (heavy duty) PMA'd.. P/N 08-00769.....
 Cowling Off Ground Run Filter for 1960-1986 carbureted Cessna 180/182..... P/N 08-01665.....
 For Pipers: Heat shield kit for PA-30, PA-39 (4 shields prevent surging in hot weather)..... P/N 08-00768.....



CARBURETOR INTAKE ASSEMBLIES (HEAT BOXES)

P/N A40522 for Continental A-65 through C-125.
 Also fits Lyc. O-235, O-290, O-320 engines with MA3SPA, MA4SPA carburetors.
 Complete assembly includes heat box, filter, gaskets, studs and pins.
 Not for Certified Aircraft, Homebuilts Only.

| Component | Part No. | Price |
|---------------------|----------|-------|
| Heat Box | 50256 | |
| Filter | A40599 | |
| Gasket | 35923 | |
| Studs (4 required) | 24306 | |
| Pins (4 required) | 24308 | |
| Bottom Carb. Gasket | 21323 | |
| A40522 Assembly | 08-01300 | |

CONT. O-200 HEAT BOX CESSNA 170 STYLE HEAT BOX

For Cont. O-200 engine as used on Cessna 150. Also fits Cessna 120, 140, and PA-22 Tripacer. Order filter, gaskets, studs & pins separately.
 P/N 641534.....
 Cable 'B' Nut P/N 05-16245.....
 Heat Box for Cessna 170 - Similar to P/N 641534 above, but larger
 P/N 08-01625.....
 Similar to Cessna 170 box. Fits Lyc. O-360, O-470, etc. Uses bracket BA-5110 filter..... P/N 08-01630.....



LYCOMING AND CONTINENTAL CARBURETOR HEAT BOXES

Lycoming O-320 and Continental A65-100 Carb Heat Boxes. The 100-320 is 2-1/2" diameter height is 1" smaller flange.
 Lycoming O-320 Carb Heat Box..... P/N 05-01388.....
 Cont. A65-100 Carb Heat Box..... P/N 05-01387.....



CARB HEAT BOXES FOR PUSHER AIRCRAFT

Designed for airplanes and rotorwing aircraft with engines in pusher configuration using MA3/MA4 carburetors (not MA4-5). Uses same baskets as J-3 & C-150 boxes..... P/N 08-00855.....

USHER CARBURETOR HEAT BOXES

These high quality carburetor heat boxes are available for most common Lycoming & Continental engines. Not FAA approved. (Shown here with tube)
 K1F Heat Box w/o tube..... P/N 08-01601.....
 K1M Heat Box with tube..... P/N 08-01602.....
 KO320 Heat Box with tube..... P/N 08-01603.....
 KO360 Heat Box with tube..... P/N 08-01604.....



CARBURETOR INTAKE BOX BRACKET FOR CESSNAS

This carburetor intake box bracket mounts on top of the heat box and attaches to the engine to provide support for the heat box.
 Fits Cessna 150. P/N 08-01305.....



CARBURETOR HEAT BOX REPAIR KITS

Prevent carburetor heat box cracking - a common problem on Cessna 150 aircraft and Cont. O-200 engine. Kit consists of actuating shaft, 2 bearing assemblies and arm. Kit no. FG100 fits Cont. O-200-A, B, C Engines. Kit No. FG105 fits Cont. O-300-A, B, C, D, E engines.
 Model FG100..... Kit No. 08-01309.....
 Model FG105..... Kit No. 08-01310.....



ECONOMY CARB HEAT BOX REPAIR KITS

These kits include new shaft & bearings.
 Kit for Cont. C-85, C-90, O-200 Engine
 P/N 07-00110.....
 Kit for Cont. C-145, O-300 Engine
 P/N 07-00120.....



Requires FAA form 337 for installation on certified aircraft

CARB HEAT BOX ARM HOLE REPAIR KIT

Use this kit to repair an elongated hole in the carburetor heat box actuating arm. Kit comes complete with new bolt and attaching hardware made of stainless steel.
 P/N 07-00130.....



CARBURETOR INDUCTION MANIFOLD (INTAKE SPIDER)

For O-200 engine..... P/N 35145A-1.....
 For A-65, C-75, C-85 & C-90 engines.
 P/N 35145.....



EXHAUST GASKETS – HEAT MUFFS



AERONCA HEAT MUFF

Aluminum muffers for models 7AC and 11AC exhaust stacks. Fit either left or right side.

P/N 05-08715.....

CESSNA TYPE HEAT MUFF

Heli-arc welded aluminum muff with rustproof stainless steel fins for clamping to stack. Similar in design to the new Cessna type. Furnished with attaching clamps.

Muff w/2" Outlet..... P/N 08-02400
Muff w/ 2.5" Outlet P/N 08-02500

VARIEZE / LONG EZ

CARBURETOR HEAT BOX

This box is an improved redesign of the original heat box. It eliminates the possibility of engine stoppage caused by worn parts plugging the carburetor intake.

Without Filter P/N 08-01600
VE/LE Heat Box Repair Kit ... P/N 08-01610
VE/LE Filter Only P/N 08-01615
VE/LE Filter Cleaner Kit (cleaner & oil)
P/N 08-01620.....

EXHAUST MANIFOLD NUTS



| Part No. | Thread Size | Type | Engine Application | Price Each |
|----------|-------------|-------|--|------------|
| 21247 | 1/4-28 | Brass | Cont., O-480 | . |
| 22022 | 5/16-24 | Brass | Cont. A-65, C-75 thru C-90, O-200, O-300 | . |
| STD1410 | 5/16-18 | Steel | Lycoming | . |

STAINLESS STEEL EXHAUST STUDS FOR LYCOMING ENGINES

These high quality exhaust studs are produced from corrosion resistant 321 stainless steel in 5/16 x 18 standard thread size (oversize available soon) and are a direct replacement for the Lycoming part number 31C12 stud. FAA approved for all Lycoming engines from 0-235 thru 0-540. P/N 08-06780



BLO-PROOF EXHAUST GASKETS

These gaskets are manufactured in a 1-piece design in 7/64" thick steel. They have a split metal inner ring which provides an absolute seal and

they are guaranteed not to blow off. Engine manufacturer's parts.

Continental P/N 627429 for all A, C and E Series Ea
Continental P/N 628260 for 0-470-R Ea
Lycoming P/N 77611 for 4 & 6 Cylinder Engines..... Ea

COPPER EXHAUST GASKETS



Continental P/N 21493 (now P/N 632837 stainless steel)
Cont.#21493 for A-65 to 0-300 (4)

P/N 08-05237 Ea

Cont. #632837 Stainless Steel..... Ea
Lycoming 0-235 to 0-540..... P/N 65321 Ea



AIRBORNE SOLID COPPER BLO-PROOF GASKETS

2 gaskets used per cylinder, with raised beads interlocked facing the exhaust stack flange. Eight required for 4 cyl. engine, 12 for 6 cyl. engine.

| Engine Model Number | Airborne P/N (Use 2/Cyl.) | Price Each |
|--|---------------------------|------------|
| All Lycoming Engines except IO-540-B,-E,-M,-WD,IGO-540-B,IGSO-540-B,TIO-540 series,TIO-541 series TIGO-541 series, IO-540-B,-E,-M,-WD,IGO-540-B,IGSO-540-B | 160 | . |
| TIO-540 Series, TIO-541 Series, TIGO-541 Series | 161 | . |
| A-65 Series, C-85 Series, C-90 Series, J-200 Series, O-300 Series, GO-300 Series, E-185 Series, E-225 Series, O-470-A, -E, -J, IO-470-J, -K | 157 | . |



ROTAX EXHAUST SPRING 938-795

Genuine Rotax replacement spring for use with any Rotax exhaust system. #938-795 Spring. 2 1/4" x 5/8"
P/N 08-06101

KEVLAR HEAT SHIELD



* Can be used for various uses* Can be used as a header blanket* Improve driver comfort* Protect engines components* Continuous heat up to 1100 degrees F* Reflects 90% of radiant heat up to 3000 degrees F. * Size: 26" x 40" Sheet
P/N 08-07162



EXHAUST INSULATING WRAP

The original Exhaust Insulating Wrap was developed over 14 years ago by Thermo-Tec. Exhaust Insulating Wrap is an innovative way to create more horsepower and reduce under-hood temperatures. Wrapping headers maintains hotter exhaust gases that exit the system faster through decreased density. Increased exhaust scavenging is produced, along with lower intake temperatures. Exhaust Insulating Wrap withstands continuous heat up to 2000°F, and contains no asbestos. Thermo-Tec exhaust wrap will not over-insulate a system when properly installed due to a proprietary coating developed by Thermo-Tec -- Thermal Conduction Technology (TCT) -- that conducts heat across the wrap's surface. This coating controls heat build-up and dissipation. The Header Wrap is sold in 2" wide, 50' rolls with a low profile 1/6" thickness. P/N 09-41600

CLAMP ON HEAT SHIELDS



The new and improved flexible clamp on pipe heat shield blocks over 95% of the damaging radiant heat of the exhaust. The High-tech composite construction of the heat shield provides the ultimate in protection. The kits come complete with all clamps and new stainless stand offs. Installs in minutes. Clamp-on pipe heat shields are available in one, two and three foot lengths. Clamp-on pipe heat shields incorporate Thermo-Tec's proprietary coating technology developed by Thermo-Tec, Thermal Conduction Technology.

6" X 1 P/N 08-07073
6" X 2 P/N 08-07074

HI-HEAT COATING



To finish off a clean and well-protected Exhaust Insulating Wrap application we recommended the use of Hi-Heat Coating. The coating will protect the wrap from abrasion and harmful liquid spills. Extra resins and binders toughen the surface, extend the life of wrap by protecting it from friction, and seal the pores to minimize the penetration of harmful liquids. The 11 oz. coating comes in black and aluminum colors.

Black P/N 08-06725
Aluminum P/N 08-06730

SNAP STRAPS



The multi-purpose stainless steel Snap Straps are used to secure the Exhaust Insulating Wrap -- and more. The high-temperature stainless steel straps have a narrow profile to fit tight spots, and can be cut to the exact length needed. Snap Straps secure with easy-to-use slide-through fasteners. 9" 12 pack P/N 08-13150
18" 6 pack P/N 08-13160



ALUMINIZED HEAT BARRIER STOPS UNWANTED HEAT TRANSFER

Keep heat where you want it with this hi-tech aluminized heat blanket. Thickness, 0.060". Furnished in 36"x40". Sheets (10 Sq. Ft.) P/N 08-06735..... ea.



STEEL EXHAUST STACK FLANGES MILD STEEL

Cont. A&C Series, 0-200, 0-300..... P/N 33011 Ea
Lycoming 0-235 to 0-540 P/N 33021 Ea

STAINLESS STEEL

Continental A & C Series P/N 33101 Ea
Continental IO-470 thru IO-520..... P/N 33103 Ea
Lycoming 0-235 thru IO-360 P/N 33102 Ea
Lycoming IO-540 P/N 33104 Ea



EXPRESS SLEEVES

Express Sleeves are just the thing that our customers have been looking for. An new easy to use sleeving which is a combination of a high temperature insulation material to a highly reflective mylar foil with a Velcro closure. The sleeving is designed to provide maximum protection for wires, hoses, and cables from the very damaging effect of radiant heat with an easy application. Simply pull apart the material, wrap around the wire, and re-close the sleeving. Express Sleeves reflect over 90% of radiant heat, is fireproof and fire resistant, and just looks good. Express Sleeves come in 1 1/2" diameter in 3', & 12' lengths.

| Description | Size | PN | Price |
|---------------------------|--------------|----------|-------|
| Thermo-Tec Express Sleeve | 1-1/2" X 3" | 09-02060 | . |
| Thermo-Tec Express Sleeve | 1-1/2" X 12" | 09-02061 | . |



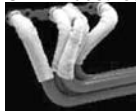
THERMO-GUARD FR

Thermo-Guard FR offers the best in head and sound insulation. This lightweight, durable shield does everything: reduces sound, absorbs vibration, protects from radiant heat and provides an extra layer of insulating padding. The product features 100% synthetic fiber felt that provides sound and comfort control and high-tech foil heat barrier that blocks more than 90% of radiant heat.

48"x72" 1-Sided P/N 08-01028
48"x72" 2-Sided P/N 08-01029

EXHAUST INSULATING PRODUCTS

Ultra-high temperatures produced by today's engines have a dramatic effect on performance. Solution? Thermo-Tec's full line of high performance heat control products that focus on utilizing heat as a performance tool. For over 15yrs Thermo-Tec has been developing & manufacturing products for the Automotive Performance, Aerospace & OEM industries.



HIGH VELOCITY EXHAUST JACKET

The quick-wrap high-velocity Exhaust Jackets are an innovative way to insulate and block radiant heat. The jackets cover the tubes vertically allowing for a consistent fit. The fit allows the exhaust system to expand as it comes up to operating temperatures without restrictions and provides air space for added insulation. This product uses Thermal Conduction Technology (TCT), developed by Thermo-Tec, and can be applied with the headers in the vehicle.

4-6 cyl. kit ..P/N 08-00597 8 cyl. kit...P/N 08-00598

SPARK PLUG WIRE HEAT SHIELD



The ultimate protection for spark plug wires and boots from conductive and radiant heat. The dual-purpose sleeve has a surface that reflects over 90% of radiant heat, while the inside silica-based fabric prevents conductive heat from penetrating.

P/N 08-00612.....

TURBO KIT



The Turbo Kit was designed to protect, improve performance, and eliminate turbo lag of a turbo charger. This complete kit, to contain the heat produced by a turbo, fits a wide variety of turbines. The custom cut-to-fit kit comes with an excessive amount of material to cover turbos from the smallest automotive application to heavy-duty truck applications. 2 Turbo Kits are available: a 4 cyl. kit & a 6 - 8 cyl. kit.

4 cyl. kit ..P/N 08-00613..... 6-8 cyl. kit..P/N 08-00614.....

MUFFLER/CAT HEAT SHIELD KIT



The 40"x 24" mylar Heat Shield is made up of woven silica with a flexible mylar finish. The highly-reflective heat shield can be installed between the catalytic converter, muffler, or any other component to reflect radiant heat away from the undercarriage of the car. The kit includes all necessary fasteners.

P/N 08-00616.....

HEAT TERMINATOR ULTRA-LITE



Designed with the racer in mind, Heat Terminator is made of the highest-quality insulating materials available today. The material is made of a highly-textured aluminum composite surface on one side, with a high-temperature silica felt center and a durable mylar composite facing. The Heat Terminator uses Thermal Conduction Technology (TCT), developed by Thermo-Tec.

8"x 12"P/N 08-00617 10"x 18".....P/N 08-00618
18"x 18"P/N 08-00619 18"x 24".....P/N 08-00620
24"x 24"P/N 08-00621 24"x 36".....P/N 08-00622

STARTER HEAT SHIELD



In today's high-heat environment, starters take in a lot of damaging heat that destroys the windings of the starter & solenoid. To combat this problem, Thermo-Tec created a non-conductive strap-on heat shield with a highly-reflective mylar surface. The Starter Heat Shield will reflect over 90% of radiant heat, adding life to the starter and assuring reliable starts. The Starter Heat Shield is a universal kit that fits all starters.

P/N 08-00611.....

THERMO SHIELD



Thermo-Shield protects hoses & wires from radiant heat. Used in applications where it is difficult or not practical to disconnect one end of the hose or wire. The adhesive-backed composite construction tape can easily be wrapped around the hose or wire to make a clean, professional appearance. 15"x 1.5" roll.

P/N 08-00602.....

THERMO-FLEX



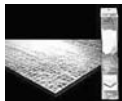
Thermo-Flex Aluminum is a composite heat shield material with unlimited uses. The material is manufactured with a combination of materials to provide abrasion-resistance, thermal insulation, and physical containment of hoses and wiring. The combination of aluminum, silica, and stainless steel is combined to produce a sleeving that is flexible, lightweight, and strong. The aluminum-silica combination can be slit for applications such as wire looms or hose covering without disconnecting the ends of the wire or hoses. Thermo-Flex Aluminum can withstand extreme temperatures of up to 750°F. Packaged in 10 ft. lengths.

5/8"P/N 08-00623 1.25" P/N 08-00626
0.75"P/N 08-00624 1.5" P/N 08-00627
1"P/N 08-00625 3"..... P/N 08-00628

FIREPROOF SHIFTER BOOT

The Fireproof Shifter Boot is made up of woven silica with a flexible Mylar finish. The shifter boot was developed as a fire barrier for high speed engine fires, which can burn away rubber boots in seconds.

P/N 08-00615



COOL-IT MAT

Use the Cool-It Mat to battle excessive heat and noise that penetrate the driver compartment through the firewalls and floorboards. It is also perfect in doors, under hoods, and above transmission housings. Cool-It Mat is composed of resin-bonded silica blanketing insulation sandwiched between a mylar facing on one side and a foil facing on the other. The highly-reflective mylar reflects heat away from surfaces, while the foil side is orientated away from the heat source to conduct any penetrating heat across its surface thus providing the ultimate in heat protection. The silica blanketing is a dual-density composite and is the main sound insulator. It is easy to trim and can be applied with the push-in fasteners provided or any weather strip adhesive.

P/N 08-00610.....

THERMO-SLEEVE



Lamination of a high-temperature fabric to a highly-reflective foil is the makeup of Thermo-Sleeve, which provides protection from radiant heat for hoses and wires.

Thermo-Sleeve's ultra light-weight construction provides more insulating than traditional bulky rubber-coated fiberglass. The aluminized sleeving reflects over 90% of radiant heat, and is fireproof & oil resistant. Comes packaged in 12-ft lengths, and sold in 5 different inside diameter sizes.

12" 1/2" ID.....P/N 08-00605 12" 1" ID...P/N 08-00606
12" 1-1/2" ID....P/N 08-00607 12" 2" ID...P/N 08-00608
12" 2-1/2" ID ..P/N 08-00609



HEAT BARRIER - ADHESIVE BACKED

Aluminized Heat Barrier is made up of woven silica with a flexible aluminized finish. The highly reflective surface of the material is capable of withstanding radiant temperatures in excess of 2000°F. The adhesive backed composite

construction material can easily be applied to any surface or wrapped around a hose or wire to make a clean professional appearance. Note: Clean surface before applying. Adhesive is rated up to 300° F. Don't apply to any parts of exhaust system. This product is designed to block radiant heat only!

12" x 12" ...P/N 08-00630 12" x 24"P/N 08-00600.....

HEADER MANIFOLD BLANKET



The Header Manifold Blanket provides excellent heat-retention for exhaust headers and manifolds. This flexible heat shield simply clips into place on the upper portion of the header. The fabric side of the material should be facing the heat source, and the aluminized side facing away, offering protection from abrasion and harmful liquid spills. Available in two sizes: (2) 20" by 24" blankets for V6 & V8 applications, and (1) 36" x 40" blanket for straight 6 & 4 cylinder engines.

20"x24"P/N 08-00603 36"x40".... P/N 08-00604

COOL-IT PLUG WIRE SLEEVES



This unique spark plug & ignition wire protector comes in five sporty colors; red, orange, blue, black & natural. These dual-purpose sleeves enhance performance, reduce misfires, extend plug wire life and will not react with petroleum products. The double-wall construction keeps the wire and boot cooler in a high-temperature engine. Its universal size fits most boots, is easy to install & non-flammable.

4-PackP/N 08-01027 6-Pack..... P/N 08-01030

GRAPHITE BLACK WRAP



Graphite Black Wrap offers the same unrivaled performance and insulating properties as our original exhaust wrap and more. Traditionally, high-heat coating spray had to be applied to the exhaust wrap to color it black. Now new Graphite Black Wrap eliminates the process of coating the wrap with its patented Thermal Conduction Technology (TCT) high-heat color pigment. Graphite Black Wrap is available in 2" widths, in 50-ft rolls.

P/N 08-00596

GENERATION II COPPER HEADER WRAP



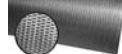
Generation II Copper Header Wrap improves heat resistance up to 30% more than current technology, by utilizing a new proprietary coating developed by Thermo-Tec; improved Thermal-Conduction-Technology (T-C-T).

Creates more horsepower & reduces underhood temps, increases exhaust scavenging, withstands continuous heat up to 2000°F, contains no asbestos. Sold in 1" or 2" wide, 50 ft rolls with low profile 1/16" thickness.

1"X50.....P/N 08-11031

2"X50.....P/N 08-11032

MICRO LOUVER AIR SHIELD



Lightweight yet durable, the aluminum Micro Louver Air Shield features micro air louvers, which allow air to flow through the metal shield. The movement of the vehicle creates dynamic air flow, cooling by natural convection. The textured surface created by the micro air louvers creates more area for heat dissipation. The Micro Louver Air Shield is flexible yet durable; it bends and flexes easily by hand, making a custom fit trouble-free.

12"X24".....P/N 08-11710

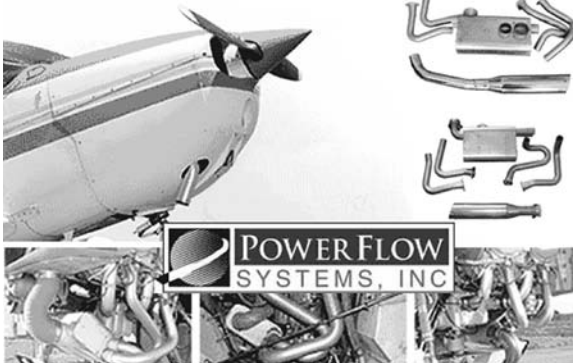
24"X24".....P/N 08-11720

48"X24".....P/N 08-11740

EP

POWER FLOW SYSTEMS INC. EXHAUST SYSTEMS

**BOLT ON
HORSEPOWER
GUARANTEED**



Power Flow Systems, Inc., the world leader in designing, manufacturing, and retailing of FAA Certified High Performance aircraft tuned exhaust systems. Their Tuned Exhaust System is totally different. When you break down their exhaust system, you have two "sets" of pipes; the primary (header/collector combination) and the secondary (pipe after the collector). The primary contains four independent tubes that all join at the "4-1 Collector". As each "exhaust puff" of spent fuel travels through the primaries, it leaves a vacuum behind. In their tuned exhaust system, they have adjusted the length of each tube so that the vacuum reaches the collector just in time to "suck out" the exhaust from the next cylinder. The exhaust gases are not only being pushed out by the cylinder, but "extracted" by the vacuum, so a bigger, fresher charge will enter the cylinder during the next cycle. A tuned exhaust system really promotes a smoother, cooler, and finally more powerful running engine.

Benefits with Power Flow Systems:

- Shorter Take Off Roll
- Greatly Improves Rates of Climb
- More Usable Power
- Fuel Savings at Current Speeds
- Smoother Running Engine
- Runs cooler at Current Speeds
- Go up to 8 knots faster
- Mandrel Bent Tubes to maintain consistent interior dimension

Kit Contents:

- Kit includes everything to "bolt on" a Complete Replacement Exhaust System
- New Headers, Heater, & Muffler
- No blow gaskets, Nuts, Lock washers, Flat washers, Cotter pins etc.
- Stainless Steel Construction
- Up to 40% thicker than stock
- New Improved Heating System

EP

| Airplane | Type of System | Power Flow P/N | Our P/N | Price |
|--|----------------------|-----------------------------|----------|-------|
| Cessna 172 C-172 w/ O-320 | Classic Polished | PFS-13204 | 08-00358 | . |
| | Classic Ceramic | PFS-13204-Ceramic | 08-05957 | . |
| | Short Stack Polished | PFS-13204-InternalC | 08-05958 | . |
| | Short Stack Ceramic | PFS-13204-Internal-CCER | 08-05959 | . |
| Cessna 172 or 175 C-172 w/ O-360 | Classic Polished | PFS-13204-O360 | 08-00359 | . |
| | Classic Ceramic | PFS-13204-O360-Ceramic | 08-05960 | . |
| | Short Stack Polished | PFS-13204-O360-InternalC | 08-05961 | . |
| | Short Stack Ceramic | PFS-13204-Internal-CCER | 08-05962 | . |
| Cessna 177 C-177 w/ O-320 | Classic Polished | PFS-13704 | 08-00360 | . |
| | Classic Ceramic | PFS-13704-Ceramic | 08-05963 | . |
| | Short Stack Polished | PFS-13704-InternalC | 08-05964 | . |
| Cessna 177A C-177 w/ O-360 | Short Stack Ceramic | PFS-13704-Internal-CCER | 08-05965 | . |
| | Classic Polished | PFS-13704-O360 | 08-00361 | . |
| | Classic Ceramic | PFS-13704-O360-Ceramic | 08-05966 | . |
| Cessna 177B (O-360) | Short Stack Polished | PFS-13704-0360-InternalC | 08-05967 | . |
| | Short Stack Ceramic | PFS-13704-0360-InternalCCER | 08-05968 | . |
| | Classic Polished | PFS-13705 | 08-00880 | . |
| Cessna 177RG (O-360) | Classic Ceramic | PFS-13705-Ceramic | 08-05969 | . |
| | Short Stack Polished | PFS-13704-InternalC | 08-05970 | . |
| | Short Stack Ceramic | PFS-13705-Internal-CCER | 08-05971 | . |
| Cessna 177RG (O-360) | Classic Polished | PFS-15102-CERAMIC | 08-07165 | . |
| | Short Stack Polished | PFS-13706 | 08-07163 | . |
| | Short Stack Ceramic | PFS-13706-CERAMIC | 08-07164 | . |
| Grumman AA-5 (below serial #640) | Classic Polished | PFS-13801 | 08-00635 | . |
| | Classic Ceramic | PFS-13801-Ceramic | 08-05972 | . |
| | Short Stack Polished | PFS-13801-InternalC | 08-05973 | . |
| Grumman AA-5 (above Serial #640) & Grumman AA-5A | Short Stack Ceramic | PFS-13801-Internal-CCER | 08-05974 | . |
| | Classic Polished | PFS-13802 | 08-00636 | . |
| | Classic Ceramic | PFS-13802-Ceramic | 08-05975 | . |
| Grumman AA-5B & AA-5B | Short Stack Polished | PFS-13802-InternalC | 08-05976 | . |
| | Short Stack Ceramic | PFS-13802-Internal-CCER | 08-05977 | . |
| | Classic Polished | PFS-13803 | 08-00637 | . |
| Grumman AA-5B & AA-5B | Classic Ceramic | PFS-13803-Ceramic | 08-05978 | . |
| | Short Stack Polished | PFS-13803-InternalC | 08-05979 | . |
| | Short Stack Ceramic | PFS-13803-Internal-CCER | 08-05980 | . |

| Airplane | Type of System | Power Flow P/N | Our P/N | Price |
|---|----------------------|------------------------------|----------|-------|
| Glastar & Sportsman 2+2 Experimental/Homebuil | Polished | PFS-16104 | 08-04986 | . |
| | Ceramic | PFS-16104-Ceramic | 08-05981 | . |
| Piper PA-28-140 | Classic Polished | PFS-14150 | 08-05924 | . |
| | Classic Ceramic | PFS-14150-Ceramic | 08-05982 | . |
| | Short Stack Polished | PFS-14150-InternalC | 08-05983 | . |
| | Short Stack Ceramic | PFS-14150 - Internal-CCER | 08-05984 | . |
| Piper PA-28-150, 160 w/ Dynafocal Mounts (Below Serial #1761) | Classic Polished | PFS-14150 | 08-05985 | . |
| | Short Stack Polished | PFS-14150-Internal-InternalP | 08-05987 | . |
| | Short Stack Ceramic | PFS-14150-InternalP-CER | 08-05988 | . |
| Piper PA-28-150, 160 w/ Conical Mounts (Below Serial #1761) | Classic Polished | PFS-14151 | 08-04985 | . |
| | Classic Ceramic | PFS-14150-Ceramic | 08-05986 | . |
| | Classic Ceramic | PFS-14151-Ceramic | 08-05989 | . |
| | Short Stack Polished | PFS-14151-InternalP | 08-05990 | . |
| Piper PA-28-180 (Below Serial #1761) | Short Stack Ceramic | PFS-14151-InternalP-CER | 08-05991 | . |
| | Classic Polished | PFS-14150 | 08-05992 | . |
| | Classic Ceramic | PFS-14150-Ceramic | 08-05993 | . |
| | Short Stack Polished | PFS-14150-InternalP | 08-05994 | . |
| Mooney M20 (B,C,D,G) w/ O-360 | Short Stack Ceramic | PFS-14150-InternalP-CER | 08-05995 | . |
| | Polished | PFS-16101 | 08-00694 | . |
| Mooney M20 (E,F,J) w/ IO-360 | Ceramic | PFS-16101-Ceramic | 08-05996 | . |
| | Polished | PFS-16201 | 08-01219 | . |
| Diamond DA 40 | Ceramic | PFS-16201-Ceramic | 08-05997 | . |
| | Polished | PFS-15102 | 08-05949 | . |
| Raytheon Beechcraft 23 (O-360) | Ceramic | PFS-15102 | 08-05998 | . |
| | Polished | PFS-14152 | 08-05950 | . |
| | Ceramic | PFS-13804-Ceramic | 08-06000 | . |
| | Polished | PFS-113804 | 08-05999 | . |

EXHAUST SYSTEMS

All exhaust stacks are heli-arc welded using Type 321 stainless steel tubing for light weight and long service life. Stainless steel stacks weight 50% less than a set in mild steel. All stacks are custom made and the workmanship is consistently of exceptional quality.

WHEN ORDERING, SPECIFY COMPLETE MODEL NUMBER AND HP OF ENGINE AND AIRCRAFT TYPE.

STRAIGHT STAINLESS STEEL EXHAUST STACKS



Basic exhaust pipes for Pitts Special, Smith Miniplane, Acro Sport, Starduster and many other homebuilts with Lycoming engines O-235 through O-360. This exhaust system fits under the intake tubes, starting at the rear cylinders, around the front intake tube, then points

aft. Two mufflers (P/N 33205) or two tail pipes (P/N 33204) can be used with this system. With stainless swivel joints for vibration dampening and for positioning of tail pipes through 25° range. Wt. 7-1/4 lbs.

SYSTEM FOR LYCOMING ENGINES THRU 180 HP

Set of two basic stacks only, consisting of:

Right Hand, P/N 33202 & Left Hand, P/N 33203
Set of Two..... P/N 33202/33203.....

(Tail Pipes not included.)



System for Lyc. O-320B (Fuel-Injected)
Tightest system for this engine.

P/N 33270-1.....
(Tail Pipes not included.)

ADD OPTIONS:

STRAIGHT TAILPIPES



| | |
|-----------------------------|-----------------------------|
| P/N 33204 (14")..... Pr. | P/N 33204-24 (24")..... Pr. |
| P/N 33204-18 (18")..... Pr. | P/N 33204-28 (28")..... Pr. |
| P/N 33204-20 (20")..... Pr. | P/N 33204-36 (36")..... Pr. |

MUFFLER WITH 8" TAILPIPE (NO HEAT EXCHANGER)



P/N 33205..... Ea.

MUFFLER WITH 8" TAILPIPE & HEAT EXCHANGER



2" Dia. Inlet & Outlet..... P/N 33206-1..... Ea.
2-1/2" Dia. Inlet & Outlet..... P/N 33206-2..... Ea.

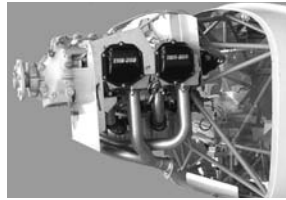
When ordering muffler with heat exchanger, advise if inlet & outlet pipe diameter other than 2" or 2-1/2" is preferred.

When ordering muffler with heat exchanger, advise diameter of inlet and outlet pipe preferred (2", 2-1/2" or other).

HOMEBUILDERS SPECIAL STACKS

Designed to fit Lycoming engines O-235 to O-360. Mild steel. These stacks do not fit Pitts Special. Applicable to many home builts. Wt. 7.25 lbs.

P/N 08-01900-1.....



STAINLESS STEEL CROSSOVER EXHAUST SYSTEMS

A exhaust system allows your engine to breathe properly by reducing back pressure and by picking up the correct firing order of the cylinders. This results in increased HP compared to an untuned exhaust. The added HP will

be evident as higher takeoff RPM, higher cruise speed and lower fuel consumption.

This crossover system fits all Lycoming engines from O-235 to IO-360 (180 HP) with bottom or aft mounted carburetors or fuel injection controllers. It is designed for tight cowling and in most cases no cowling modification will be necessary. If fit is the problem, custom tighter crossover systems are available by special order (Additional charges may apply). The system has slip joints between cylinders and ball joints where tail pipes or mufflers connect to collector tubes to prevent cracking due to expansion and vibration and to allow for positioning of the tail pipes. The exhaust system can be ordered in the following combinations:

1. With straight tail pipes
2. With two mufflers (no heat exchangers)
3. With two mufflers (one heat exchanger)
4. With two mufflers, both with heat exchangers.

All mufflers include removable 8" tail pipes. Heat shrouds have one inlet and one outlet for 2" or 2-1/2" flex tubing

Compression Springs - used on Exhaust System Ball Joints. 6 required per system. P/N 33703.....

STANDARD CROSSOVER SYSTEM

Basic system with all Collector Tubes (Without Tail Pipes)

P/N 33251.....

ADD OPTIONS:

Straight Tailpipes (14")..... P/N 33204..... Pr.
Muffler w/8" Tailpipe (no heat exchanger) P/N 33205..... ea
Muffler w/8" Tailpipe & Heat Exchanger. P/N 33206-1..... ea

COMPLETE STANDARD CROSSOVER SYSTEM PRICES

Basic System with Two Straight 14" Tailpipes.

Ass'y # 33270.....

Basic System for O-320B w/o Tailpipes. Ass'y # 33270-1.....

System with 2 Mufflers, Removable 8" Tailpipes & No Heat Shrouds.

Ass'y # 33272.....

System w/2 Mufflers, 1 Heat Shroud for either Cabin heat or Carb.

heat..... Ass'y # 33274.....

System w/2 Mufflers, Both w/ Heat Shrouds for Cabin heat & C arb.

heat..... Ass'y # 33276.....

Stainless Crossover Systems for IO-360 (200HP)

Please specify front (35), bottom (40), or rear injector (45)

P/N 08-057--.....

(Does not include tailpipes or heat muffs)

SPECIAL CROSSOVER SYSTEM FOR VERY TIGHTLY COWLED AIRCRAFT

Designed for the Thorpe T-18, RV-6, 7 7 8, Mustang II, and others using Lyc O-320 to O-360 engines

Basic System with all Collector Tubes — Please furnish exact engine designation to insure proper fit. P/N 33250.....

Special Mufflers for the T-18 with Heat Shrouds for Cabin Heat and Carb. Heat. P/N 33250-1..... Ea.

Special Tailpipes for the T-18 (to be used when mufflers are not used). Comes with same ball joint as the mufflers and an attaching bracket. P/N 33250-2..... Pr.

NOTE: PRODUCTS ON THIS PAGE ARE FOR EXPERIMENTAL AIRCRAFT AND ARE NOT FAA APPROVED. ALL EXHAUST SYSTEMS ARE SPECIAL ORDER AND ARE NON RETURNABLE



EXHAUST SYSTEMS

EXHAUST SYSTEM FOR OSPREY AIRCRAFT



This stainless steel exhaust system is specifically designed for the Osprey Aircraft. Ideal for amphibians as the tailpipe exits vertically upward. Fits aircraft using the following engines: O-235 thru O-360. RH & LH Stacks Only

P/N 33420.....

ADD OPTIONS:

Muffler Only P/N 33422.....
Muffler with Heat Exchanger P/N 33424.....

EXHAUST SYSTEM FOR CONTINENTAL O-200



This universal stainless steel exhaust system is designed for experimental aircraft using Continental A65 thru O-200 engines. Consists of 2 manifolds, left hand manifold has heat shroud with 2-1/2" connection for carb heat. Muffler outlet are 3" long. Tailpipe extensions may be required, sold separately

Mufflers P/N 33401
8" Tailpipe Extensions. Furnished with slip joint and pin clamp.
P/N 33402.....

THIS SYSTEM IS PATTERNED AFTER A CESSNA 150 SYSTEM, BUT WILL NOT FIT A CESSNA 150 OR 152.

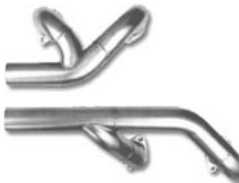
EXPRESS AIRCRAFT EXHAUST MANIFOLDS Y-STYLE



Fits Lycoming IO-540 (Angle Valve Engine) (Includes Custom 2-1/4" Tailpipes With Cabin heat shroud) (Optional studding to increase cabin heat available)
P/N 08-02105.....

WHEN ORDERING EXHAUST SYSTEMS, PLEASE SPECIFY COMPLETE MODEL NUMBER & HP OF ENGINE AND AIRCRAFT TYPE

STAINLESS STEEL STACKS FOR PUSHER TYPE AIRCRAFT

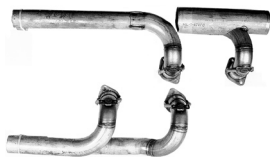


Designed specifically for tightly cowled engines. Exhaust fits inside of intake tubes.

Applicable to:
For Continental C-85 thru O-200
P/N 33601.....

For Lycoming O-235 thru O-360 P/N 33602.....

COZY MARK IV PUSHER EXHAUST SYSTEM



This custom stainless exhaust system was designed specifically for the Cozy Mark IV aircraft.

For Lycoming O-235 to O-360 (180 HP or less)
P/N 33702.....

For Lycoming IO-360 (200 HP) Angle Valve Engine
P/N 33702-1.....

Replacement Cozy Extension Spring
P/N 33704..... ea



NOTE: PRODUCTS ON THIS PAGE ARE FOR EXPERIMENTAL AIRCRAFT AND ARE NOT FAA APPROVED. ALL EXHAUST SYSTEMS ARE SPECIAL ORDER AND ARE NON RETURNABLE

EXHAUST SYSTEM COMPONENTS

Fabricate your own exhaust system with these precision-formed type 321 stainless steel components.

STAINLESS STEEL 45° & 90° BENDS



| Tube Size | P/N | Radius | Angle | Price |
|---------------|-------|--------|-------|-------|
| 1-1/2" X .035 | 33241 | 2-1/2" | 90° | . |
| 1-1/2" X .035 | 33242 | 2-1/2" | 45° | . |
| 1-3/4" X .049 | 33236 | 1-3/4" | 90° | . |
| 1-3/4" X .035 | 33243 | 2-7/8" | 90° | . |
| 1-3/4" X .035 | 33245 | 4" | 90° | . |
| 1-3/4" X .035 | 33237 | 5-1/2" | 90° | . |
| 1-3/4" X .035 | 33244 | 2-7/8" | 45° | . |
| 2" X .049 | 33238 | 2-1/2" | 90° | . |
| 2" X .035 | 33246 | 4" | 90° | . |
| 2-1/8" X .049 | 33239 | 2-3/4" | 90° | . |
| 2-1/4" X .049 | 33240 | 2-3/4" | 90° | . |
| 2-1/2" X .049 | 33247 | 4" | 90° | . |
| 3" X .049 | 33248 | 4-1/2" | 90° | . |

STAINLESS STEEL 180° "U" BENDS



180° "U" Bends w/ odd or even leg lengths.

| Tube Size | P/N | Radius | Angle | Leg Length | Price Each |
|---------------|-------|--------|-------|------------|------------|
| 1-1/2" X .035 | 33260 | 2-1/2" | 180 | 6"6" | . |
| 1-1/2" X .035 | 33262 | 2-1/2" | 180 | 10"10" | . |
| 1-1/2" X .035 | 33261 | 2-1/2" | 180 | 11"14" | . |
| 1-3/4" X .035 | 33265 | 2-7/8" | 180 | 6"6" | . |
| 1-3/4" X .035 | 33264 | 2-7/8" | 180 | 10"10" | . |
| 1-3/4" X .035 | 33263 | 2-7/8" | 180 | 11"14" | . |

STAINLESS SWIVEL BALL JOINTS - CLAMP TYPE



| Tube I.D. | P/N | Male Sz | Female Sz | Price |
|-----------------|-------|---------|-----------|-------|
| 1-3/4" X 1-3/4" | 33231 | 1-3/4" | 1-3/4" | . |
| 1-3/4" X 2" | 33232 | 1-3/4" | 2" | . |
| 2" X 2" | 33233 | 2" | 2" | . |
| 2-1/2" X 2-1/2" | 33234 | 2-1/2" | 2-1/2" | . |
| 2-3/4" X 2-3/4" | 33235 | 2-3/4" | 2-3/4" | . |



CUSTOM AIRCRAFT HARDWARE KIT - Ball Joint Hardware Kit.
Kit Includes: (3) Nuts (3) Bolts (3) Washers (3) springs Fits 33231 thru 33234
P/N 08-07168.....

HYDRO-FORMED SLIP JOINTS - TWO PIECE UNIT 4" LONG



| Slip Joint Size | P/N | Expanded Length | Price |
|-----------------|-------|-----------------|-------|
| 1-1/2" | 33221 | 2-3/4" | . |
| 1-5/8" | 33226 | 2-5/8" | . |
| 1-3/4" | 33222 | 2-5/8" | . |
| 2" | 33223 | 2" | . |
| 2-1/4" | 33227 | 2" | . |
| 2-1/2" | 33224 | 2-3/8" | . |
| 3" | 33225 | 2-1/4" | . |

STUB EXHAUST STACKS

Stainless tubing 6"L welded onto stainless exhaust flange.

1-1/2"x .035 for Continental (doesn't fit O-240)
P/N 13352.....

1-3/4"x .035 for Lyc. P/N 13354.....



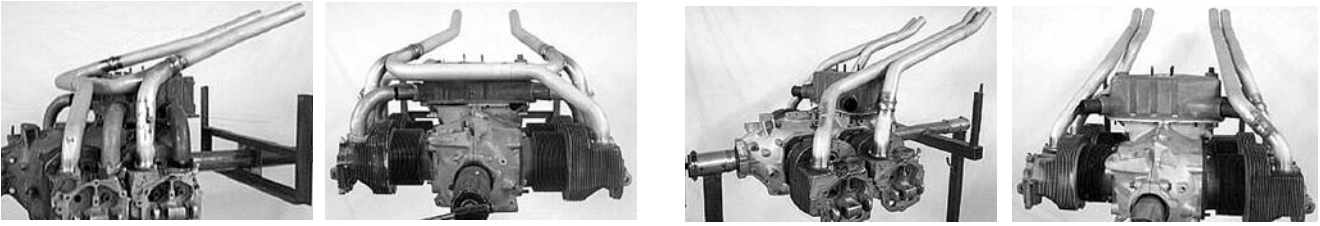
STAINLESS TUBING FOR EXHAUST STACKS

Stainless type 321 welded tubing for exhaust stacks.

| Tube Size (O.D. x Wall) | P/N | Price per Ft. | Tube Size (O.D. x Wall) | P/N | Price per Ft. |
|-------------------------|----------|---------------|-------------------------|----------|---------------|
| 1-1/2" x .035 | 03-16300 | . | 1-3/4" x .035 | 03-16400 | . |
| | | | 2" x .035 | 03-16500 | . |

EXHAUST SYSTEMS

VETTERMAN RV EXHAUST SYSTEM



Vetterman Exhaust has been manufacturing exhaust systems for the Van's Aircraft RV series since 1990. Exhaust systems for all RV models & Van's approved engine models are available. All systems are manufactured from MIL Spec 321 stainless steel, which is mandrel bent, trimmed to length and tack welded on a Lycoming engine. This method assures the best fit possible. All systems incorporate ample slip & ball joints which greatly reduces breaking potential. All systems include blow proof gaskets, stainless exhaust nuts & washers for installation. Also include tail pipe mounting kits or pipe support brackets. Some systems also include a cabin heat muff.

| AIRCRAFT | DESCRIPTION | P/N | PRICE |
|-------------|----------------------------------|----------|-------|
| RV-3 | O-320 Conical Mount 4 pipe sys. | 08-00583 | . |
| RV-3 | O-320 Dynofocal Mnt. 4 pipe sys. | 08-00584 | . |
| RV-3 | O-360 Dynofocal Mnt. 4 pipe sys. | 08-00585 | . |
| RV-4 | O-320 Conical Mount 4 pipe sys. | 08-00586 | . |
| RV-4 | O-320 Dynofocal Mnt. 4 pipe sys. | 08-00587 | . |
| RV-4 | O-360 Dynofocal Mnt. 4 pipe sys. | 08-00588 | . |
| RV-4 | O-320 Dynofocal Mnt. X-over sys. | 08-00589 | . |
| RV-4 | O-360 Dynofocal Mnt. X-over sys. | 08-00590 | . |
| 7-7A,8-8A, | *Includes tail pipe mounting kit | 08-00591 | . |
| RV-6,7,8,9A | *Includes tail pipe mounting kit | 08-00592 | . |
| RV 7-7A | *Includes tail pipe mounting kit | 08-00593 | . |
| RV8 | *Includes tail pipe mounting kit | 08-00594 | . |
| RV 8A | *Includes tail pipe mounting kit | 08-00595 | . |



NOTE: EACH OF THESE SYSTEMS WILL NOT INTERCHANGE BETWEEN AIRCRAFT AND ENGINE MODELS. THESE SYSTEMS ARE DESIGNED AND INTENDED FOR USE ON RV AIRCRAFT ONLY. PRICES DO NOT INCLUDE SHIPPING CHARGES.

CUSTOM PVC MOCK UP KITS



Finished PVC Mock Up

Finished Exhaust System

- 18+ HP increase in some applications from a standard muffler system.
- These kits allow you to design and build your own system when there is not any other available to fit your airframe & engine combo.

Kit comes with 1 or 2 collectors and 4 or 6 stub risers, depending on engine size and style. Components are sized to fit 1.1/2" schedule 40 PVC, which is same OD (1.3/4") as finished primary tubes used. (Some Continental and Rotax may use different size PVC which will be specified in kit instructions) All PVC pipe and bends needed are standard stock at any hardware store. Kit comes with full instructions and details about equal length of tubing to collector theory and tips to obtaining the most horsepower depending on your engine style. When you send your completed mockup to us we build a fixture around it and build an identical system using polished 321 stainless steel. Kits come complete with hardware, clamps, cabin and carb heat shrouds. After the order feel

free to call or E-mail us with any questions while building the mock up. When the system arrives customers will be in direct contact with a fabricator to ensure correct placement and size of components like ball joints, heat shrouds and parts and to answer any questions. Kits available for 4 and 6 cylinders: * Rotax * Continental *Lycoming *Jabiru

4 into 1.....P/N 08-00673.....
 Dual 3 into 1.....P/N 08-06158.....

NICROCRAFT EXHAUST PARTS

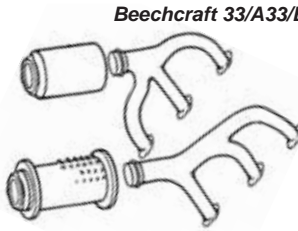
NICROCRAFT EXHAUST PARTS BUILT TO TAKE THE HEAT

Aircraft Spruce & Specialty Co. offers fully overhauled and factory new exhaust components for use in most general aviation aircraft. Manufactured by Wall Colmonoy Corp. Nicrocraft exhaust parts are built to the latest original equipment specifications. Heat-resistant 321 stainless steel is used in the construction of all new parts. Bellows are made of Inconel alloy for superior heat resistance. Individual exhaust components and complete systems are available for virtually all single and twin engine Cessna, Piper, Beech, Bellanca, Grumman, Mooney, and Rockwell aircraft. (Please provide your complete aircraft and engine model and serial numbers, year of aircraft, and exact components required.) Most components are available for immediate shipment.

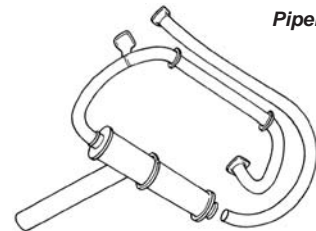
FACTORY NEW EXHAUST PARTS



Cessna 180/182/185



Beechcraft 33/A33/B33/35



Piper PA-18

CESSNA 150 (MODELS G-L)

| Aircraft | Description / OEM # | Part No. | Price |
|------------|--------------------------|----------|-------|
| Cessna 150 | Muffler RH / #0450400-26 | 8300-4 | . |
| Cessna 150 | Muffler LH / #0450400-3 | 8300-3 | . |

CESSNA 152/A152

| Aircraft | Description/OEM # | Part No. | Price |
|--|-------------------|----------|-------|
| Cessna 152 (S/N 735-975) & A152 (S/N 978 & up) | Muffler/#454009-5 | CEM0025 | . |
| | Muffler/#454009-6 | CEM0024 | . |

CESSNA 170/172

| Aircraft | Description / OEM # | Part No. | Price |
|-----------------|-------------------------|----------|-------|
| C170,172, A | Muffler LH / #0550157-9 | 221-9 | . |
| Cont 0-300/C145 | MufflerRH / #0550157-32 | 221-32 | . |

CESSNA 172B-H/175

| Aircraft | Description / OEM # | Part No. | Price |
|--------------------------|----------------------|----------|-------|
| Cessna C172B-H & 175 B-D | Muffler LH&RH / # | 568-110 | . |
| Cessna R172 | Muffler / #1455009-3 | CEM0023 | . |

CESSNA 172

| Aircraft | Description/OEM # | Part No. | Price |
|------------|-------------------|------------|-------|
| C172 O-320 | Stack/#1754007-1 | W1754007-1 | . |
| C172 O-320 | Stack/#1754008-1 | W1754008-1 | . |
| C172 O-320 | Stack/#1754009-1 | W1754009-1 | . |
| C172 O-320 | Stack/#1754010-1 | W175010-1 | . |

CESSNA 180/182/185

| Aircraft | Description / OEM # | Part No. | Price |
|------------------------------------|----------------------------|----------|-------|
| Cessna C180,C182, & 185 late model | Muffler/#0750161-28/89 | CEM0002 | . |
| 180B,C,D,E,F | Heat Muffler 0750130-44 | CEM0001 | . |
| 182B,C,D,E,F | Heat Muffler 0750130-9 | CEM0006 | . |
| | Heat Muffler 0750130-12 | CEM0009 | . |
| 210B s/n58086&up to M | Heat Muffler LH/#1250250-5 | 650-43 | . |
| C210B | Muffler RH 1250251-16 | 650-92 | . |
| C210B | Collector LH 1250263-2 | 650-25 | . |
| C210B | Collector RH 1250264-2 | 650-36 | . |

BEECHCRAFT 33/A33/B33/35

| Aircraft | Description / OEM # | Part No. | Price |
|-----------------------------|--------------------------|----------|-------|
| | Heat Muffler RH/#186-30 | 186-30 | . |
| Beechcraft 33, A33, B33, 35 | Muffler RH / #189 | 189 | . |
| | Stack Assy RH/#35-950116 | BES-0001 | . |
| | Stack Assy LH/#35-950118 | BES-0002 | . |

BEECHCRAFT C33A/36/A36

| Aircraft | Description / OEM # | Part No. | Price |
|-----------------|------------------------------|----------|-------|
| C33A,E33A,F33A | Muffler LH/#701-20 | 701-20 | . |
| C, S35, 36, A36 | Heat Muffler RH/#701-19 | 701-19 | . |
| C33A, 36, A56 | Collector LH / #35-9016-1S | 08-00853 | . |
| C33A, 36, A36 | Collector RH / #35-9016-3/5S | 08-00854 | . |

BEECHCRAFT H35/P35 THRU S/N D-7108

| Aircraft | Description / OEM # | Part No. | Price |
|-----------------|------------------------|----------|-------|
| Beechcraft H35, | Heat Muffler LH/492-43 | 492-43 | . |
| J. K. M. N. P35 | Muffler RH/#492-27 | 492-27 | . |

PIPER PA-12, 14, 16, 20, 22, 25

| Aircraft | Description / OEM # | Part No. | Price |
|--------------------------|---------------------|----------|-------|
| PA-12, 14,16, 20, 22, 25 | Muffler / #10308-03 | PIM0003 | . |

PIPER PA-18

| Aircraft | Description / OEM # | Part No. | Price |
|------------|---------------------|-------------|-------|
| Piper PA18 | Muffler / #12433-15 | PIM0006-100 | . |

PIPER PA-28

| Aircraft | Description / OEM # | Part No. | Price |
|------------------------------------|--|----------|-------|
| PA-28-140, 150, 160 | -140 Muffler w/o shroud / #99482-00 | PIM0001 | . |
| PA-28-151,161,180,181 | Muffler (2 req.)/#66894-03 | PIM0007 | . |
| PA-28R,180, 200, 201, 236 | Muffler (2 req.)/#67517-00 3 req. for 236 | PIM0004 | . |
| PA32-300,32-760001 & up. PA32-R300 | Muffler (3 req.) 67517-00 | PIM0004 | . |

PIPER34-200 SENECA I

| Item | OEM No. | Part No. | Price |
|--------------------------|-----------|----------|-------|
| Left hand Tailpipe Core | 78463-10 | 08-05885 | . |
| Right hand Tailpipe Core | 78-463-18 | 08-05886 | . |

OVERHAULED EXHAUST PARTS

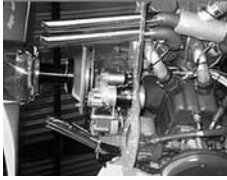
| Aircraft | Description / OEM# | Part No. | Price |
|--|--|------------|-------|
| Beechcraft C33A, E33A, F33A, C, S35, 36, A36 | Heater Muffler RH w/o shroud / #701-19 | 701-19R | . |
| Cessna 210B | Heater Muffler LH / #1250250-15 | 1250250-5R | . |
| Piper PA-18 | Muffler / #12433-15 | 12433-15R | . |

EXHAUST SYSTEMS



LONG-EZ EXHAUST SYSTEM

Long-EZ exhaust system fits all Lycoming 4 cylinder engines.
P/N 08-00832.....



LONG-EZ EXHAUST SYSTEM INSIDE THE COWL

With this configuration the exhaust tips are located where the cooling air exits. This design eliminates cutting the cowling for exhaust exit and improves propeller efficiency by moving the exhaust pulses inboard, closer to the center of the prop hub. Fits Lycoming O-320 & O-360 parallel valve engines.
P/N 08-00833.....

BERKUT 4 PIPE EXHAUST SYSTEM

Fits all Lycoming 4 cylinder engines.
P/N 08-00834.....



BERKUT 6 PIPE EXHAUST SYSTEM

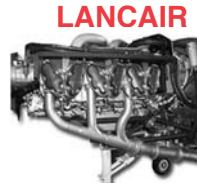
Fits 6 cylinder Berkut only.

P/N 08-00835.....



VELOCITY EXHAUST SYSTEM

Velocity exhaust system fits 6 cylinder Lycoming parallel valve and angle valve engines.
Parallel.....P/N 08-00836.....
Angled.....P/N 08-00837.....



LANCAIR LEGACY EXHAUST SYSTEM

Lancair legacy exhaust system, left & right hand manifolds with tailpipes and cabin heat shroud. Fits IO-550 Continental.
Exh. Sys. 33805-1.....P/N 08-00838.....
Exh. Sys. 470-550.....P/N 08-02103.....
Legacy Exhaust..... P/N 08-02104.....

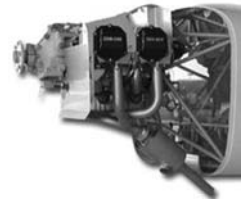


GLASAIR I & II CROSSOVER EXHAUST SYSTEMS

Fits Lyc. O-320 to O-360 with vertical induction.
P/N 08-00839.....
Fits Lyc. engines w/ horizontal induction up to 180HP
P/N 08-00840.....

GLASTAR CROSSOVER EXHAUST SYSTEM

Includes exhaust system with (1) heater muffler, (1) non-heater muffler and tailpipes. Fits Lycoming O-235 and O-360 with vertical induction.
P/N 08-00842.....



EXPERIMENTAL SUPER CUB CROSSOVER EXHAUST SYSTEM



PN 08-02100-Fits Lycoming O-320 (Vertical Induction Intake) (Must use "short" miniature light weight Sky Tec starter for clearance) (Optional studding to increase cabin heat available)
PN 08-02102-Fits Lycoming O-360 (Vertical Induction Intake) (Must use "short" miniature light weight Sky Tec starter for clearance) (Optional studding to increase cabin heat available)
P/N 08-02100.....
P/N 08-02102.....

EP



2" DIAMETER 90° TUBE

This unit is designed to slide over the end of the 2" O.D. tube protruding from a cabin heat box that extends through the firewall. The short end of this unit is expanded to 2" I.D. Two stainless steel clamps are furnished with the unit. If you use scat tube, the 90° angle allows you to run the scat tube parallel to the firewall and away from undesirable areas (brake pedals, etc.) Constructed of seamless 6061T4 .028 wall tube. Weight: 1.4 oz.
P/N 08-00863.....

undesirable areas (brake pedals, etc.) Constructed of seamless 6061T4 .028 wall tube. Weight: 1.4 oz.



2" DIAMETER "Y" TUBE

"Y" tube is designed to be used with the Homebuilders cabin heat box to make warm air available to 2 or more locations in the aircraft. Constructed of seamless 2024T6 tube, it weighs only 2 oz. These tubes are expanded to 2" I.D. on the inlet end to slip over and clamp to the 2" O.D. tube of the cabin heat box. Due to the very light weight, "Y" tubes can be installed in scat tubing as well as attaching directly to cabin heat boxes. One stainless steel clamp is included with "Y" tube. Due to the light weight of only 1.7 oz., the non-expanded Y-tube can be placed anywhere in a run of tubing to give more options for heating additional areas of the aircraft. Furnished w/2 stainless steel hose clamps

Standard "Y" tube.....P/N 08-04100.....
Non-expanded "Y" tube.....P/N 08-04130.....

2 1/2" INLET AND 2" OUTLET HOMEBUILDERS CABIN HEAT BOX



This box is identical to the deluxe stainless steel cabin heat box, except that the inlet is 2 1/2" OD so that it can be used on larger heat muff applications where the builder is using 2-1/2" scat tubing. This box is currently being used on the MICCO certified aircraft. Weight is 7.2 oz.
P/N 08-04013.....

IN-LINE HEATER/DEFROSTER VALVE

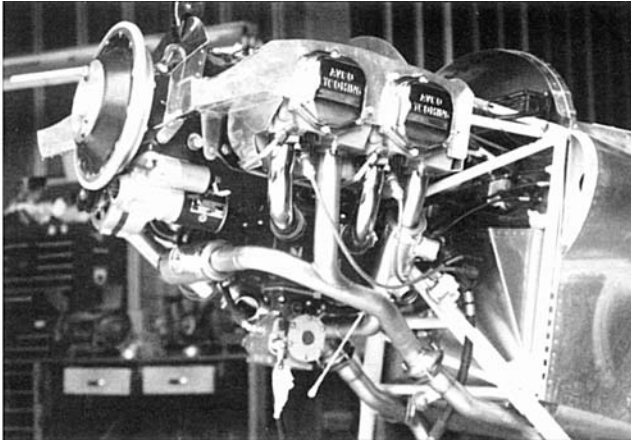


This in-line valve connects to 2" SCAT ducting. It comes complete with cable end and can be hooked up in any combination to direct air to either heater outlets or defrost outlets. Actuating lever is adjustable to any position. Very popular on RV's & other home-built aircraft.

P/N 08-00053.....

EXHAUST SYSTEMS

SNOWLINE RV-4 CROSSOVER EXHAUST SYSTEM

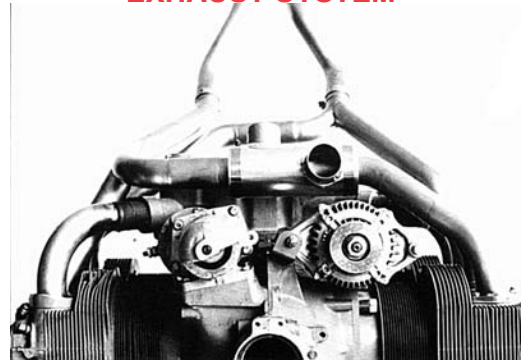


The material used on this System is 1-3/4" O.D. x .035 wall 321 stainless steel. This system is designed for use with Lycoming engines up to 180 H.P. Bending is performed using an inside mandrel which the tube is drawn over during bending to maintain the inside diameter. Flanges are made from 1/4" Stainless Steel. This heavy material greatly reduces warping and cracking. Tail pipes are fitted with a stainless steel spring-type swivel ball joint. This flexible joint not only allows for easy alignment of the tail pipes through the opening in the bottom cowling; but most important, this joint allows the engine and tail pipes to move independently, and greatly reduces the chance of cracking. One heat muff has been provided on the front cross-tube. This muff is intended for carburetor heat. If an injection system is being used, this muff can be used for cabin heat. An optional cabin heat muff can be ordered when carburetor heat requires the use of the standard heat muff. All hardware is provided to install the system. Stainless steel nuts, bolts, washers, blow-proof exhaust gaskets, two stainless clamps for attaching tail pipes to the firewall or engine mount. Building brackets and positioning mixture and throttle cables is always a hassle. A bracket which simply bolts to the engine case and positions the cables in front of the mixture and throttle arms for easy attachment is available as an option. A U-type clamp attaches cable housing securely in place

RV-4 Crossover Exhaust System P/N 08-05785

NOTE: THIS SYSTEM WILL NOT FIT LYCOMING, O-320-H2AD OR H3AD ENGINES

SNOWLINE RV-6 & RV-6A CROSSOVER EXHAUST SYSTEM



The material used on these systems is 1-3/4" O.D. x .035 wall 321 stainless steel tubing. 2 models are available; one for Lycoming engines up to 180 H.P. and the other for the Lycoming IO-360 (200 H.P. engine). Bending is performed using an inside mandrel which the tube is drawn over during bending to maintain the inside diameter. Flanges are made from 1/4" stainless steel. This heavy material greatly reduces warping & cracking. Tail pipes are attached to the header with a slip joint. Simply slide the tail pipes onto the header, position the end of the pipe as desired in the bottom opening, and attach with the stainless steel retaining clamp. One heat muff has been provided on the front cross-tube. This muff is intended for carburetor heat. If an injection system is being used, this muff can be used for cabin heat. An optional cabin heat muff can be ordered when carburetor heat requires the use of the standard heat muff. All hardware is provided to install the system. Stainless Steel nuts, bolts, washers, blow-proof gaskets, 2 stainless clamps for attaching tail pipes to the firewall or engine mount. Building brackets and positioning mixture and throttle cables is always a hassle. A bracket which simply bolts to the engine case and positions the cables in front of the mixture & throttle arms for easy attachment is available as an option. U-type clamp attaches the cable housing securely in place.

RV-6/RV-6A Crossover Exhaust Sys. (To 180 H.P.)
P/N 08-05790.....

RV-6/RV-6A Crossover Exhaust Sys.* (To 200 H.P.)
P/N 08-05795.....

Optional Cabin Heat Muff..... P/N 08-00679.....
***Will not work with front mounted injectors**

The RV-6/RV-6A exhaust systems are recommended for these aircraft only.

For other experimentals, the RV-4 system may fit better under cowls as it is built tighter to the engine.

REAL PREMIUM SILICONE VALVE COVER GASKETS

REAL are twice as thick as typical gaskets and have been hot oil and dry heat tested at 300°F. Only REAL gaskets seal uneven surfaces, eliminate corrosion, and reduce maintenance costs. They may be reused, are installed dry, and maintain screw torque. Indefinite shelf life. Highly recommended by Rutan Aircraft Factory.



| Part No. | Application | Price Ea. | Part No. | Applicaion | Price Ea. | Part No. | Application | Price Ea. |
|----------|--|-----------|-----------|---|-----------|-----------|--|-----------|
| RG-75906 | 0-235; 0-290; O,IO,LIO-320; O-340;O-360-A,B,C,D; IO-360-B; HO-360-A,B;HIO-360-B; VO,IVO-360;O-540-A,B,E,F,G; IO-540-C,D,J,N,R. | | RG-71450 | IO-540-B,E,M; TIO-540-A; IGO, IGSO-540-B. | | RG-534857 | O-470;IO,TSIO-470;IO,TSIO-520 | |
| | | | RG-530162 | A-65; C-75, 85, 90, 145, 175; O-200; O-300. | | RG-632310 | IO, TIO, TSIO-360. | |
| RG-67193 | IO-360-A,C,D; AIO-360-A,B; HO-360-A,C,D; TIO-360-A; LIO-360-C1E6;VO,GO-435; GO-480; IO,VO,TVIO-540; IO-720; TVO-435; | | RG-532451 | E-185; E-225; IO-346; O-470-A,E,J; IO-470-J,K | | RG-632459 | GTSIO-520; TSIO-520-BE. | |
| | | | | | | RG-17727 | 4A-235, 6A-335, 6A4-150, 6A4-165, 6A4-200, 6A5-335, 6A5-350. | |

GASKETS



"O" SERIES LYCOMING VALVE COVER GASKETS

These homebuilder's Lycoming valve cover gaskets replace the original cork gaskets which come standard on Lycoming O-235, O-320 and O-360 engines. These new gaskets are molded from high temperature silicone rubber and do not harden over time so they can be re-used again and again. This hi-tech silicone rubber offers a much lower compression set, so it is superior at maintaining an oil-tight seal for the life of the engine. NOT FAA approved. For experimental aircraft only.

P/N 08-01187



ANGLED VALVE "IO" SERIES LYCOMING VALVE COVER GASKETS

These gaskets are for the fuel injected "IO" series, sometimes referred to as the Angle Valve cylinder Lycoming, as well. These gaskets are molded from the same high-temperature silicone rubber as the "O" series gaskets above, and do not harden over time, so they can be reused again and again. This hi-tech silicone rubber offers a much lower compression set, so it is superior at maintaining an oil-tight seal for the life of the engine. They are not FAA approved and are not manufactured under a PMA. These are similar to Lycoming part number 67193 used on Angled valve Lycoming engines IO-360, IO-540, IO-720.

P/N 08-05882



RAPCO REPLACEMENT EXHAUST GASKETS

High quality, economical stainless and copper beaded gaskets. Extra thick spiral wound style available "Blow Proof"

| Style | RAPCO P/N | Use As Replacement For: | | | Use on These Engine Models | Our P/N | Price Each | |
|----------------------|--------------|----------------------------------|------------------|--------------|---|---|------------|---|
| | | OEM P/N | Airborne P/N | Superior P/N | | | | |
| Solid | RA-630365 | 630365 | N/A | SA630365 | IO-360-A, C, D, G, H, J, K | 08-05215 | . | |
| Spiral Wound | RA-970 | N/A | 970 | N/A | IO-360-A, C, D, G, H, J, K TSIO-360-A, B | 08-05270 | . | |
| CONTINENTAL Solid | RA-632837 | 632837 21493 | 157 | SA 632837 | A-65, A-75, C-85-12F, C-90-8F, 12F, 14F, -16F, E-165, E-185, E-225, O-200-A, B, O-300- A, C, D, O-470-A, E, J | 08-05237 | . | |
| | Spiral Wound | RA-627429 | 627429 | 999 | SA 627429 | E-165, E-185, E-225O-200-A, B, O-300-A, C, DO-470-A, E, J | 08-05229 | . |
| LYCOMING Solid | RA-631544 | 631544 537379 | 158 | SA631544 | O-470-B, G, K, L, M, P, R, S, U | 08-05244 | . | |
| | Spiral Wound | RA-628260 | 628260 | 972 | SA628260 | O-470-B, G, K, L, M, P, R, S, U, IO-470-D, U, V, TSIO-470-B TSIO-520-B, C, D GTSIO-520-C, D | 08-05260 | . |
| LYCOMING Solid | RA-75118 | 75118 73720 67196 65321 | 160 | N/A | 0-290, 0-320, IO-320, 0-340, 0-360, HO-260- B, IO-360-A, -B, -C, HIO-360-A, -B-C, VO- 435, TVO-435, GO-480, GSO-480, ISGO-480, O- 540-A, -B, -E, -G, IO-540-A, -C, -D, -G, -J, -K, IG0- 540-A, IGS0-540-A, 10-720-A | 08-05218 | . | |
| | Spiral Wound | RA-77611 | 77611 | 1000 | SL77611 | | 08-05211 | . |
| | Solid | RA-LW15619 | LW15619 74756 | 161 | SL15619 | TIO-541 | 08-05219 | . |
| | Spiral Wound | RA-LW15486 | LW15486 | 971 | N/A | | 08-05286 | . |
| | Solid | RA985 | 3503 | | | R-985-AN-1, -3, -4, -6, -6B, -10, 12, -12B, -14B | 08-64452 | . |

REPLACEMENT GASKET FOR WOODWARD GOVERNORS

| Part Name | Approved Replacement for Part No. | Model Eligibility | Part No. | Price |
|-------------------------------|--|--|----------|-------|
| Engine Accessory Drive Gasket | Woodward Gov. 206684 Pratt & Whitney 3039526 | PT6A-20/20A/-20B/-21/-25C/-27/-28/-34/-34AG/-34B/-36/-38/-41/-42/-42A/- 60A/-60AG/-61/-67A/-67AF/-67AG/-67B/-67D/-67R/-67T PT6A-45A/-45B/-45R/-65B/-65AG | 08-06264 | . |
| Governor Gasket | Woodward Gov. 206685 Pratt & Whitney 3118953-01 | PT6A-6/-6A/-6B/-11/-11AG/-15AG/-20/-20A/-20B/-34/-34AG/-34B/-36/-38/- 41/-42/-42A/-45/-45A/-45B/-45R/-60A/-60AG/-61/-65B/-65R/-65AG/-65AR/- 67/-67A/-67AF/-67AG/-67B/-67D/-67R/-67T/-110/-112/-121 | 08-07154 | . |



CARBURETOR AIR BOX GASKET FOR CESSNAS

OG031 GASKET (Carburetor Air Box Gasket) REPLACES CESSNA PART #0750142-1 Engine - Cessna 180 & 185 **Experimental only - not to be used on certified aircraft.** P/N 07-01308.....



2577256 PRECISION AIRMOTIVE GASKET PEX-1

Gasket part number 365533 is no longer available from Precision Airmotive. The new gasket, part number 2577258 is available and should be used in place of 365533. P/N 07-01312.....



LYCOMING S Propeller governor gasket for Lycoming 0-320 A & E Series engines. P/N 72053

EP

POLY-FIBER AIRCRAFT COATINGS

AIRCRAFT SPRUCE - WORLD'S LARGEST DISTRIBUTOR OF POLY-FIBER PRODUCTS



This FAA approved process utilizing Poly-Fiber Dacron polyester and the unique "Poly" line of finishes assures a beautiful, durable, weather-resistant cover job every time. Documented time tested results by the professionals. The Poly-Fiber Covering Process was issued Supplemental Type Certificate No. SA-1008-WE in 1965 and this number will apply to all aircraft.

Note: Formerly known as Stits covering process. Only Poly-Fiber materials may be used through the topcoat paint to comply with STC requirements. Poly-Fiber finishes are required for approval. Poly-Fiber is approved for use on most certified aircraft. To be sure, check the Master Eligibility List in the latest revision of Poly-Fiber Procedure Manual No. 1.

POLY-FIBER FABRIC

UNCERTIFIED LIGHT

1.7 oz., lightweight fabric recommended for covering ultralight aircraft. This fabric will be unstamped. It is not approved for certified aircraft except on plywood surfaces.

60" Width P/N 09-02001 /Lineal Yd.

MEDIUM WEIGHT

2.6 oz., standard fabric recommended for normal service on all types of aircraft regardless of speed, wing loading or horsepower.

70" Width P/N 09-01600 /Lineal Yd.

HEAVY DUTY

3.4 oz., Recommended for severe operating conditions and very high wing loading aircraft where a very tough, durable, low elongation, high tension fabric is required and weight is not critical. Great for agricultural, aerobatic and bush planes.

70" Width P/N 09-01700 /Lineal Yd.

POLYESTER PADDING

Non-woven, 45" wide, 3 oz. per yard. Used under fabric on wing leading edge and turtle deck to smooth rough surfaces.

P/N 09-01750

POLY-FIBER POLYESTER FINISHING TAPES

* Style - L indicates Linear Cut *Style - B indicates Bias Cut.

| Part No. | Style # | Roll Width | Roll Length | Price. |
|----------|---------|------------|-------------|--------|
| 09-02200 | Med. | 1" | 25 yds. | . |
| 09-02400 | Med. | 1-1/2" | 25 yds. | . |
| 09-02450 | Med. | 2" | 25 yds. | . |
| 09-02500 | Med. | 2" | 50 yds. | . |
| 09-02900 | Med. | 3" | 25 yds. | . |
| 09-03300 | Med. | 4" | 25 yds. | . |
| 09-03350 | Med. | 6" | 25 yds. | . |
| 09-02300 | Light | 1" | 25 yds. | . |
| 09-02350 | Light | 1-1/2" | 25 yds. | . |
| 09-02705 | Light | 2" | 25 yds. | . |
| 09-02700 | Light | 2" | 50 yds. | . |
| 09-03100 | Light | 3" | 25 yds. | . |
| 09-03400 | Light | 4" | 25 yds. | . |
| 09-03545 | Light | 6" | 25 yds. | . |
| 09-03565 | Bias | 2" | 25 yds. | . |
| 09-03570 | Bias | 3" | 25 yds. | . |
| 09-03580 | Bias | 4" | 25 yds. | . |

POLY-FIBER TAPES, CORD & THREAD

| | Item | P/N | Yds. Spool | Price |
|------------------|----------------|----------|------------|-------|
| Reinforcing Tape | 1/4" Wide | 09-03500 | 60 | . |
| | 3/8" Wide | 09-03600 | 60 | . |
| | 1/2" Wide | 09-03700 | 60 | . |
| Rib Lacing Cord | (Std. Round) | 09-03800 | 296 | . |
| | Rib Cord, Flat | 09-03810 | 500 | . |
| Sewing Thread | Machine | 09-03900 | 500 | . |
| | Hand | 09-04000 | 250 | . |

HEAVY INTER-RIB BRACING TAPE

Non-adhesive polyester twill tape for inter-rib bracing. Twice as strong as cotton tape. 36 yd. rolls. 1/2" Wide P/N 09-40912



AIRCRAFT FABRIC COVERING

Aircraft Fabric Covering is a must for anyone who wants to cover their own airplane. This 2-hour comprehensive video presents every aspect of the Poly-Fiber™ fabric covering process in detail, and in easy-to-understand language. From preparing the airplane for covering to spraying on the colors, you are guided step by step through the entire process by a professional EAA SportAir fabric instructor. When used in conjunction with the Poly-Fiber manual, Aircraft Fabric Covering removes the mystery surrounding this important process in the construction or restoration of your airplane. Information covered includes: • Preparing surfaces • Attaching the fabric • Tightening the fabric • Applying the first coat of Poly-Brush • Tying rib-lacing knots • Applying finishing tapes • Spraying UV-blocking chemical • Poly-Spray • Applying the color coats.

VHS P/N 13-40428

DVD P/N 13-02651

THE POLY-FIBER PRACTICE KIT

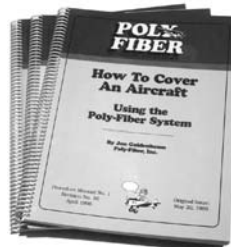


If you're thinking of building a fabric-covered airplane but are wondering what the covering process is like, this is the perfect answer. You get a practice frame, fabric, tapes, needles, rib lacing cord, thermometer, instructions, and all the coatings you need to work through the Poly-Spray stage. There's

enough of everything to do the entire process twice. You'll see how easy and enjoyable fabric covering really is.

P/N 09-06220

'HOW TO COVER AN AIRCRAFT USING THE POLYFIBER SYSTEM'



The Official Poly-Fiber how-to manual. It's a whole covering course in a book. A spiral-bound classroom, as the ads say. 151 pages of clear, non-jargon, step-by-step instruction, the entire Poly-Fiber system, from basic materials to blue ribbon. In plain language & has a sense of humor all its own. Entire Poly-Fiber catalog of products is included.

P/N 09-06000

Poly-Fiber Color Card #50 P/N 09-00234**FREE**

POLY-FIBER SOLVENTS & CLEANERS



METL-SOL C-2200 METAL SURFACE CLEANER

A strong solvent blend formulated to remove oil, silicone, wax and other contaminants from all metal surfaces before priming. Not for painted surfaces.

Qt. P/N 09-40710

Gal. P/N 09-40720



C-2210 PAINT SURFACE CLEANER

A mild solvent blend formulated to remove oil, silicone, wax and other contaminants from all painted or primed surfaces. Also removes tape gum from painted surfaces and acrylic windshield materials.

Qt. P/N 09-40810

Gal. P/N 09-40820



310 ALKALINE DETERGENT CLEANER

Highly recommended as an alkaline metal cleaner for removing greases and oils. Also a very good cleaner for interior cabins and vinyl upholstery, as well as a wide variety of household applications to remove waxes, dirt, and stains. Furnished as a concentrate for 32:1 dilution with water. Lemon scented and not harmful to your hands.

Qt. P/N 310-QT

Gal. P/N 310-1G

CS

POLY-FIBER AIRCRAFT COATINGS



POLY-BRUSH
FLAMMABLE A pink translucent, 1 part air drying resin used for the first 2 or 3 coats to penetrate and seal the fabric weave and assure good adhesion. Also used to attach the finishing tapes and reinforcing patches. Brush on initial coat thinned 3:1 with reducer. Subsequent coats are thinned 3:1 with reducer and applied with a spray gun to avoid brush marks & cut application time.

| | | | |
|------------------------------|-------------------------------|------------------------------|------------------------------|
| Tinted | | Untinted | |
| Quart.... P/N 09-04100 | Quart P/N 09-04110 | Gallon... P/N 09-04200 | Gallon... P/N 09-04210 |
| 5 Gal.... P/N 09-04300 | 5 Gal P/N 09-04350 | | |



POLY-SPRAY
FLAMMABLE A high-solids aluminum-pigmented, 1 part, air drying resin used after the Poly-Brush preliminary coating to protect fabric from UV and prepare for a smooth finish. Thin 4:1.
 Poly Spray (Qt.)..... P/N 09-04400.....
 Poly Spray (Gal.)..... P/N 09-04500.....
 Poly Spray (5 Gal.)..... P/N 09-04600.....



POLY-FIBER REDUCERS
FLAMMABLE A blend of solvents used for viscosity and drying control of Poly-Brush, Poly-Spray and Poly-Tone. Blend #R-65-75 is recommended as the standard reducer in normal weather, 65°-75°F. #RR-8500 is a retarder-reducer with slower drying time. Recommended for temp above 85° & warm humid weather.

| | | | |
|------------------------------|-----------------------------|----------------------------|----------------------------|
| #65-75 | | #RR-8500 | |
| Qt..... P/N 09-04700..... | Qt..... P/N 09-04750..... | Gal..... P/N 09-04800..... | Gal..... P/N 09-04850..... |
| 5 Gal..... P/N 09-04900..... | 5 Gal.... P/N 09-04950..... | | |



POLY-FIBER RETARDER
FLAMMABLE This blended solvent improves flow-out and prevents blushing under high temperature or high humidity conditions. Improves gloss.
 BR-8600 (Qt.)..... P/N 09-40830.....
 BR-8600 (Gal.)..... P/N 09-40840.....



POLY-TAK CEMENT
FLAMMABLE Excellent cement for all types of fabrics. Shelf life unopened is 2 years.
 Pint..... P/N 09-05110.....
 Quart..... P/N 09-05000.....
 Gallon..... P/N 09-05100.....



POLY-TONE® FINISH
FLAMMABLE A durable semi-gloss, 1-part, air drying flexible paint available in over 50 popular aircraft colors. Recommended as the standard finish for the Poly-Fiber cover process. Also may be used over suitably primed metal components of fabric covered aircraft. Fabric damage is more easily repaired when Poly-Tone finish is used. All pigments are non-bleeding or fading. Will not oxidize with age. Poly-Tone is always thinned to 4 to 1 with Poly Fiber Reducer (65-75 or 8500).

POLY-TONE FINISHES

| | | |
|---|------------------|---------------|
| 4 Whites: | QUART | GALLON |
| Insignia White (#105)..... | | |
| Juneau White (#110)..... | | |
| Glacier White (#117)..... | | |
| Daytona White (#120)..... | | |
| All other colors (Color Card #50)..... | No Charge | |

TO ORDER POLYTONE: Create the part number for the Polytone you require: *Color-PQ* (for Quart) or *Color-PG* (for Gallon)
Example: 100-PQ is 1 Quart of Color #100

POLY TONE U.V. BLOCKING
FLAMMABLE Used for additional UV Protection in ultralight airplanes. 1 fl.oz. blocks 1Quart Polytone
 1/2 Pint Blocker (8 fluid oz)..... P/N 09-02053

POLY TONE
FLAMMABLE RJ-1200 Quart..... P/N 09-05200



STITS EPOXY PRIMER (GREEN) EP-420/EP-430

FLAMMABLE This green primer is fast drying, corrosion inhibiting, and has application and curing qualities down to 35°F. It is a heavy duty chemical and solvent resistant amine cured primer. Mixing ratio is 2 parts base, 1 part catalyst. Order in kits.

| | |
|--|---------------------------------|
| Quart Kit (Yields 1/2 quarts) | |
| Incl. catalyst and reducer..... | P/N 09-00352 |
| Gallon Kit (Yields 2 1/2 Gallons) | |
| Incl. catalyst and reducer..... | P/N 09-00353 |
| Base: | Quart..... P/N 09-05605 |
| | Gallon P/N 09-05610 |
| Catalyst: | Pint..... P/N 09-05615 |
| | Quart..... P/N 09-05620 |
| Reducer E-500 (Reduce 50%) | Quart..... P/N 09-01163 |
| | Gallon P/N 09-01108 |



STITS EPOXY PRIMER (WHITE) EP-420/EP-430

FLAMMABLE This white heavy duty chemical and solvent resistant amine cured primer, the excellent primer from Stits is fast drying and corrosion inhibiting. It can be applied and cured to temperatures down to 35°F. Mixing ratio is 2 parts base, 1 part catalyst.

| | |
|--|--------------------------------|
| Quart Kit (Yields 2 1/2 quarts) | |
| Incl. catalyst and reducer..... | P/N 09-00285 |
| Gallon Kit (Yields 2 1/2 Gallons) | |
| Incl. catalyst and reducer..... | P/N 09-00438 |
| Base: | Quart P/N 09-05625..... |
| | Gallon P/N 09-05630..... |
| Catalyst: | Pint..... P/N 09-05615..... |
| | Quart..... P/N 09-05620..... |
| Reducer E-500 (Reduce 50%) | Quart..... P/N 09-01163..... |
| | Gallon P/N 09-01108..... |



STITS EPOXY VARNISH EV-400/EV-410

FLAMMABLE An excellent clear gloss epoxy varnish for interior and exterior use. It provides superior weather durability and excellent chemical and solvent resistance. Can be used over a one component varnish primer if desired. Mixing ratio is 2 parts base, 1 part catalyst. Can be ordered as a kit which includes base, catalyst and reducer, or each component separately.

| | |
|--|---------------------------------|
| Quart Kit (Yields 2-1/2 quarts) | |
| Incl. catalyst and reducer..... | P/N 09-00349..... |
| Gallon Kit (Yields 2-1/2 Gallons) | |
| Incl. catalyst and reducer..... | P/N 09-00350..... |
| Base: | Quart P/N 09-05645 |
| | Gallon P/N 09-05650 |
| Catalyst: | Pint..... P/N 09-05655 |
| | Quart..... P/N 09-05660 |
| Reducer E-500 (Reduce 50%) | Quart..... P/N 09-01163 |
| | Gallon P/N 09-01108 |



EPOXY ACCELERATOR EX-501

FLAMMABLE A chemical curing accelerator for use in EP-420 Epoxy Primer and EV-400 Epoxy Varnish according to directions on base component listing. Reduces polymerization time, not solvent evaporation.

| | |
|----------------|--------------------|
| 1/2 Pint | P/N 09-04650 |
|----------------|--------------------|



POLY-FIBER ESO ENGINE STORAGE OIL

FLAMMABLE A fine lubrication and preservative oil used to prevent corrosion in internal combustion engines during extended storage. MIL-21260.

| | |
|--------------|--------------------|
| Quart | P/N 09-42450 |
| Gallon | P/N 09-42455 |

POLY-FIBER 60"X 48" FINE MESH PAINT STRAINER CONES

| | |
|--|--------------------|
| | P/N 09-02115 |
|--|--------------------|

IMPORTANT NOTICE: Poly-Fiber and Randolph Coatings are now manufactured by Consolidated Coatings Co. and current colors do NOT all match original Randolph colors. If matching an old color is required, please match it to a current color card or send in a sample of old color for custom matching.



POLY-FIBER AIRCRAFT COATINGS



POLY FIBER AEROTHANE

A tough, flexible, high-gloss two part polyurethane especially formulated for fabric covered aircraft and marine surfaces subject to flexing loads. Recommended as a premium quality fabric finish over Stits Poly-Fiber covered aircraft. Wet look, high gloss. Aerothane requires catalyst, which is sold separately, and will be offered to you t the time of purchase. If you currently have an adequate supply please notify a sales rep or note it on you online order. Aerothane additives are also sold separatley, but must be requested as needed.

| AERO-THANE (All Paint 3/4 filled cans) | | | |
|--|----------------|-----------|-------|
| Size | Color | Part No. | Price |
| Quart | Insignia White | 105-AQ | . |
| Gallon | Insignia White | 105-AG | . |
| Quart | Juneau White | 110-AQ | . |
| Gallon | Juneau White | 110-AG | . |
| Quart | Glacier White | 117-AQ | . |
| Gallon | Glacier White | 117-AG | . |
| Quart | Daytona White | 120-AQ | . |
| Gallon | Daytona White | 120-AG | . |
| CLEAR AERO-THANE AQ-100 (All paints 3/4 filled cans) | | | |
| Size | Color | Part No. | Price |
| Quart Kit | Clear | 100-AQ-K | . |
| Quart Kit | Clear | 100-AG-K | . |
| 3/4 Quart Paint | Clear | AQ-100-QT | . |
| 3/4 Gallon Paint | Clear | AO-100-1G | . |

| AERO-THANE ADDITIVES | | | |
|--------------------------|----------|----------|-------|
| Description | Size | Part No. | Price |
| Urethane Catalyst U-865 | 1/2 Pint | 09-05400 | . |
| Urethane Catalyst U-865 | Quart | 09-05500 | . |
| Urethane Reducer UE-820 | Quart | 09-05600 | . |
| Urethane Reducer UE-820 | Gallon | 09-05700 | . |
| Urethane Retarder UR-826 | Quart | 09-05800 | . |
| Urethane Retarder UR-826 | Gallon | 09-05900 | . |

TO ORDER AEROTHANE:

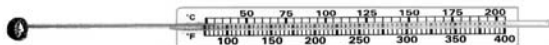
Create the part number for the Aerothane you require: Color-A-Q(quart) or G (gallon). Add -K (kit) if catalyst is required. Example: 100-A-Q-K is 1 quart of color #100 with catalyst included.

POLY-TONE/AEROTHANE ENAMEL FLATTENER

Used to make Aerothane and Enamel match the semi gloss finish of Polytone, or to make either Aerothane, Polytone and Enamel Full Military Flat.

Use 1 Pint, to flatten 1 QuartP/N 09-02052
Use 1 Qt. & 1 Pint, to flatten 1 Gallon.....P/N 09-02051

POLY-FIBER CALIBRATION THERMOMETER



Made specifically for calibrating irons. Printed with both Centigrade and Fahrenheit scales. Superior to open coil thermometers which may vary 30°. P/N 09-37475

BLACK BARON FABRIC IRON



The Black Baron Iron was designed specifically for use on small aircraft. The exclusive "roll bars" fit into fillets and undercambers. The flat sole is for sheeted and open structures, and its beveled edges provide constant heat without marks. The toe is rounded and flat best performance. The coating is 100% blackstone making the iron slide like butter, even on tacky surfaces with almost no adhesive buildup. An advanced hi-tech thermostat reduces temperature drift to only 5° – Ordinary irons can vary up to 40°, causing surface bubbles. Get the best – get Black Baron.

110VP/N 09-37411

CUSTOM SEALING FABRIC IRON



This Teflon coated sealing works on a variety of coverings and has adjustable heat setting. It's an AC unit which operates at 170 watts. The temperature range is approximately 100-350°F. Has a 1-year warranty.

110VP/N 09-37400

POLY-FIBER COLORS AVAILABLE

Each color group in chart below is listed from light to darker shades. Free Poly-Fiber color chart available on request. Color Card #50.

CLEAR

100.....(Aerothane Only)

White

105.....Insignia White
(Eagle White)
110.....Juneau White
117.....Glacier White
(Federal 17038)
120.....Daytona White

CREAM

132.....Sun Valley Ivory
125.....Tucson Cream
131.....Diana Cream

YELLOW

242.....Ag Cat Yellow
136.....Lemon Yellow
139.....Federal Yellow
145.....Lockhaven Yellow
240.....Champion Yellow
Titanine Yellow
140.....Orange Yellow
(Schweizer Yellow)
(Thrush Yellow)
(Orange Yellow)
143.....Cub Yellow
146.....J3 OEM Yellow

ORANGE

142A.....Eagle Yellow
(Orange)
182.....Pumpkin Orange
183.....International Orange
180.....Cruiser Orange

RED

189.....Madrid Red
187.....Eagle Red
191.....Pontiac Red
(Toreador Red)
190.....Tennessee Red
(Federal 11136)
(Insignia Red)
195.....Santa Fe Red
(Maroon)
196.....Boston Maroon
197.....Stinson Maroon

PURPLE

361.....Eagle Purple

BROWN

205.....Bermuda Tan
203.....Elsinore Brown

BLUE

165.....Lakeland Blue
170.....Bahama Blue
173.....AN Blue (True Blue)
(Federal 15102)
318M.....Piper Trainer Blue
177.....Eagle Blue
176.....Insignia Blue
(Federal 15044 Blue)

GREY/SILVER

210.....Polar Grey
220M.....Nevada Silver
213A.....Federal 36321 Grey
213.....Ag Cat Grey
219.....Jasper Grey
222M.....Rancho Silver

BLACK

215.....Dakota Black
(Eagle Black)

MILITARY CAMOUFLAGE

212.....Oak Green
208.....Federal 14087
(Olive Drab)
208A.....Federal 24064
Green

GREEN

157.....Cuby Sport Trainer
(Green)
151.....Everglades Green
156.....Portland Green
160.....Forest Green

GOLD

301M.....Reno Gold

TO ORDER POLY-FIBER COLORS:

Simply specify Poly-Fiber color number from chart above, either PolyTone or AeroThane, and quart or gallon.

BLACK AND DECKER - THE CLASSIC IRON



* Variable Steam - Variable steam to match the amount of steam to the fabric type * Anti-Drip - Anti-Drip system protects fabrics from water spotting even at low temperatures * Aluminum Soleplate - Aluminum soleplate for firm & smooth ironing * Teflon Select™ - Maximum heat for tough wrinkles and crisp creases * Metal Iron Design - Durability * Water Window * Pivoting Cord * Wattage: 1100
P/N 09-00980.....

IRON KIT



Includes large iron and standard small iron, a glass thermometer and silicone heat sink compound.
P/N 09-37420

SILICONE HEAT SINK COMPOUND



For more accurate thermal transfer during iron calibration. 1 oz. Syringe
P/N 09-37450

CS

ENAMELS – REPAIR KITS

FLAMMABLE

POLY-FIBER ENAMELS

A high gloss, fast drying enamel for use on primed metal or fiberglass. Enamels match all 50 Poly-Fiber, Aero-Thane and Poly-Tone colors. Not for use on fabric.

Applications: Thin 3 parts enamel to 1 part enamel reducer. For best results use over EP-420 Epoxy Primer.



4 Whites:
 Insignia White
 Juneau White
 Glacier White
 Daytona White
 All other colors (Color Card #50) **FREE**

QUART GALLON

| | |
|----------------------------------|--------------------------------|
| White | Brown |
| 105 Insignia White | 205 Bermuda Tan |
| 110 Juneau White | 203 Elsinore Brown |
| 117 Glacier White | |
| 120 Daytona White | |
| Cream | Blue |
| 132 Sun Valley Ivory | 165 Lakeland Blue |
| 125 Tucson Cream | 170 Bahama Blue |
| 131 Diana Cream | 173 AN Blue (True Blue) |
| | 318M Piper Trainer Blue |
| | 177 Eagle Blue |
| | 176 Insignia Blue |
| Yellow | Grey/Silver |
| 242 Ag Cat Yellow | 210 Polar Grey |
| 136 Lemon Yellow | 220M Nevada Silver |
| 139 Federal Yellow | 213A Federal 36321 Grey |
| 145 Lockhaven Yellow | 213 Ag Cat Grey |
| 240 Champion Yellow | 219 Jasper Grey |
| 140 Orange Yellow | 222M Rancho Silver |
| 143 Cub Yellow | |
| 146 J3 OEM Yellow | |
| Orange | Black |
| 142A Eagle Yellow / Orange | 215 Dakota Black |
| 182 Pumpkin Orange | |
| 183 International Orange | Military Camouflage |
| 180 Cruiser Orange | 212 Oak Green |
| | 208 Federal 14087 |
| | 208A Federal 24064 Green |
| Red | Green |
| 189 Madrid Red | 157 Cuby Sport Trainer |
| 187 Eagle Red | 151 Everglades Green |
| 191 Pontiac Red | 156 Portland Green |
| 190 Tennessee Red | 160 Forest Green |
| 195 Santa Fe Red | |
| 196 Boston Maroon | Gold |
| 197 Stinson Maroon | 301M Reno Gold |
| Purple | |
| 361 Eagle Purple | |

POLY-FIBER ENAMEL HARDENER/GLOSS ADDITIVE

Hardens, increases gloss, increases resistance to staining, chemicals, and chipping. Application: After reducing, add 8-16 oz. per gallon.

Pint P/N 09-00681



FLAMMABLE

POLY-FIBER ENAMEL REDUCER

Fast drying thinner for use with Classic Aero Enamel.

Applications:

Thin 1 part reducer to 3 parts enamel.
 Quart P/N 09-61200
 Gallon P/N 09-61205



The Poly Fiber Covering Kit from Aircraft Spruce includes all of the materials generally required to recover a wide variety of small aircraft (see list below) except the fabric. When you order this Covering Kit from Aircraft Spruce, you can also order the preworn fabric envelope or fabric yardage you will need to recover the aircraft and receive a 10% Poly Fiber Covering Kit and you will see that Aircraft Spruce is the best choice for your covering materials requirements. Count on Poly Fiber's largest distributor ... Aircraft Spruce!

POLY FIBER COVERING KIT

This kit recommended for these aircraft:

- AERONCA CHAMPION
- CALLAIR
- FUNK
- PIPER J3, J4, J5, PA-11, PA-12, PA-14, PA-18, PA-25
- REARWIN
- AERONCA CHIEF
- CITABRIA
- INTERSTATE CADET
- PORTERFIELD
- TAYLORCRAFT

Note: This kit is for aircraft requiring about 45 yards of fabric. Quality required vary by aircraft. Verify quantity shown are correct for your aircraft before ordering kit.

P/N 09-02046

FLAMMABLE

POLY-FIBER REPAIR KIT

Includes: 1 1" Dope Brush
 1 Pint Poly-Tak
 1 Quart Poly-Spray
 1 Quart Poly-Brush
 1 Quart Reducer (Specify 65-75 or 8500)
 1 Yard Medium Fabric
 4 Sheets #400 Sandpaper
 1 3" Curved Needle
 10 Feet 2" Surface Tape
 1 Thread
 With #65-75 Reducer P/N 09-06210
 With #8500 Reducer P/N 09-06215

FLAMMABLE

CECONITE FABRIC REPAIR KIT

| |
|---|
| Ceconite 101 P/N 09-00299 |
| Kit Includes: |
| 1 1" Brush 1 quart 286 Nitrate Thinner |
| 1 3" Curved Needle 1 quart Super Seam Fabric Cement |
| 1 3M Wetordry Sandpaper 413 2 quarts 286 Butyrate Thinner |
| 1 quart G-6302 Rand Nitrate Dope Grain 1 quart W-8350 Non-Taut Butyrate |
| 1 quart Ceconite 101 (3.4) 70" 1 Yard Stits Hand Sewing Thread |
| 1 quart Rand O- Fill G6303 5 Yards 2" C102 Straight Tape 2" |
| Ceconite 102 P/N 09-06225 |
| Kit Includes: |
| 1 1" Brush 1 quart Nitrate Thinner |
| 1 3" Curved Needle 1 quart W-8350 Non-Taut Butyrate |
| 1 quart Ceconite 102 (2.6oz) 2 quarts Butyrate Thinner 970 |
| 1 sheet 3M Wetordry Sandpaper 413 1 quart Rand-O-Fill G-6303 QT |
| 1 quart Super Seam Fabric Cement 6 Yard C102 Straight Tape 2" |
| 1 quart G-6302 N/T Nitrate Dope Grain 1 Ceconite Hand Thread 250 |

FABRIC COVERING TOOL KIT

This kit includes the items most commonly needed to complete your Poly-Fiber covering project.

Kit Includes: 4 1" Disposable Brush
 3 2" Disposable Brush
 4 Fabric Clamps
 1 Florian Pinking Shears
 10 1/2" Glue Brush
 2 Irons
 1 Thermometer
 1 12" Straight Needle
 1 12" Curved Tip Needle
 1 6" Curved Needle
 2 Gallon Paint Saver Lid
 1 U.S. Safety Respirator Kit, Model 100L
 P/N 09-06230



CYCLONE PAINT SHAKER

Only the Cyclone has "Varishake", adjustable haking power that automatically compensate for can size. A Cyclone will give you superior mixing power to quickly and completely separate and disperse individual metallic and pigment particles so you can match intensity and pitch exactly. Then, at a touch, your Cyclone will give your batch an extra gentle agitation while you are painting, to hold the batch in the fully mixed condition. Cyclone helps eliminate problems with panel to panel uniformity. Features: • Clamps cans quickly, easily, positively. • Thoroughly mixes most products in 60 to 90 seconds. • Breaks up and resuspends well settled solids. • Accepts pint through four-liter cans, including U.S. gallon, Imperial gallons, square gallons, and aerosol cans. (Some 5.1 cans, also 1/4 and 1/2 pts. stacked or with spacers.) • Quiet. • Mounts solidly. • Rugged construction. Engineered and manufactured in the U.S.A.

Cyclone Shaker P/N 09-00902
 Cyclone Pedestal P/N 09-00903

CS

PRE-SEWN POLY-FIBER AND CECONITE ENVELOPES

Presewn envelopes are much easier to install than fabric yard goods. The envelopes are sewn to fit each individual surface depending upon the type of airplane. They can be placed on the surface like a sock. The envelopes are sewn using a special thread and special stitches. Fabric tapes must be placed over all seams. The seams can be sewn chordwise or spanwise for the wings. Individual Pieces Priced Per Each. On presewn envelopes, individual pricing is done by each piece. (i.e. If your airplane is a Stearman, you will have 4 wings. Price shown is per wing - \$86.44. Your cost for all 4 would be: 86.44 x 4 = \$345.76

PLEASE ORDER BY PART NUMBER - Basic part numbers (09-XXX) are shown in the chart. Complete the part number with 10 for wing, 20 for fuselage, 30 for aileron, 40 for stabilizer, 50 for elevator, 60 for flap, 70 for rudder, or 80 for complete set. **After the P/N**, add -1 for Heavy Duty 3.4 oz Polyfiber Fabric, -3 for Medium Weight 2.6 oz. Polyfiber Fabric, -5 for Ceconite 101 fabric, or -6 for Ceconite 102 Fabric. **Prices of envelopes vary based on Fabric selected.** Example: Complete part number for a Stinson 108-1 complete set in Ceconite 102 fabric would be 09-67380-6. Note: All pre-sewn envelopes are non-cancelable, non-returnable special orders items.

PRICES SHOWN ARE FOR CECONITE 102 ONLY

| Aircraft | Part No. | Wing (10) | Fuselage (20) | Aileron (30) | Stabilizer (40) | Elevator (50) | Flap (60) | Rudder (70) | Complete (80) |
|-----------------------|----------|-----------|---------------|--------------|-----------------|---------------|-----------|-------------|---------------|
| Aeronca 7AC 2place | 09-641 | . | . | . | . | . | . | . | . |
| Aeronca 15AC | 09-642 | . | . | . | . | . | . | . | . |
| Beech D175/F17D/E17D | 09-643 | . | . | . | . | . | . | . | . |
| Beech D18/AT1/Twin | 09-644 | . | . | . | . | . | . | . | . |
| 1Bellanca14-19/14-13 | 09-645 | . | . | . | . | . | . | . | . |
| Bellanca Viking | 09-646 | . | . | . | . | . | . | . | . |
| Cessna 120/140/170 | 09-647 | . | . | . | . | . | . | . | . |
| Christen Husky | 09-648 | . | . | . | . | . | . | . | . |
| Citabria 7, 8 | 09-649 | . | . | . | . | . | . | . | . |
| Douglas DC-3 | 09-650 | . | . | . | . | . | . | . | . |
| Ercoupe | 09-651 | . | . | . | . | . | . | . | . |
| Fairchild 24G/RW | 09-652 | . | . | . | . | . | . | . | . |
| Fairchild 19/23/26 | 09-653 | . | . | . | . | . | . | . | . |
| Funk | | . | . | . | . | . | . | . | . |
| Great Lakes 2T1 | 09-654 | . | . | . | . | . | . | . | . |
| Howard DGA | 09-655 | . | . | . | . | . | . | . | . |
| Luscombe | 09-656 | . | . | . | . | . | . | . | . |
| Maule 4 | 09-657 | . | . | . | . | . | . | . | . |
| Maule 5 | 09-658 | . | . | . | . | . | . | . | . |
| Navy N3N | 09-659 | . | . | . | . | . | . | . | . |
| N. American AT6/SNJ | 09-660 | . | . | . | . | . | . | . | . |
| N. American P51 | 09-661 | . | . | . | . | . | . | . | . |
| Piper J2/3 | 09-662 | . | . | . | . | . | . | . | . |
| Piper J5/PA 12/14 | 09-663 | . | . | . | . | . | . | . | . |
| Piper PA 15/17 | 09-664 | . | . | . | . | . | . | . | . |
| Piper PA16 | 09-665 | . | . | . | . | . | . | . | . |
| Piper Colt | 09-666 | . | . | . | . | . | . | . | . |
| Piper PA20/22 | 09-667 | . | . | . | . | . | . | . | . |
| Ryan PT22/STA | 09-702 | . | . | . | . | . | . | . | . |
| Schweizer 119 | 09-668 | . | . | . | . | . | . | . | . |
| Schweizer 126 | 09-669 | . | . | . | . | . | . | . | . |
| Schweizer 222 | 09-670 | . | . | . | . | . | . | . | . |
| Schweizer 233 | 09-671 | . | . | . | . | . | . | . | . |
| Stearman PT13/17 | 09-672 | . | . | . | . | . | . | . | . |
| Stinson 108-1, 2, 3 | 09-673 | . | . | . | . | . | . | . | . |
| Stinson 10A/105/HW75 | 09-674 | . | . | . | . | . | . | . | . |
| Stinson L5 | 09-675 | . | . | . | . | . | . | . | . |
| Taylorcraft | 09-676 | . | . | . | . | . | . | . | . |
| Waco UPF7 | 09-677 | . | . | . | . | . | . | . | . |
| J-3 Interior | 09-678 | . | . | . | . | . | . | . | . |
| Agricultural Aircraft | Part No. | Wing (10) | Fuselage (20) | Aileron (30) | Stabilizer (40) | Elevator (50) | Flap (60) | Rudder (70) | Complete (80) |
| 1Ag Cat | 09-679 | . | . | . | . | . | . | . | . |
| Airtractor | 09-680 | . | . | . | . | . | . | . | . |
| Callair A9/A9B | 09-681 | . | . | . | . | . | . | . | . |
| Piper PA25/Pawnee | 09-682 | . | . | . | . | . | . | . | . |
| Snow | 09-683 | . | . | . | . | . | . | . | . |
| Snow C/D | 09-684 | . | . | . | . | . | . | . | . |
| Thrush | 09-685 | . | . | . | . | . | . | . | . |
| 1Weatherly | 09-686 | . | . | . | . | . | . | . | . |
| Homebuilts | Part No. | Wing (10) | Fuselage (20) | Aileron (30) | Stabilizer (40) | Elevator (50) | Flap (60) | Rudder (70) | Complete (80) |
| Acro Sport I | 09-687 | . | . | . | . | . | . | . | . |
| Acro Sport II | 09-688 | . | . | . | . | . | . | . | . |
| Avid Flyer | 09-689 | . | . | . | . | . | . | . | . |
| Baby Great Lakes | 09-690 | . | . | . | . | . | . | . | . |
| Bowers Fly Baby | 09-691 | . | . | . | . | . | . | . | . |
| Christen Eagle 1 & 2 | 09-692 | . | . | . | . | . | . | . | . |
| Corbin Baby Ace | 09-693 | . | . | . | . | . | . | . | . |
| Kitfox | 09-694 | . | . | . | . | . | . | . | . |
| Pitts S1S/S1C | 09-695 | . | . | . | . | . | . | . | . |
| Pitts S2S/S2A | 09-696 | . | . | . | . | . | . | . | . |
| Smith Miniplane | 09-697 | . | . | . | . | . | . | . | . |
| 1Sonerai II | 09-698 | . | . | . | . | . | . | . | . |
| Starduster I | 09-699 | . | . | . | . | . | . | . | . |
| Starduster II | 09-700 | . | . | . | . | . | . | . | . |
| Steen SkyBolt | 09-701 | . | . | . | . | . | . | . | . |

COMPLETE SETS

| Antiques | Part # | Price | Antiques | Part # | Price | Model | Part # | Price | Homebuilts | Part # | Price |
|-------------------|--------|-------|--------------------|--------|-------|------------------|--------|-------|-------------------|--------|-------|
| Cessna Airmaster | 09-705 | . | Skyranger | 09-722 | . | BGrumman TBMS | 09-713 | . | CCassutt 111M | 09-730 | . |
| BMooney Mite | 09-717 | . | ADeHavilland Heron | 09-710 | . | Stinson SR9 | 09-726 | . | AChipmunk | 09-731 | . |
| Cessna T50/UC78 | 09-706 | . | Stinson 10/10A/10S | 09-723 | . | BMeyer OTW | 09-714 | . | Corbin Jr. Ace | 09-732 | . |
| AN. American B25 | 09-718 | . | Fleet | 09-711 | . | Taylorcraft 15 | 09-727 | . | FAA Bipe | 09-733 | . |
| Commonwealth | 09-707 | . | Stinson AT19/V77 | 09-724 | . | Monocoupe | 09-715 | . | Fokker Tri-Plane | 09-734 | . |
| Porterfield 35/70 | 09-719 | . | Funk | 09-712 | . | DTravel Air 4000 | 09-728 | . | Meyer Toot | 09-735 | . |
| BCulver Cadet | 09-708 | . | Stinson SR5C | 09-725 | . | AMooney 20A | 09-716 | . | Pietenpol | 09-736 | . |
| Rearwin Sportster | 09-721 | . | | | | Piper PA-18 | 09-450 | . | Stampe SV4C | 09-737 | . |
| | | | | | | | | | DVolkspplane I | 09-738 | . |
| | | | | | | | | | DVolkspplane II | 09-739 | . |
| | | | | | | | | | CWittman Tailwind | 09-740 | . |

¹Does not include fabric for plywood wings - order separately. For individual wing envelope pricing, divide the number of wings on your aircraft into the wing price. ^ATails Only ^BPlywood Or Metal Fuselage

CS

ULTRALIGHT SAILS



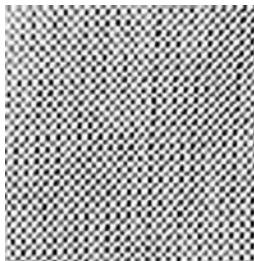
Our sails are made in the United States by a top flight sail loft. These sails are made from the highest quality 3.9 oz. Dacron, many of them from the original OEM sail patterns. These sails are guaranteed to fit properly. All sail sets come complete with tail feathers and fuselage covers, except where noted. All sail orders are on custom-fabricated basis. Therefore, please allow an average of three weeks for delivery. There are no refunds on sail sets unless they are defective. Non-refundable 100% deposit or credit card purchase required. A wide selection of sail colors are available. Contact Aircraft Spruce for details on colors, patterns, and custom work. Prices subject to change without notice.

| Model | Part No. | Price |
|---|----------|-------|
| Teratorn Aircraft | | |
| Tierra 2-Place Sail set(excludes cabin enclosure) | 09-01780 | . |
| Tierra Complete Sail Set | 09-01781 | . |
| Tierra Wing Surface set | 09-01782 | . |
| T/A Complete Sail Set | 09-01783 | . |
| T/A Wing Surface Set | 09-01784 | . |
| Teratorn W/S Complete Sail Set | 09-01785 | . |
| Tierra Aileron Surface Set | 09-01786 | . |
| Elevator Surface Set | 09-01787 | . |
| Tierra Horizontal Stabilizer | 09-01788 | . |
| T/A Horizontal Stabilizer | 09-01791 | . |
| Tierra Vertical Stabilizer | 09-01792 | . |
| T/A and Tierra Rudder | 09-01793 | . |
| Star Flight Aircraft | | |
| TX 1000 and 2000 Complete Sail Sets | 09-01794 | . |
| TX 1000 and 2000 Wing Surface Sets | 09-01795 | . |
| Elevator Surface Set | 09-01796 | . |
| Horizontal Stabilizer | 09-01797 | . |
| Rudder Surface | 09-01798 | . |
| Hurricane, Avenger & Phantom Aircraft Complete Sail Set | 09-01799 | . |
| Wing Surface Set | 09-01801 | . |
| Aileron Surface Set | 09-01802 | . |
| Elevator Surface Set | 09-01803 | . |
| Horizontal Stabilizer Surface Set | 09-01804 | . |
| Upper Vertical Stabilizer | 09-01805 | . |
| Lower Vertical Stabilizer | 09-01806 | . |
| Rudder Surface | 09-01807 | . |
| Advanced Aviation | | |
| Cobra A or B Complete Sail Set | 09-01855 | . |
| Cobra A or B Wing Surface Set | 09-01856 | . |
| Cobra Aileron Surface Set | 09-01857 | . |
| Cobra Horizontal Stabilizer | 09-01858 | . |
| Cobra Elevator Surface Set | 09-01859 | . |
| Cobra Rudder Surface | 09-01860 | . |
| Explorer Complete Sail Set | 09-01861 | . |
| Explorer Aileron Surface Set | 09-01862 | . |
| Explorer Wing Surface Set | 09-01863 | . |
| Explorer Wing Flap Set | 09-01864 | . |
| Explorer Horizontal/Elevator Set | 09-01865 | . |
| Explorer Vertical Stabilizer | 09-01866 | . |
| Explorer Rudder Surface | 09-01867 | . |
| Explorer Gap Cover | 09-01868 | . |
| Buccaneer 2 & Carrera 180 | 09-01869 | . |
| Buccaneer 2 Wing Only | 09-01870 | . |
| Buccaneer 2 Aileron Set | 09-01871 | . |
| Buccaneer 2 Vertical Stabilizer | 09-01872 | . |
| Buccaneer 2 Rudder Surface Set | 09-01873 | . |
| Buccaneer 2 Stabilizer/Elevator | 09-01874 | . |
| Buccaneer 2 Gap Cover | 09-01876 | . |
| Buccaneer 2 Flap Set | 09-01877 | . |
| Buccaneer SX Sail Set | 09-01878 | . |
| Carrera Complete Sail Set(Includes Pylon Cover) | 09-01879 | . |
| Carrera Complete Sail Set | 09-01880 | . |
| Carrera Wing Surface Set | 09-01881 | . |
| Carrera Wing Surface Set | 09-01882 | . |
| Carrera Wing Flap Set | 09-01883 | . |
| Carrera Aileron Set | 09-01884 | . |
| Carrera Pylon Fairing | 09-01885 | . |
| Quicksilver Aircraft | | |
| MX Complete Sail Set | 09-01736 | . |
| MX Wing Surface Set | 09-01737 | . |
| MX Qualifier Complete Sail Set | 09-01738 | . |
| MX Qualifier Wing Set | 09-01739 | . |
| MX Tapered Stabilizer Option | 09-01763 | . |
| MX Horizontal Stabilizer | 09-01765 | . |
| MX Rudder Surface | 09-01768 | . |
| MX-MXL Elevator Set | 09-01764 | . |
| MX2 Complete Sail Set | 09-01740 | . |
| MX2 Wing Surface Set | 09-01741 | . |
| MX2 H.P. Complete Sail Set (X-tra Ribs/ Tapered Stabilizer) | 09-01742 | . |
| Quicksilver Weight Shift Rudder | 09-01769 | . |
| Quicksilver Weight Shift Complete Sail Set | 09-01743 | . |
| MXL Complete Sail Set | 09-01744 | . |
| MXL Wing Surface Set | 09-01745 | . |
| MXL Aileron Surface Set | 09-01766 | . |
| MXL Tapered Stabilizer | 09-01767 | . |

| Model | Part No. | Price |
|--|----------|-------|
| MXL Sport 2 Complete Sail Set | 09-01746 | . |
| MXL Sport 2 Wing Sail Set | 09-01747 | . |
| MXL Super Sport Complete Sail Set | 09-01748 | . |
| MXL Super Sport Wing Sail Set | 09-01749 | . |
| Sprint Complete Sail Set | 09-01751 | . |
| Sprint Wing Sail Set | 09-01752 | . |
| Sprint 2 Sail Set | 09-01755 | . |
| Sprint 2 Wing Set | 09-01760 | . |
| GT 400 Complete Sail Set(Includes Pylon Cover) | 09-01761 | . |
| GT 500 Complete Sail Set | 09-01790 | . |
| GT 400 Wing Surface Set | 09-01770 | . |
| GT 500 Wing Surface Set | 09-01771 | . |
| GT 400/500 Wing Flap Set | 09-01772 | . |
| GT 400/500 Aileron Set | 09-01773 | . |
| GT 400 Pylon Fairing | 09-01774 | . |
| GT 400/500 Stabilizer/Elevator Set | 09-01775 | . |
| GT 400 Rudder | 09-01776 | . |
| GT 500 Rudder | 09-01777 | . |
| GT 400 Vertical Stabilizer | 09-01778 | . |
| GT 500 Vertical Stabilizer | 09-01779 | . |
| GT 500 Door Set (Left & Right) | 09-01762 | . |
| Wizard Aircraft | | |
| Weight Shift Complete Sail Set | 09-01808 | . |
| J-3 Complete Sail Set | 09-01809 | . |
| J-3 Wing Surface Set | 09-01810 | . |
| T-38 Complete Sail Set | 09-01811 | . |
| T-38 Wing Surface Set | 09-01812 | . |
| J-3 & T-38 Elevator Surface Set | 09-01813 | . |
| J-3b & T-38b Elevator Surface Set | 09-01814 | . |
| J-3 & T-38 Rudder A or B | 09-01815 | . |
| Flight Star Aircraft | | |
| Flight Star Complete 2 Place Sail Set | 09-01816 | . |
| Flight Star Complete Single Place Sail Set | 09-01817 | . |
| Flight Star Wing Surface Set | 09-01818 | . |
| Flight Star Aileron Surface Set | 09-01819 | . |
| Flight Star Elevator Surface Set | 09-01820 | . |
| Flight Star Horizontal Stabilizer Surface | 09-01821 | . |
| Flight Star Vertical Stabilizer | 09-01822 | . |
| Flight Star Rudder Surface | 09-01823 | . |
| Flight Star 2-Place Left & Right Wing | 09-01824 | . |
| Rotec Rally Aircraft | | |
| Rotec Rally 2b & Champ Complete Sail Set | 09-01826 | . |
| Rotec Rally 2b & Champ Wing Surface Set | 09-01827 | . |
| Rotec Rally Sport Complete Sail Set | 09-01828 | . |
| Rotec Rally Rally 3 Complete Sail Set | 09-01829 | . |
| Rotec Rally Rally 3 Wing Surface Set | 09-01830 | . |
| Rotec Rally Rally Wing Tip Option | 09-01831 | . |
| Rotec Rally 2b & Champ Elevator Surface Set | 09-01832 | . |
| Rotec Rally 2b & Champ Horizontal Stabilizer | 09-01833 | . |
| Rotec Rally Sport Elevator Set | 09-01834 | . |
| Rotec Rally Sport Rudder | 09-01835 | . |
| BI-RD Aircraft | | |
| BI-RD Complete Sail Set | 09-01836 | . |
| BI-RD Wing Surface Set | 09-01837 | . |
| Aileron Surface Set | 09-01838 | . |
| Elevator Surface Set | 09-01839 | . |
| Horizontal Stabilizer Surface Set | 09-01840 | . |
| Vertical Stabilizer Surface | 09-01841 | . |
| BI-RD Rudder | 09-01842 | . |
| Condor Aircraft | | |
| Condor Complete Sail set | 09-01843 | . |
| Condor Wing Surface Set | 09-01844 | . |
| Elevator Surface Set | 09-01845 | . |
| Horizontal Surface | 09-01847 | . |
| Rudder Surface | 09-01848 | . |
| Weedhopper Aircraft | | |
| Weedhopper Super Nova Set | 09-01849 | . |
| Weedhopper C or B Complete Sail Set | 09-01850 | . |
| Weedhopper C or B Wing Surface Set | 09-01851 | . |
| Weedhopper Stabilizer/Elevator Surface Set | 09-01852 | . |
| Weedhopper Sub Fin Surface | 09-01853 | . |
| Weedhopper Rudder Surface | 09-01854 | . |



CECONITE AIRCRAFT MATERIALS



CECONITE FABRIC

Ceconite, 100% polyester fabric is approved for use on most certified aircraft. To be sure to check the master eligibility list in the procedure manual.

CECONITE 101 (3.4 oz.) - Much stronger and far more durable than cotton. It has a probable lifetime durability.
70" Width .. P/N 09-00700 /lin. yd

CECONITE 102 (2.6 oz.) - A fine weave medium weight fabric to be used as a replacement for intermediate weight cotton fabric as described in TSO-C15.
70" Width P/N 09-00900 /lin. yd

UNCERTIFIED LIGHT - 1.7 oz., lightweight fabric recommended for covering ultralight aircraft. This fabric will be unstamped. It is not approved for certified aircraft except over plywood surfaces.
66" Width P/N 09-00921 /lin. yd



SUPER SEAM FABRIC CEMENT

New Super Seam Fabric Cement. Not compatible with original nitrate-based Super Seam. Used to attach Ceconite Fabric to structures. High solids nitrate based cement approved in the Ceconite STC.

FLAMMABLE
1 Qt. P/N 09-18100
1 Gal. P/N 09-18200



POLYESTER THREAD & CORD (FAA APPROVED)

CECONITE - D693 waxed, 600 yds.
P/N 09-41300-1

CECONITE - Flat Braided, 500 yds.
P/N 09-00822

HAND SEWING THREADS - 250 yds
P/N 09-41400

MACHINE SEWING THREAD - 5600 yds..... P/N 09-41500.....

INTERIB BRACING TAPE - 36 yd roll, 1/2"w P/N 09-41560.....

CECONITE REINFORCING TAPES (FAA APPROVED)

Polyester twill with adhesive back. Applied under riblacer, server, or pop rivet to prevent fabric from ripping. 60 yd. length.

1/4" width P/N 09-41230

3/8" width P/N 09-41238

1/2" width P/N 09-41212



CECONITE PROCEDURE MANUAL

STC manual for applying ceconite materials.
P/N 09-01000.....



CECONITE TAPES

This FAA approved process utilizing Ceconite polyester fabrics and the Randolph line of finishes assures a beautiful, durable, weather-resistant cover job every time. The Ceconite cover process was issued Supplemental Type Certificate No. SA4503NM in 1997, and this number will apply to all aircraft. Note: Only Randolph materials may be used through the

topcoat paint to comply with STC requirements. Randolph finishes are required for approval. Ceconite is approved for use on most certified aircraft. To be sure, check the Approved Model List in the latest revision of Procedure Manual 101 for the Ceconite Aircraft Covering Process.

LINEAR STRAIGHT TAPES (CECONITE 102)

| Width | Roll | Part No. | Price |
|-------|-------------|----------|-------|
| 1" | 50 yds..... | 09-41010 | ..... |
| 1.5" | 50 yds..... | 09-41015 | ..... |
| 2" | 50 yds..... | 09-41020 | ..... |
| 3" | 50 yds..... | 09-41030 | ..... |
| 4" | 50 yds..... | 09-41040 | ..... |
| 6" | 50 yds..... | 09-41060 | ..... |

LINEAR PINKED TAPES (CECONITE 102)

| | | | |
|------|-------------|----------|-------|
| 1" | 25 yds..... | 09-41111 | ..... |
| 1.5" | 25 yds..... | 09-41116 | ..... |
| 2" | 50 yds..... | 09-41120 | ..... |
| 2" | 25 yds..... | 09-41125 | ..... |
| 3" | 25 yds..... | 09-41135 | ..... |
| 4" | 25 yds..... | 09-41145 | ..... |
| 6" | 25 yds..... | 09-41166 | ..... |

LINEAR PINKED TAPES (CECONITE LIGHT)

| | | | |
|------|-------------|----------|-------|
| 1" | 25 yds..... | 09-41251 | ..... |
| 1.5" | 25 yds..... | 09-41255 | ..... |
| 2" | 25 yds..... | 09-00298 | ..... |
| 2" | 50 yds..... | 09-41252 | ..... |
| 3" | 25 yds..... | 09-41253 | ..... |
| 4" | 25 yds..... | 09-41254 | ..... |
| 6" | 25 yds..... | 09-41256 | ..... |

BIAS PINKED TAPES

For use on curved edges.

| | | | |
|----|-------------|----------|-------|
| 2" | 25 yds..... | 09-41165 | ..... |
| 3" | 25 yds..... | 09-41170 | ..... |
| 4" | 25 yds..... | 09-41175 | ..... |

MAULE FABRIC TESTER



A fine quality tool to test fabric covered aircraft for minimum FAA requirements without removing or punching holes in fabric. Also used to test struts for inside rusting as required by FAA on all Piper aircraft with struts.

P/N 09-14900

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MATERIAL REQUIREMENTS FOR ULTRALIGHT AIRCRAFT USING UNCERTIFIED LIGHT FABRIC

USING POLY-FIBER UNCERTIFIED LIGHT FABRIC

25yds..... Uncertified Light Fabric
5 Gal. Poly-Brush
6 Gal. Poly-Spray
2 Qts. Poly-Tak
5 Gal. Reducer
3 Rolls 2" Pinked Tape
1 Roll 3" Pinked Tape
6..... Gal. Poly-Tone
100..... Drain Grommets
15..... Inspection Rings

ESTIMATED MATERIAL REQUIREMENTS FOR COVERING FABRIC AIRCRAFT

(Average aircraft the size of Piper J-3, PA-11, PA-25, Aeronca, Taylorcraft)

USING POLY-FIBER MED-1 FABRIC

45 .. Yards Med-1 Fabric
10 .. Gal. Poly-Brush
11 .. Gal. Poly-Spray
1 ... Gal. Poly-Tak
4 .. Gal. Reducer
1 .. Roll 1" Pinked Tape
7 .. Rolls 2" Pinked Tape
2 .. Rolls 3" Pinked Tape
1 .. Roll 4" Pinked Tape
1 .. Roll 3" Bias Tape
1 .. Roll 4" Bias Tape
1 .. Roll Std. Rib Cord
2... Rolls 1/2" Reinf. Tape
10 .. Gal. Poly-Tone
30... Inspection Rings
100... Drain Grommets

USING CECONITE 102 FABRIC

45 .. Yards Ceconite 102
5 .. Gal. Non-Tautening Nitrate Dope
10 .. Gal. Non-Tautening Butyrate Dope
7 .. Rolls 2" Ceconite Tape
1 .. Ceconite Rib Lacing Cord
1 .. Ceconite machine Thread
10 .. Gal. Colored Butyrate Dope
2 .. Rolls 1/2" Reinforcing Tape
1 .. Gal. New Seam Fabric Cement
5 ... Gal. Nitrate thinner
24 .. Inspection Rings
100 .. Drain Grommets
30 .. Gal. Butyrate Dope Thinner
100... Drain Grommets
10... Gal. Silver Butyrate Dope

FABRIC – TAPES



DACRON FABRIC FOR HOMEBUILT AIRCRAFT

Easily controlled shrinkage by the application of heat by either a conventional steam iron or other heat source assures a professional covering job even on the first attempt. It may be coated with aircraft dope, epoxies or other finishes as acceptable to the FAA. Dacron is available in many weights and weaves but three types have been selected as being most suitable as an aircraft covering material. The tensile strength of Grade A and Irish Linen aircraft fabrics is 80 pounds, which may be used as a comparable standard in selecting the proper Dacron fabric weight for a specific application. The 1.8 oz. is a light weight material which is generally used on gliders and over plywood. The 2.7 oz. fabric is comparable in strength to Grade A. The finer weave assures an ultra-smooth texture-free finish. The 3.7 oz. material is a heavy duty fabric for extraordinary service.

NOT for use on certified aircraft.

| Weight per Sq. Yd. | Part No. | Strength (Lb./In.) | Width | Price Per Lineal Yd. |
|--------------------|----------|--------------------|-------|----------------------|
| 1.8 Oz. | 09-00100 | 60 | 60" | . |
| 2.7 Oz. | 09-00300 | . | 62" | . |
| 3.7 Oz. | 09-00500 | 130 | 66" | . |



DACRON SURFACE TAPES

The Dacron tapes are made up in the 2.7 oz. weight. Available with smooth edges or with conventional pinked edges. The Dacron tape is not FAA approved. Sold in 50 yard rolls.

| Width 50 Yd Roll | Smooth Edge | | Pinked | |
|------------------------|-------------|----------------|--------|----------------|
| | P/N | Price/ Roll | P/N | Price/ Roll |
| 1" | 15000 | . | 15450 | . |
| 2" | 15100 | . | 15500 | . |
| 3" | 15200 | . | 15600 | . |
| 4" | 15300 | . | 15700 | . |
| 6" | 15400 | . | 15800 | . |

Discount Schedule for Dacron Tapes: Less 10% for 12 Rolls (assorted) • Less 15% for 25 Rolls (assorted). Request quote on larger quantities.

DACRON BIAS TAPE FOR HOMEBUILT AIRCRAFT

Bias-cut tapes (weave 45° to edge) are especially useful for trimming compound curves on components such as wing tips and tail surfaces. Bias tape will stretch to conform to the contour without wrinkles, without heat-shrinking edges or cutting and notching to remove excess fabric. Stretching reduces the width about 35% so 3" tape should be used to finish areas normally covered with 2" tape. 2" Bias tape will pull to about 1-3/8" width.

2" x 50 Yd. Roll P/N 09-16300
3" x 50 Yd. Roll P/N 09-16400

NOT FOR USE ON CERTIFIED AIRCRAFT



COTTON REINFORCING TAPES

| Tape | Size | Part No. | Price/Roll |
|-----------|----------------|----------|------------|
| DDD-T-86F | 1/2" x 36 Yds. | 09-17000 | . |



THREADS & CORDS

Only synthetic threads and rib lacing cords should be used with Dacron covering to insure uniform strength. Waxed linen rib cord conforms to specification MIL-C-2520A, Type I.

| Material | Quantity | Part No. | Price |
|------------------------------|----------|----------|-------|
| Dacron Machine Sewing Thread | 500 Yds. | 09-03900 | . |
| Dacron Hand Sewing Thread | 250 Yds. | 09-04000 | . |



FAB-TAC FABRIC CEMENT

A superior quality cement for strong splice joints. Use to cement tapes, rings and grommets to fabric cover.

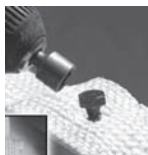
1 Pint P/N 09-17800
1 Qt. P/N 09-17900
1 Gal. P/N 09-18000



CLOTH MASKING TAPE

Has many uses in aircraft maintenance work. Strip over sharp corners under fabric. Strips on parts under doped fabric will prevent fabric from sticking to parts. Pressure-sensitive adhesive backing. Easily applied, easily removed. Leaves no residue. Should not be applied below 32°F.

1" x 60 yds. P/N 09-17100



DIAMOND BACK TAPE

Advantages: • Save TIME with easy installation • Save OPERATING COSTS with improved energy efficiency • Save REPAIR COSTS with long lasting quality at high temp • Save ON PRICE with quantity discounts

| CHARACTERISTICS | |
|--------------------|-----------------------------|
| Fibers | Ceramic |
| Application | Insulation with bolt holes |
| Weave Style | Drop Warp |
| Thickness | .125 in |
| Bolt Diameter | Up to .75 in |
| Continuous Service | 1,800°F |
| Maximum Use | 2,300°F |
| Durability | High Strength |
| Coating | Plain or Vermiculite Avail. |

| Type | Width | Thickness | Roll Length | Part No. | Price |
|-------------------------------------|-------|-----------|-------------|----------|-------|
| 1/8" Thickness - Plain | 2" | .125" | 100ft. | 05-03510 | . |
| 1/8" Thickness - Vermiculite Coated | 2" | .125" | 100ft. | 05-03511 | . |



SOLDERING IRON

Use to melt drain holes and inspection rings in polyester fabric. 35 Watt, 900°F tip. Tip is replaceable & long life coated.

P/N 09-37430



HEAVY-DUTY HEAT GUN

This soft air velocity of this heat gun increases the surface temperature to the required working temperature much faster than conventional heat guns and maintains a higher temperature for faster completion of the application. Features double insulation, two temperature selections of 570°F and 1000°F, and a unique impact resistant heating element. Operates

on 120V AC at 11.6 amps. Air volume 14.8 cu. ft. per minute. Wt. 1-1/2 lbs. P/N 09-00354



DELUXE HEAT GUN

This handy tool gives you a fast, drum-tight, mirror smooth finish. It's ideal for heat-shrinkable covering films. Get a professional finish with less time and effort. 1-year warranty.

Features: • Includes removable wide nozzle • 1000-watt heating power • Heavy-duty fan motor • Textured, composite hand-grip • 3-position, hot/cool/off switch • Adjustable air intake baffle • Weight: 15 oz • 5.5' AC power cord with

2 prong plug

P/N 12-00527



POCKET THERMOMETER

This Pocket thermometer can eliminate 80% of your iron-on covering problems. These problems are caused by your iron's temperature varying as much as 60° while in use, which causes bubbles and sags. If you are using an iron other than Black Baron, this thermometer is a must in monitoring iron temperatures.

P/N 09-37500



PINKING SHEARS

Hot drop-forged of fine cutlery steel. Precision matched teeth. Ball bearing pivot reduces friction and finger fatigue. Length 9".

Right handed
P/N 09-00355



STEWART SYSTEMS EKOBOND

Stewart Systems EkoBond is a revolutionary water based cement for the application of fabric. EkoBond has extreme bond strength for fabric to fabric and fabric to non-fabric surfaces in both peel and shear tests. EkoBond is very user friendly since it has very little odor and can be used in a closed shop with no health or fire hazards. EkoBond dries quickly and will not attack primers or enamel paints. EkoBond is non-flammable and environmentally friendly. Available in Quarts & Gallons

Quart P/N 09-41195
Gallon P/N 09-41200



PTI SPECIALTY PAINTS

PTI Specialty Paint & Coatings exclusively from Aircraft Spruce & Specialty Co. are featured in space, aerospace and aviation applications throughout the world -- the Space Shuttle and Space Station projects, the Patriot and Stinger missile projects and in refurbishing of landing gear for commercial aircraft. Now, Aircraft Spruce brings PTI products to General and Sport Aviation.

See PTI Paint Products at www.aircraftspruce.com



1. Paint Stripper
2. Primers: Acid Etch and Epoxy
3. Topcoat: A chemical resistant Polyurethane with UV protectors
4. PTI Polykick™ to accelerate drytime

PTI COMPLETE SPECIALTY PAINT SYSTEM

Note: Strong professional recommendation – These products have been specifically formulated to work together. So, while PTI's polyurethane will work with other primers and PTI's primers will work with other topcoats, maximum adhesion, durability and performance is achieved when these products are applied as a system. To Purchase Your Specialty Paint System Simply tell us the make and model of your aircraft, and the Federal 595 Color – see chart on our website at: www.aircraftspruce.com Need a custom color that is not on the chart? – Ask us, we can help you with that too.

SOLVENTS, REMOVERS, & REDUCERS



PTI-MEK is virgin (not recycled) MEK that may be used to clean and prepare the substrate for painting. PTI-MEK may also be used to clean brushes, paint guns and other painting tools. PTI-Acetone is virgin (not recycled) Acetone that may be used to remove lacquer finishes, for cleanup after painting, and to soften lacquers or acrylics that set up in spray guns or hoses. Acetone is not effective on urethanes and should not be used. Use MEK for cleanup on urethane products. Use only virgin acetone. Recycled acetone can damage virtually anything to which it is applied. PTI-PRB paint remover is a non-toxic paint stripper designed for removing polyurethane and other paint systems. Contains no halogenated solvents, pheno, heavy metals or other toxic materials. It clings to vertical, inclined and overhead surfaces and is slow drying for a long reaction time. PTI-PRB is also free rinsing and it's surfactants are biodegradable. The remover is safe on all aircraft structural metals including high strength steel. This non-toxic stripper conforms to the following specifications: Boeing D6-17487, Douglas CSD-1, T.O. 1-1-8, MIL-R-81249D, Type I & II (partial testing) and AMS 1375B (partial testing). PTI-PRY paint remover is a high performing stripper for removing urethanes, epoxies, primers and enamels. In addition to the fact that it is effective it is economical. PTI-PRY clings to vertical, inclined and overhead surfaces and is suitable for indoor use. This product is safe on most aircraft structural metals including high strength steel, mild steel, cadmium, aluminum, magnesium and copper alloys. The surfactants on this stripper are biodegradable. PTI-PRY conforms to the following specifications: MIL-R-81294D, Types I, II & IV and Class 3 (QPL), T.O.1-1-8, AMS 1375, DOUGLAS CSD-1, TYPE III, and BOEING D6-17487 REVISION H. PTI-Toluene is virgin (not recycled) toluene that may be used as a reducer for enamels and other coatings in the alkyd family. Do not use with PTI chromate and chromate free primers. Instead, use PT-1022X66 reducer. PT-1045 is a reducer specially formulated to compliment the PTI Air Dry Wash Primer. PT-1022X66 is a reducer specially formulated to compliment the PTI chromate and chromate free primers. PT-1003 Type II is a reducer specially formulated to compliment the PTI Epoxy primer.

acetone can damage virtually anything to which it is applied. PTI-PRB paint remover is a non-toxic paint stripper designed for removing polyurethane and other paint systems. Contains no halogenated solvents, pheno, heavy metals or other toxic materials. It clings to vertical, inclined and overhead surfaces and is slow drying for a long reaction time. PTI-PRB is also free rinsing and it's surfactants are biodegradable. The remover is safe on all aircraft structural metals including high strength steel. This non-toxic stripper conforms to the following specifications: Boeing D6-17487, Douglas CSD-1, T.O. 1-1-8, MIL-R-81249D, Type I & II (partial testing) and AMS 1375B (partial testing). PTI-PRY paint remover is a high performing stripper for removing urethanes, epoxies, primers and enamels. In addition to the fact that it is effective it is economical. PTI-PRY clings to vertical, inclined and overhead surfaces and is suitable for indoor use. This product is safe on most aircraft structural metals including high strength steel, mild steel, cadmium, aluminum, magnesium and copper alloys. The surfactants on this stripper are biodegradable. PTI-PRY conforms to the following specifications: MIL-R-81294D, Types I, II & IV and Class 3 (QPL), T.O.1-1-8, AMS 1375, DOUGLAS CSD-1, TYPE III, and BOEING D6-17487 REVISION H. PTI-Toluene is virgin (not recycled) toluene that may be used as a reducer for enamels and other coatings in the alkyd family. Do not use with PTI chromate and chromate free primers. Instead, use PT-1022X66 reducer. PT-1045 is a reducer specially formulated to compliment the PTI Air Dry Wash Primer. PT-1022X66 is a reducer specially formulated to compliment the PTI chromate and chromate free primers. PT-1003 Type II is a reducer specially formulated to compliment the PTI Epoxy primer.

| Description | Part No. | Price |
|-------------------------|----------|-------|
| PRY Paint Remover QT | 09-00966 | . |
| PRY Paint Remover Gal | 09-00965 | . |
| PRY Paint Remover 5Gal | 09-00964 | . |
| PRY Paint Remover Drum | 09-00963 | . |
| PRB Paint Remover QT | 09-00970 | . |
| PRB Paint Remover 1 Gal | 09-00969 | . |

| Description | Part No. | Price |
|------------------------|----------|-------|
| PRB Paint Remover 5Gal | 09-00968 | . |
| PRB Paint Remover Drum | 09-00967 | . |
| Alkyd&Lacquer Thinner | 09-00943 | . |
| Alkyd&Lacquer Thinner | 09-00942 | . |
| Mek Qt. | 09-00972 | . |
| Mek Gal. | 09-00971 | . |

| Description | Part No. | Price |
|--------------|----------|-------|
| Acetone Qt. | 09-00974 | . |
| Acetone Gal. | 09-00973 | . |
| Toluene Qt. | 09-00976 | . |
| Toluene Gal. | 09-00975 | . |

EPOXY PRIMER

PTI's Epoxy Primer is a low VOC (volatile organic compounds) epoxy polyamide solvent primer which conforms to the military specification MIL-P-23377 Rev. E. This formulation has been tested by the U.S. Government and is on the Federal Government's "Qualified Products List." This coating is highly recommended for use on aluminum and all plated or unplated metallic surfaces to insure maximum protection against corrosion. This primer may be used as an interior or exterior primer that insures maximum adhesion of any paint or lacquer finish coats. In laboratory tests, PTI's epoxy primer maintained its integrity when subjected to the following chemical and other resistance properties tests: Lubricating Oil 24 hr immersion @ 250F - No defects Full Chemical Resistance after 7 days Hydraulic Fluid 24hr immersion @ 150F - No defects - Salt Spray per ASTM B117-1000+ Hrs Methyl Ethyl Ketone-Soaked Cloth 100+rubs - Passes Humidity (Filiform) - 1000+ Hrs DS2 (1,5-Dichloropentane) - Passes.

NOTE: Before applying, refer to the technical data sheet for this product. *Must be shaken for 15 min. on a paint shaker.



| Description | Part No. | Price |
|-------------------|----------|-------|
| Yellow QT KIT | 09-00934 | . |
| Yellow GAL KIT | 09-00932 | . |
| Green QT KIT | 09-00935 | . |
| Green GAL KIT | 09-00933 | . |
| Epoxy Thinner QT | 09-00937 | . |
| Epoxy Thinner Gal | 09-00936 | . |

ACID ETCH PRIMER

PTI's Air Dry Wash Primer is a polyvinyl butyral zinc chromate formulation that may be used to prime all plain or plated metallic surfaces. Priming surfaces with this primer will ensure maximum adhesion of all bake or air-dry finish coats (including lacquer finish coats). The finely ground emulsions of zinc chromate pigment, resins and phosphoric acid hardeners are virtually non-settling. Once applied, PTI's Air Dry Wash Primer requires no sanding. For the best results follow the instructions on the technical data sheet. This primer exceeds the performance standards specified in Department of Defense specification (DOD) 15328 and Military Specification MIL-8514.



| Description | Part No. | Price |
|------------------------------|----------|-------|
| Yellow Acid Etch Primer QT. | 09-00948 | . |
| Yellow Acid Etch Primer Gal. | 09-00946 | . |
| Yellow Acid Etch Primer 5Gal | 09-00944 | . |
| Green Acid Etch Primer QT | 09-00949 | . |
| Green Acid Etch Primer Gal | 09-00947 | . |
| Green Acid Etch Primer 5Gal | 09-00945 | . |
| Reducer 1045 QT | 09-00951 | . |
| Reducer 1045 GAL | 09-00950 | . |

ZINC CHROMATE PRIMER

PTI's Zinc Chromate Primer is formulated to exceed the performance standards in the Federal Specification TT-P-1757. This primer promotes maximum adhesion to bare aluminum and steel and is recommended for that purpose. PTI's zinc chromate primer is a formulation proven to perform.



| Description | Part No. | Price |
|----------------------------|----------|-------|
| Zinc Chromate Yellow Spray | 09-00901 | . |
| Zinc Chromate Yellow QT | 09-00919 | . |
| Zinc Chromate Yellow Gal | 09-00922 | . |
| Zinc Chromate Yellow 5Gal | 09-00952 | . |
| Zinc Chromate Green Spray | 09-00895 | . |
| Zinc Chromate Green QT | 09-00917 | . |
| Zinc Chromate Green Gal | 09-00918 | . |
| Zinc Chromate Green 5Gal | 09-00953 | . |
| 1022X66 Reducer QT | 09-00956 | . |
| 1022X66 Reducer Gal | 09-00954 | . |

ZINC OXIDE PRIMER

PTI's Zinc Oxide Primer is formulated to exceed the performance standards in the Federal Specification TT-P-1757 (the chromate free version of that specification). Promotes maximum adhesion to bare aluminum and steel and is recommended for that purpose. Formulated to provide a high performance primer that is considered a safer, more environmentally friendly, alternative to the zinc chromate primer.



| Description | Part No. | Price |
|-------------------------------|----------|-------|
| Zinc Oxide Yellow Spray | 09-01617 | . |
| Zinc Oxide Primer Yellow QT | 09-00961 | . |
| Zinc Oxide Primer Yellow Gal | 09-00959 | . |
| Zinc Oxide Primer Yellow 5Gal | 09-00957 | . |
| Zinc Oxide Green Spray | 09-00904 | . |
| Zinc Oxide Primer Green QT | 09-00962 | . |
| Zinc Oxide Primer Green Gal | 09-00960 | . |
| Zinc Oxide Primer Green 5Gal | 09-00958 | . |

PTI SANDABLE PRIMER

PT-573 is a two component epoxy based primer. PT-573 is capable of filling small holes and imperfections before topcoating. PT-573 provides a smooth, sandable base coat that improves the adhesion and appearance of the topcoat. Because of PT-573's unique formula, this primer also provides excellent rust and corrosion protection. This sandable primer is compatible with PTI's epoxy (PT-426F series) and Polyurethane (PT-785 and PT-799 series) topcoats.



| Description | Part No. | Price |
|----------------------------------|----------|-------|
| PTI 573 Sandable Primer 2 gallon | 09-02311 | . |
| PTI 573 Sandable Primer 1 gallon | 09-02312 | . |
| PTI 573 Sandable Primer Quart | 09-02313 | . |

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PTI SPECIALTY PAINTS



SPECIALITY PAINTS

POLYURETHANE - ENAMELS

POLYURETHANE/CATALYST CURE: Toxicity: PTI Polyurethane contains no substance of known toxicity under normal conditions of usage. Colors: The Polyurethane is available in clear, white, blacks, grays and most Federal Standard number 595B (FS#) colors or glosses. Custom colors are available upon request. Viscosity: Admixed and reduced (17925) 15 seconds with #4 Ford Cup. Solids: Nonvolatile admixed & reduced (17925) 65% by weight. Weight: Weight per gallon-admixed and reduced (17925) 10.2 lbs./gal. Hardness: Pencil Hardness (17925) 514. Flexibility: 1/4" Mandrel - Passes. Salt Spray: Saturated Salt Spray 1,000 hours minimum. Spray: Saturated Salt Spray 1,000 hours minimum. **ENAMEL:** PTI's Enamel is formulated to meet the performance specifications of Federal specification TT-E-489G. This product is a high quality alkyd enamel which performs best when used with PTI's zinc chromate or chromate free primer. It may be applied over wood or metal and is suitable for both interior and exterior applications.

HOW TO ORDER:

For PTI Polyurethane: Qt. Size add -13 after the Part No.
Gal. Size add -14 after the Part No.
For PTI Enamel: Qt. Size add -23 after the Part No.
Gal. Size add -24 after the Part No.

| Description | Part No. | Poly.Qt. Price | Poly. Gal. Price | Enamel Qt. Price | Enamel Gal. Price |
|--------------------------|----------|----------------|------------------|------------------|-------------------|
| Boston Maroon | 09-10049 | | | | |
| Elisnore Brown | 09-10080 | | | | |
| Bermuda Tan | 09-10324 | | | | |
| Madrid Red | 09-11120 | | | | |
| Tennessee Red | 09-11136 | | | | |
| Christin Eagle Red | 09-11140 | | | | |
| Intl Orange | 09-12197 | | | | |
| Yellow/Orange | 09-12243 | | | | |
| Pumpkin Orange | 09-12246 | | | | |
| Champion Yellow | 09-13275 | | | | |
| AC Eagle Yellow | 09-13415 | | | | |
| AG Cat Yellow | 09-13432 | | | | |
| J3 OEM Yellow | 09-13507 | | | | |
| Tyson Cream | 09-13523 | | | | |
| Cub Yellow | 09-13538 | | | | |
| Diana Cream | 09-13578 | | | | |
| Lemon Yellow | 09-13591 | | | | |
| Lockhaven Yellow | 09-13637 | | | | |
| Federal Yellow | 09-13655 | | | | |
| Sun Valley Ivory | 09-13690 | | | | |
| Forest Green | 09-14036 | | | | |
| Portland Green | 09-14062 | | | | |
| Federal Green | 09-14064 | | | | |
| Oak Green | 09-14079 | | | | |
| Olive Drab Green | 09-14084 | | | | |
| LAWN GREEN | 09-14090 | | | | |
| Everglades Green | 09-14110 | | | | |
| Cuby Sport Trainer Green | 09-14193 | | | | |
| Insignia Blue | 09-15044 | | | | |
| Twilight Blue | 09-15052 | | | | |
| Christin Eagle Blue | 09-15056 | | | | |
| AN True Blue | 09-15102 | | | | |
| Bahama Blue | 09-15180 | | | | |
| Piper Trainer Blue | 09-15182 | | | | |
| Lakeland Blue | 09-15526 | | | | |
| AG CAT Gray | 09-16099 | | | | |
| Federal Gray | 09-16251 | | | | |
| Rancho Silver | 09-16314 | | | | |
| Polar Gray | 09-16357 | | | | |
| Glacier White | 09-16492 | | | | |
| Daytona White | 09-16555 | | | | |
| Insignia White | 09-17925 | | | --- | --- |
| Reno Gold | 09-17043 | | | --- | --- |
| Christin Eagle Purple | 09-17100 | | | | |
| Nevada Silver | 09-17178 | | | --- | --- |
| Juneau White | 09-17886 | | | --- | --- |

ALL POLYURETHANE PAINTS REQUIRE CATALYST TO CURE!

Note: Polyurethane requires catalyst and the system will add the required amount automatically. If you currently have an adequate supply please notify your sales rep.

Curing: Air Cure-Set to Touch: 4 hrs. maximum Dry Hard: 8 hrs. maximum. Full Chemical Cure: 7 days minimum. Force Cure: Dry Hard: 15 minutes air, then 2 hrs. at 225° F. Full Cure-(After Dry Hard) 2 hrs. at 225° F.

| Description | Size | PN | Price |
|-----------------------|--------|----------|----------|
| Polyurethane Catalyst | Gal | 09-01256 | \$120.95 |
| Polyurethane Catalyst | Qt | 09-01964 | \$56.50 |
| Polyurethane Thinner | Qt | 09-01657 | \$16.70 |
| Polyurethane Thinner | Gallon | 09-01658 | \$35.60 |



PTI POLYKICK™

Other products used with:
Use only with P TI Polyurethanes
Typical Uses: PTI Polykick is formulated to accelerate the cure time for PTI's polyurethane formulations.
PTI Poly Kick Quart..... 09-01610.....
PTI Poly Kick Gallon 09-01611.....

PTI POLYURETHANE PAINT KIT



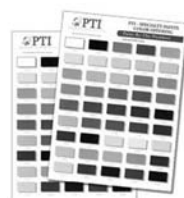
This kit will provide all the materials needed to paint any RV or similar size aircraft.

The kit consists of:

- Green Acid Etch Primer & Reducer
- Yellow Epoxy Prime, Catalyst, & Reducer
- Polyurethane White topcoat, with catalyst & Reducer
- Clear coat sold separately

Additional colors are available upon request, for an additional cost.

Paint KIT..... P/N 09-02074.....
Clear Coat Kit..... P/N 09-02073.....



PTI COLOR CHART

These samples are an approximate computer representation of the actual color and are to be used for reference only.

P/N 09-01969.....

ESTIMATED QUANTITIES PTI RECOMMENDED

| STRIPPER | WASH PRIMER |
|---|---|
| Small Plane: 3-5 gallons Medium Plane: 9-10 gallons Large Plane: 18-25 gallons | Small Plane: 2 gallons Medium Plane: 5 gallons Large Plane: 9-10 gallons Extra Large Plane: 35 gallons |
| PRIMER | TOPCOAT |
| Small Plane: 3-4 gallons Medium Plane: 10-11 gallons Large Plane: 18-20 gallons Extra Large Plane: 66-75 Gal. | Small Plane: 4-5 gallons Medium Plane: 12 gallons Large Plane: 22-24 gallons Extra Large Plane: 75-80 Gal. |
| PLANE SIZE | |
| Small Plane: Cessna, Beechcraft Medium Plane: Lear Jet, Gulfstream Large Plane: Commercial Embraer Commuter Extra Large Plane: Airbus, 747 | |

PAINT & REDUCERS CROSS REFERENCE CHART

| Coating System | Solvent/Reducer |
|------------------------------------|--|
| Zinc Chromate & Zinc Oxide Primers | 1022X66 Gallon P/N 09-00954 Quart P/N 09-00956 |
| Epoxy Primer | PT-1003 TY 2 Gallon P/N 09-00936 Quart P/N 09-00937 |
| Acid Etch Primer | PT-1045 Gallon P/N 09-00950 Quart P/N 09-00951 |
| Enamel | Toluene Gallon P/N 09-00975 Quart P/N 09-00976 |
| Polyurethanes | PT-1003 TY1 Gallon P/N 09-01658 Quart P/N 09-01657 |

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DOPEs – THINNERS – SOLVENTS

CERTIFIED COATINGS PRODUCTS, located in Los Angeles, has been manufacturing aircraft dopes, thinners and special products for the aircraft industry for 50 years. It is a small company making good quality, high-solids dopes, very competitively priced. Since their products are made locally, we enjoy a tremendous saving in delivery costs which is reflected in the pricing as well. We have handled their line for many years with complete customer satisfaction.

FAA/PMA

In January 2005, Certified Coatings Products received FAA-PMA (Federal Aviation Administration Parts Manufacturing Approval) for use on Ceconite fabric. The products have always been approved for use on any other fabric. (PMA#PQ2435NM)



DOPEs, THINNERS, AND SOLVENTS

| Product Description | Part No. | Quart Price | Part No. | Gallon Price | Part No. | 5 Gal. Price | Part No. | 54 Gal. Drum Price |
|-------------------------------------|----------|-------------|----------|--------------|----------|--------------|----------|--------------------|
| Nitrate Dope, Clear | 09-09400 | . | 09-09500 | . | 09-09600 | . | 09-09700 | . |
| Nitrate Dope, Blue Tint | 09-09000 | . | 09-09100 | . | 09-09200 | . | 09-09300 | . |
| Nitrate Dope, Clear, Non-Tautening | 09-09900 | . | 09-10000 | . | 09-10100 | . | 09-10200 | . |
| Butyrate Dope, Clear | 09-10400 | . | 09-10500 | . | 09-10600 | . | 09-10700 | . |
| Butyrate Dope, Clear, Non-Tautening | 09-10900 | . | 09-11000 | . | 09-11100 | . | 09-11200 | . |
| Nitrate Thinner | 09-11400 | . | 09-11500 | . | 09-11600 | . | 09-11700 | . |
| Butyrate Thinner | 09-11900 | . | 09-12000 | . | 09-12100 | . | 09-12200 | . |
| Retarder, Nitrate* | 09-12400 | . | 09-12500 | . | 09-12600 | . | --- | --- |
| Retarder, Butyrate* | 09-12800 | . | 09-12900 | . | 09-13000 | . | --- | --- |
| Acetone | 09-13200 | . | 09-13300 | . | 09-13400 | . | 09-13500 | . |
| MEK | 09-13700 | . | 09-13800 | . | 09-13900 | . | 09-14000 | . |
| Toluene | 09-14100 | . | 09-14200 | . | 09-14300 | . | --- | --- |

*Add 5% to 10%, as needed, of this blend of fast-cutting, high-boiling solvents to prevent dope blushing under conditions of high humidity. Also improves flow by slowing drying time.

Certified Coatings offers only a limited number of colors in butyrate dope which have been selected as standards. The colors will match as closely as possible the corresponding color on the Randolph selection card reproduced in this catalog.

CERTIFIED COATINGS SPECIAL SOLVENTS

| Product | P/N 09- | Quart | P/N 09- | 1 Gal. | P/N 09- | 5 Gal. |
|-----------------------|---------|-------|---------|--------|---------|--------|
| Acetone | 13200 | . | 13300 | . | 13400 | . |
| MEK | 13700 | . | 13800 | . | 13900 | . |
| Toluene Paint Remover | 05702 | . | 05711 | . | | |

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CERTIFIED COATINGS COLORED BUTYRATE DOPE



| Product Description | Product No. | Quart | Price Gallon | 5 Gallon |
|---------------------|-------------|-------|--------------|----------|
| Chrome Yellow | 8520 | . | . | . |
| Daytona White | 8125 | . | . | . |
| Juneau White | 8415 | . | . | . |
| Miami Blue | 8611 | . | . | . |
| Insignia Blue | 8124 | . | . | . |
| Cub Yellow | 8522 | . | . | . |
| Tennessee Red | 8321 | . | . | . |
| Insignia Red | 8350 | . | . | . |
| Plain White | 8120 | . | . | . |

To Order: Use Product # plus "QT" for Qt., "1G" for Gal. and "5G" for 5 Gal.

| Color | Certified Coatings | Randolph Equivalent | Color | Certified Coatings | Randolph Equivalent |
|-------|--------------------|-----------------------|-------|--------------------|---------------------|
| #8125 | Daytona White | Daytona White | #8321 | Tennessee Red | Pontiac Red |
| #8415 | Juneau White | Juneau White | #8350 | Insignia Red | Castilian Red |
| #8522 | Cub Yellow | Cessna Wildcat Yellow | #8120 | Plain White | Insignia White |
| | | | #8520 | Chrome Yellow | Baja Yellow |

NON-TAUTENING BUTYRATE DOPE - RED TINT

Tinted enough to see where you are spraying. Three sizes available.

Quarts..... P/N 09-02175 Gallon..... P/N 09-02176..... 5 Gallon P/N 09-02177



CERTI-FILL SILVER

This non-tautening butyrate UV barrier can be sprayed or brushed over nitrate or butyrate coatings for optimum ultra-violet ray protection.

Quart P/N 09-12300
Gallon P/N 09-12310
5 Gallon P/N 09-12320



SURE SEAM FABRIC CEMENT

Sure Seam is a high quality, high tack fabric cement which has excellent bonding properties.

Quart P/N 09-13330
Gallon P/N 09-13340

RANDOLPH AIRCRAFT COATINGS



Randolph coatings are the FAA-approved coatings for the Ceconite STC covering process.



210 NITRATE DOPE, TAUTENING, CLEAR, HI-SOLIDS

Used only on Grade A cotton or Irish Linen. A premium high solids nitrate dope that tightens natural fabric as it dries. Not for use on Ceconite or heat-shrunk synthetic fabrics. Thin 1:1 with 286 Nitrate Thinner.

| | |
|--|-------------------------------|
| | Quart.....P/N 210-QT..... |
| | Gallon.....P/N 210-1G..... |
| | 5 Gallons.....P/N 210-5G..... |



W-7868 NITRATE DOPE, TINTED, NON-TAUTENING (BLUE)

Initial coating for Ceconite or heat shrunk polyester fabric. Additional plasticizers slow shrinking after application. Thin 1:1 with 286 Nitrate Thinner.

| | |
|--|----------------------------------|
| | Quart.....P/N W-7868-QT..... |
| | Gallon.....P/N W-7868-1G..... |
| | 5 Gallons.....P/N W-7868-5G..... |



E-4964 NITRATE DOPE, CLEAR, NON-TAUTENING

Initial coating for Ceconite or heat shrunk polyester fabric. For use on open cockpit aircraft where tinted dope is not desired. Thin 1:1 w/286 Nitrate Thinner.

| | |
|--|----------------------------------|
| | Quart.....P/N E-4964-QT..... |
| | Gallon.....P/N E-4964-1G..... |
| | 5 Gallons.....P/N E-4964-5G..... |



G-6302 RAND-O-PROOF NITRATE DOPE (GREEN)

Special formulation of nitrate dope and additives for the initial coat on Ceconite fabric and for applying tapes. This is the recommended first coat in the Ceconite/Randolph system. Thin 1:1 with 286 Nitrate Thinner.

| | |
|--|---------------------------------|
| | Quart.....P/N G-6302-QT..... |
| | Gallon.....P/N G-6302-1G..... |
| | 5 Gallons.....P/N 09-01017..... |



286 NITRATE THINNER

Used 1:1 to thin nitrate dopes & Rand-OProof.

| | |
|--|-------------------------------|
| | Quart.....P/N 286-QT..... |
| | Gallon.....P/N 286-1G..... |
| | 5 Gallons.....P/N 286-5G..... |



9701 BUTYRATE DOPE, TAUTENING, CLEAR

Used only on Grade A Cotton or Irish Linen to tighten the fabric as it dries. Not for use on Ceconite or heat-shrunk synthetic fabrics. Thin 1:1 with 9703 Butyrate Thinner.

| | |
|--|--------------------------------|
| | Quart.....P/N 9701-QT..... |
| | Gallon.....P/N 9701-1G..... |
| | 5 Gallons.....P/N 9701-5G..... |



W-8350 BUTYRATE DOPE TINTED, NON-TAUTENING (TAN)

This non-taughtening butyrate dope features an increased level of plasticizer and will not tauten excessively. Takes longer to dry than standard butyrates. Tinted. Used to apply finishing tapes. Additional plasticizers slow shrinking. **TINTED LIGHT TAN BUT DRIES CLEAR.** Recommended initial build butyrate coating to follow Rand-O-Proof in the Ceconite/Randolph system. Thin 1:1 with 9703 Butyrate Thinner.

| | |
|--|---------------------------------|
| | Gallon.....P/N 09-00788..... |
| | 5 Gallons.....P/N 09-00789..... |



J3000 BUTYSOLV REJUVENATOR

Used to soften older dope coatings which exhibit cracking or ring-worming. Restores plasticizers in aged finishes to add flexibility. Only works on aircraft painted with butyrate dope; will not work on polyurethane top-coat finishes.

| | |
|--|---------------------------------|
| | Quart.....P/N 09-14505..... |
| | Gallon.....P/N 09-14510..... |
| | 5 Gallons.....P/N 09-14515..... |



G-6303 RAND-O-FILL BUTYRATE (SILVER)

Rand-O-FillG-6303 is a non-tautening butyrate material designed as the aluminum spray coat over Rand-OProof G-6302, over Nitrate Clear Dope or Butyrate clear Dope. Allow to dry. Wet sand to desired smoothness. Wash and allow surface to completely dry before applying following coat. Thin as needed with Butyrate Thinner.

| | |
|--|---------------------------------|
| | Quart.....P/N G-6303-QT..... |
| | Gallon.....P/N 09-01018..... |
| | 5 Gallons.....P/N 09-01019..... |



701 ALUMINUM PASTE

A fine mesh paste which is easier to use than powder. Mix 4 oz. by weight of paste to one gallon of clear butyrate dope before thinning.

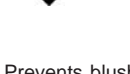
| |
|----------------------------|
| 1 Lb.....P/N 09-14500..... |
|----------------------------|



9703 BUTYRATE THINNER

Used 1:1 to thin butyrate dopes & pigmented butyrate colors.

| | |
|--|--------------------------------|
| | Quart.....P/N 9703-QT..... |
| | Gallon.....P/N 9703-1G..... |
| | 5 Gallons.....P/N 9703-5G..... |



Y-9910 UNIVERSAL RETARDER

Prevents blush in nitrate and butyrate products. Also used to slow nitrate and butyrate drying in high temperatures.

| | |
|--|---------------------------------|
| | Quart.....P/N Y-9910-QT..... |
| | Gallon.....P/N 09-01048..... |
| | 5 Gallons.....P/N 09-01049..... |



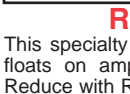
A-1690 BUTYRATE DOPE, NON-TAUTENING (CLEAR)

For use as a build coat after E-4964 Non-Tautening Nitrate (Clear) on open cockpit aircraft where tinted dope is not desired. Thin 1:1 with 9703 Butyrate Thinner.

| | |
|--|---------------------------------|
| | Quart.....P/N 09-00817..... |
| | Gallon.....P/N 09-00818..... |
| | 5 Gallons.....P/N 09-00819..... |

MATERIAL REQUIREMENTS FOR AVERAGE SIZE AIRPLANE USING RANDOLPH FINISHES AND CECONITE FABRIC

| | |
|---------------------------------------|----------------------------------|
| • 45 yds. 70" Ceconite 102 | • 5 gal. Nitrate Thinner |
| • 5 gals. Rand-O-Proof | • 10 gal. Rand-O-Fill |
| • 10 gals. NT Butyrate | • 30 gal. Butyrate Thinner |
| • 3 gal. Universal Finishing Retarder | • 10 gal. (White) Butyrate Dope |
| • 13 rls. Pinked Ceconite Tape | • 1 rl. Ceconite Rib Lacing Cord |
| • 2 rls. 1/2" Reinforcing Tape | • 100 Plastic Drain Grommets |
| • 30 Inspection Rings | • 1 gal. Rand-O-Bond |
| TOTAL (Estimate).....\$ 3,500 | |



RANDOLPH FLOAT LACQUER

This specialty product is used as a spray on the bottom of aluminum floats on amphibious aircraft to protect them from marine growth. Reduce with Randolph 286 Nitrate Thinner.

| | |
|--|-----------------------------|
| | Qt.....P/N 09-00830..... |
| | Gal.....P/N 09-00831..... |
| | 5 Gal.....P/N 09-00832..... |



RANDOLPH ACID-PROOF BATTERY BOX BLACK PAINT #345

Battery Box Black Paint is an asphaltic coating used to provide protection from battery acid in battery boxes and compartments. It is generally applied with a brush or roller to any metal area that may be exposed to leaking battery acid. Shelf life: Guaranteed 2 years from date on manufacture in sealed container in protected storage. Coverage: 225 square feet per gallon with one coat. Mixing: Stir well before use. Thinning: Use out of the can. If thinning is necessary, thin five parts paint to one part 286 Nitrate Thinner. Application: Apply with a brush. Three coats will provide the best possible protection to epoxy primed metal surfaces. Qt.....P/N 344-QT.....

55 Gallon Drums - For 55 gallon drum of Randolph product, use basic P/N D55 - Example: 210-D55



RANDOLPH FINISHES



RANDOLPH COLOR PRODUCTS
RANDOLPH COLORED NON-TAUTENING BUTYRATE DOPE - The final color coat applied over fabric in the Ceconite/Randolph system. Available in 50 standard colors. Thin one to one with 9703 Butyrate Thinner. One thinned gallon covers approximately 200 sq ft with one coat.

RANTHANE POLYURETHANE FINISH

Ranthane is a low viscosity, very high solids polyurethane material resulting in low film weight providing a lasting high gloss. Will withstand most chemicals, engine oils, and hydraulic fluids. Has superb adhesion and abrasion resistance as well as high temperature resistance. For fabric and primed metal.

RANTHANE HIGH SOLIDS CATALYST -

Pint..... P/N 09-00328

Use w/ High Solid Polyurethane

Qt..... P/N 09-00400

RANTHANE ACCELERATOR - Qt..... P/N D-7201-QT

RANTHANE REDUCER - Qt..... P/N G-4200-QT

Gal..... P/N G-4200-1G

The FAA has approved the use of Ranthane over Poly-Fiber. To order Ranthane colors, please specify Randolph color from chart on right and specify quart or gallon.

NOTE: Randolph paints are now manufactured by Consolidated Coatings and will not exact match old Randolph colors. If you are ordering to match old Randolph colors, please provide a paint sample that can be matched by the factory.

MARK II FOR METAL (NOT FOR USE ON FABRIC)

A tough, long-lasting, two-part topcoat paint catalyzed with a non-isocyanate catalyst. Supplied air respirator not required when spraying. Available in same 50 colors as Colored Butyrate Dope and Ranthane for use over primed metal or composite parts. Mix 1:1 with Mark II Mixing Liquid.

MARK II MIXING LIQUID - Combination of catalyst and thinner to be used with Mark II for Metal paint.

Qt..... P/N 09-02193

Gal..... P/N 09-02194

MARK II THINNER - Used as needed to thin Mark II for Metal after combining with Mark II Mixing Liquid to increase flow out.

Pt..... P/N 09-02195

Qt..... P/N 09-02196

Gal..... P/N 09-02197

FAST-DRY ENGINE ENAMELS

Formulated to be heat resistance and maintain good gloss and color retention. For use in the painting of engine crank cases and cylinders, after major overhaul or for general maintenance. Can also be used on engine mounts and supports. Service temperature is 300-350 degrees F. Reduction: Thin to correct spray viscosity with #257 Enamel Thinner(approximately 20% reduction). Application: Spray two coats. Allow to dry to the touch between coats.

| Color | Quart | | Gallon | |
|-------------------------|-----------|-------|-----------|-------|
| | Part No. | Price | Part No. | Price |
| 303 Black | 303-QT | . | 303-1G | . |
| D-5973 Continental Gold | D-5973-EQ | . | D-5973-EG | . |
| G-5436 Lycoming Gray | G-5436-EQ | . | G-5436-EG | . |



RANDOLPH ENAMEL THINNER
 Fast drying thinner for use with Randolph Aircraft Enamels and Fast Dry engine Enamels.
 Qt. P/N 257-QT

Gal. P/N 257-1G

PAINT VISCOSITY CUPS



A precision tool to accurately measure paint viscosity when spraying automotive and aircraft finishes. Consists of a nylon cup with a precisely sized small hole in the bottom. As paint flows through the hole, time the rate of flow. Adjust viscosity by adding thinner as required to produce recommended flow for product being used.

P/N 01-25400.....

RANDOLPH COLOR SELECTIONS AND PRICES



| COLORS | BUTYRATE | | Mark II | |
|-----------------------------|-----------------|-------|----------------|-------|
| | For Fabric Only | | For Metal Only | |
| | Qts. | Gals. | Qts. | Gals. |
| Reds | | | | |
| B-3534 Madrid Red | . | . | . | . |
| B-9163 Colorado Red | . | . | . | . |
| M-9522 Tennessee Red | . | . | . | . |
| M-9530 Vermillion Red | . | ---- | . | . |
| W-3665 Pontiac Red | . | . | . | . |
| J-9555 Cadillac Red | . | . | . | . |
| H-9150 Santa Fe Red | . | . | . | . |
| X-5680 Boston Maroon* | . | . | . | . |
| X-5749 Stinson Maroon | . | . | . | . |
| Standard Colors | | | | |
| M-9526 Cruiser Orange | . | . | . | . |
| C-2065 Ocala Orange | . | . | . | . |
| E-6427 Aeronca 7AC Yellow | . | . | . | . |
| M-9512 Lemon Yellow | . | . | . | . |
| M-9501 AN Orange Yellow | . | . | . | . |
| F-6285 Cub J-3 Yellow | . | . | . | . |
| M-9521 Lock Haven Yellow | . | . | . | . |
| Y-5783 Dallas Yellow* | . | . | . | . |
| D-9270 Ag Cat Yellow | . | . | . | . |
| N-3353 Federal Yellow | . | . | . | . |
| F-2406 Federal Green | . | . | . | . |
| F-5830 Montego Green* | . | . | . | . |
| Y-6350 Forest Green* | . | . | . | . |
| W-3554 Lakeland Blue | . | . | . | . |
| W-9506 AN True Blue | . | . | . | . |
| H-9170 Bahama Blue | . | . | . | . |
| X-5700 Miami Blue | . | . | . | . |
| M-9502 Insignia Blue | . | . | . | . |
| Z-7245 Sun Valley Ivory | . | . | . | . |
| M-9518 Diana Cream | . | . | . | . |
| X-5260 Tucson Cream* | . | . | . | . |
| Q-1050 New Insignia White | . | . | . | . |
| W-9170 Tropic White | . | . | . | . |
| K-7641 Vestal White | . | . | . | . |
| B-4243 Juneau White | . | . | . | . |
| J-9545 Daytona White | . | . | . | . |
| Q-1916 RandolphWhite | . | . | . | . |
| F-7790 AG Cat Gray | . | . | . | . |
| R-4870 Neutral Gray | . | . | . | . |
| R-8174 Platinum Gray | . | . | . | . |
| Y-6100 Polar Gray | . | . | . | . |
| H-6117 Black | . | . | . | . |
| R-8175 Sandalwood* | . | . | . | . |
| Y-9775 Hickory Brown | ---- | . | . | . |
| R-4869 Olive Drab* (Glossy) | . | . | . | . |
| E-6428 Aeronca 7AC Orange | . | . | . | . |
| P-8600 Cessna Tiger Orange | . | . | . | . |
| Metallic Colors | | | | |
| W-8427 Tampa Green* | . | . | . | . |
| W-8430 Newport Blue* | . | . | . | . |
| M-9514 Silver | . | . | . | . |
| B-9916 Reno Gold | . | . | . | . |

How to Order: Use these dash #s to complete Randolph color part #: Butyrate: Qts -BQ, Gallons -BG; Example: P-8599-BG

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3M™ ABRASIVES

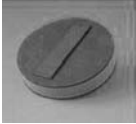


3M™ STIKIT™ DISC PAD 05575

For use with 5 diameter Stikit™ Discs. Has medium density foam and a 45° tapered edge for flexibility. These lightweight, shock-resistant pads have a vinyl face (blue) that provides excellent disc adhesion yet allows quick, easy removal.

| Color | Size | Part No. | Price |
|-------|-----------|----------|-------|
| Blue | 5" x 3/4" | 09-01535 | . |

3M™ STIKIT™ DISC HAND PAD 11063



Use with 5 diameter Stikit™ Discs. Made with soft density foam for conformability. Has 1 inch wide strap for holding the pad to the operators hand.

| Size | Part No. | Price |
|---------|----------|-------|
| 5" x 1" | 09-01448 | . |

3M™ STIKIT™ PAPER DISC ROLL 236U



Constructed of durable aluminum oxide; works well for most wood species. The open coat feature provides a more aggressive cut than a comparable closed coat abrasive of the same grade and a special loading resistant coating makes this disc a good choice when loading is a problem. The C weight, paper backing is more durable for extended disc life and harsher sanding applications.

| Style # | Grade | Weight | Size | Qty. | Part No. | Price |
|---------|-------|--------|---------|------|----------|-------|
| 236U | P80 | C | 5" x NH | 100 | 09-01572 | . |
| 236U | P100 | C | 5" x NH | 100 | 09-01573 | . |
| 236U | P120 | C | 5" x NH | 100 | 09-01574 | . |
| 236U | P150 | C | 5" x NH | 100 | 09-01575 | . |
| 236U | P180 | C | 5" x NH | 100 | 09-01576 | . |
| 236U | P220 | C | 5" x NH | 100 | 09-01577 | . |
| 236U | P240 | C | 5" x NH | 100 | 09-01578 | . |
| 236U | P320 | C | 5" x NH | 100 | 09-01579 | . |
| 415U | 80 | A | 5" x NH | 125 | 09-01558 | . |
| 415U | 100 | A | 5" x NH | 125 | 09-01559 | . |
| 415U | 120 | A | 5" x NH | 125 | 09-01560 | . |
| 415U | 150 | A | 5" x NH | 250 | 09-01561 | . |
| 415U | 180 | A | 5" x NH | 250 | 09-01562 | . |
| 415U | 220 | A | 5" x NH | 250 | 09-01563 | . |
| 415N | 240 | A | 5" x NH | 250 | 09-01449 | . |
| 415N | 320 | A | 5" x NH | 250 | 09-01450 | . |



3M™ SCOTCH-BRITE™ GENERAL PURPOSE HAND PAD

Most universally used in a variety of applications. Excellent starting point to clean, finish, grain, denib and defuzz. May be used by hand, with a hand pad block, or on an in-line sander.

| Grade | ID | Part No. | Price |
|-------|------|----------|-------|
| VFIN | 7447 | 09-01503 | . |



3M™ SCOTCH-BRITE™ HEAVY DUTY HAND PAD

Tight and dense, this pad is the most aggressive and durable web. Excellent for heavy cleaning, deburring, and finishing. May be used by hand, with a hand pad block or on an in-line sander.

| Grade | ID | Part No. | Price |
|-------|------|----------|-------|
| MED | 7440 | 09-01504 | . |



3M™ SCOTCH-BRITE™ LIGHT DUTY CLEANSING PAD

Conformable web and fine mineral are excellent for fine finishes, light cleaning. Among our least aggressive abrasive hand pad. May be used by hand, with a hand pad block or on an in-line sander.

| ID | Grade | Part No. | Price |
|------|-------|----------|-------|
| 7445 | SFIN | 09-01415 | . |

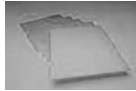


3M™ SCOTCH-BRITE™ SR RADIAL BRISTLE DISC

Bristles are idea for cleaning, blending and deburring.

| | | |
|----|----------|---|
| 2" | 09-01416 | . |
| 3" | 09-01417 | . |

3M™ WETORDRY™ PAPER SHEET 431Q



A silicon carbide Wetordry™ abrasive product constructed on a C weight, intermediate paper backing. Can be run wet or dry. 9"x11" sheets.

| Grade | Part No. | Price |
|-------|----------|-------|
| 600 | 09-01446 | . |
| 360 | 09-01526 | . |
| 400 | 09-20900 | . |
| 320 | 09-20800 | . |
| 280 | 09-20700 | . |

| Grade | Part No. | Price |
|-------|----------|-------|
| 240 | 09-01529 | . |
| 220 | 09-20600 | . |
| 150 | 09-01532 | . |
| 120 | 09-20550 | . |
| 100 | 01-37700 | . |



3M™ SCOTCH-BRITE™ CLEAN AND FINISH

Flexible web for finishing, blending, and polishing. Conformable for access to hard-to-reach areas. Great for general use on a variety of materials. Use manually or on an in-line sander.

| Description | Size | Part No. | Price |
|----------------------------|------------------|----------|-------|
| 3M Clean and Finish Medium | 4" x 30 FT. Roll | 09-01500 | . |
| 3M Clean and Finish Fine | 4" x 30 FT. Roll | 09-01501 | . |

3M™ ROLOC™ DISC PAD ASSEMBLY



Rubber backup pads available in different degrees of hardness for varying grinding applications. Backup pad designed to support 3M™ Roloc™ abrasive discs. This pad has a ¼-20 INT thread which allows it to be mounted directly to

tools with ¼-20 EXT threaded shaft or the included 1/4" diameter shank that fits 1/4" collet chucks or drill chucks.

| Description | Part No. | Price |
|---------------------------------------|----------|-------|
| 45902 - 3" Med. Disc Pad and Shank | 09-02129 | . |
| 45095 - 2" Med. Disc Pad and Shank | 09-02130 | . |
| 452099 - 1.5" Med. Disc Pad and Shank | 09-02131 | . |
| Replacement Parts | | Price |
| 45092 - 3" Med. Disc Pad | 09-01554 | . |
| 45095 - 2" MED. Disc Pad | 09-01555 | . |
| 45099 - 1.5" MED. Disc Pad | 09-01556 | . |
| 1/4 inch Diameter shank | 09-01557 | . |



3M™ SCOTCH-BRITE™ ROLOC™ TR SURFACE CONDITIONING DISC

A non-woven abrasive product used for cleaning, finishing, blending and deburring applications. A threaded attachment system secures the disc to the holder.

| Grade | Size | Part No. | Price | Grade | Size | Part No. | Price |
|-------|------|----------|-------|-------|------|----------|-------|
| ACRS | 1.5" | 09-01510 | . | AVFN | 2" | 09-01505 | . |
| AMED | 1.5" | 09-01511 | . | AMED | 3" | 09-01509 | . |
| AVFN | 1.5" | 09-01512 | . | ACRS | 3" | 09-01508 | . |
| ACRS | 2" | 09-01506 | . | AVFN | 3" | 09-01507 | . |



3M™ SCOTCH-BRITE™ ROLOC™ TR EXL UNITIZED WHEEL

High performance and durability for deburring and finishing applications. Threaded attachment system secures the wheel to the holder.

| Size | Grade | Part No. | Price |
|------|--------|----------|-------|
| 2" | MED 2A | 09-01514 | . |
| 2" | MED 6A | 09-01516 | . |
| 3" | MED 2A | 09-01515 | . |
| 3" | MED 6A | 09-01517 | . |



3M™ SCOTCH-BRITE™ ROLOC™ BRISTLE DISC

Brush-like bristle disc removes coarse coatings from the large, open areas of a work piece. Works on right angle tools quickly and easily with little or no pressure.

| Size | Grade | Part No. | Price |
|---------|------------------|----------|-------|
| 2" 5/8" | Tapered 120 GRDE | 09-01520 | . |
| 2" 5/8" | Tapered 50 GRADE | 09-01518 | . |
| 2" 5/8" | Tapered 80 GRADE | 09-01519 | . |

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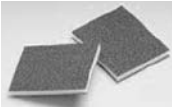
3M™ ABRASIVES - ADHESIVES



3M™ GREEN CORPS™ CUT OFF WHEEL

Wheel is designed to provide high cut rates and long life on most all materials including fiberglass, stainless steel, mild steel and aerospace alloys. Ideal for use on a wide variety of utility type cut off tools. Do not use on tools without guards.

| ID | Size | Part No. | Price |
|--------------|---------------|----------|-------|
| 01985 | 3"x1/32"x3/8" | 09-01521 | . |
| 01986 | 3"x1/16"x3/8" | 09-01522 | . |
| 01994 | 4"x1/32"x3/8" | 09-01524 | . |
| 82238 | 3"x1/32"x1/4" | 09-01570 | . |
| 83488 | 4"x1/16"x3/8" | 09-01571 | . |
| 88755 | 4"x1/32"x1/4" | 09-01580 | . |
| 01986 5 Pack | 3"x1/16"x3/8" | 09-01523 | . |



3M™ FLEXIBLE SANDING PAD

Use for either dry or wet sanding. Rinse and reuse. Ideal for sanding wood, paint, metal, plastic and drywall. Conformable, comfortable, flexible and convenient. Available in fine or medium grade with abrasive on two sides.

| Size | Desc | Part No. | Price |
|--------------------|--------|----------|-------|
| 4-3/4"x3-3/4"x1/2" | Fine | 09-01419 | . |
| 4-3/4"x3-3/4"x1/2" | Medium | 09-01418 | . |



3M™ FOAMFAST 74 SPRAY ADHESIVE

For bonding flexible urethane or latex foam together or to many other materials like wood, metal, and non-vinyl plastics. 24 oz. Can. Orange in color.

P/N 09-01394.....



3M™ POLYSTYRENE FOAM INSULATION 78

3M™ Polystyrene Foam Insulation 78 Spray Adhesive is a high solids aerosol. Adjustable lace spray minimizes overspray and cleanup. Ideal for attaching fiberglass, expanded polystyrene foam and extruded polystyrene foam insulation. Effective up to 140°F. 24 oz. can, clear in color.

P/N 09-01378.....



3M™ REPOSITIONABLE 75 SPRAY ADHESIVE

This adhesive provides tape-like bonds on many lightweight materials. It adheres in seconds, yet has an extra-long tack range that allows you to lift and reposition materials. 16 oz. Can.

P/N 09-01377.....



3M™ RUBBER AND VINYL 80 ADHESIVE

First true contact adhesive in aerosol form. It has exceptional resistance to plasticizing oils. Bonds rubber and supported vinyls better than many typical bulk neoprene contact adhesives. 24 oz. can

P/N 09-01396.....



3M™ SCOTCH-WELD™ URETHANE ADHESIVE DP601/ DP601NS

3M™ Scotch-Weld™ DP601 is a self-leveling, gray, rapid setting, two-component polyurethane adhesive. It is packaged as 1:1 ratio liquids in duo-pak cartridges. With the squeeze of the trigger, the components are automatically mixed and easily dispensed as a bubble-free liquid. DP601NS is the same as the DP601 except it is a non-sag, gray, rapid setting, two-component polyurethane adhesive.

| Description | Size | Color | Part No. | Price |
|-----------------------|-------|-------|----------|-------|
| DP601 (Self-leveling) | 12 oz | Gray | 09-01413 | . |
| DP601NS (Non-Sag) | 50 ml | Gray | 09-01412 | . |



3M™ HI-STRENGTH 90 SPRAY ADHESIVE

High strength, fast contact-type adhesive. Fast contact strength buildup for many decorative laminates. Only needs 1 minute of drying time.

| Size | Part No. | Price |
|-------|----------|-------|
| 24 oz | 09-01376 | . |



3M™ SCOTCH-WELD™ EPOXY ADHESIVE

Fast setting, flexible, two-part adhesive with a 1:1 mix ratio for bonding many materials, such as metals, ceramics and many plastics. 9 minute work life with handling strength in 20 minutes.

| Size | Color | Part No. | Price |
|--------|-------------|----------|-------|
| 200 mL | Translucent | 09-01405 | . |
| 400 mL | Translucent | 09-01406 | . |



3M™ SCOTCH-WELD™ EPOXY ADHESIVE DP125 DUO-PAK

Two-part epoxy adhesive with a 1:1 mix ratio, 25 minute work life and exhibits very high peel strength. Moderately flexible and the gray version has exceptional shear adhesion. Use to bond rubber, metal, wood, plastics, and masonry products.

| Size | Color | Part No. | Price |
|--------|-------------|----------|-------|
| 1.7 oz | Gray | 09-01403 | . |
| 1.7 oz | Translucent | 09-01402 | . |



3M™ SCOTCH-WELD™ EPOXY ADHESIVE DP100 PLUS

Exhibits much higher shear and peel strengths compared to DP100 Adhesive. It has a 1:1 mix ratio, a 4 minute work life, and is slightly flexible when cured. Clear in color. 1.7 oz. package.

P/N 09-01401.....

3M™ SCOTCH-WELD™ EPOXY ADHESIVE DP190 DUO-PAK

A flexible, two-part adhesive that cures at room temperature and provides high strength bonds with good performance in shear and peel. Can be used to bond rubber, metal, wood, most plastics, and masonry products.

| Size | Color | Part No. | Price |
|--------|-------|----------|-------|
| 1.7 oz | Gray | 09-01375 | . |
| 200 mL | Gray | 09-01404 | . |



3M™ SCOTCH-WELD™ EPX™ APPLICATORS AND ACCESSORIES

Mixing nozzle will perform to your requirements. With consistent air pressure for easy uniform application, the Duo-Pak cartridge will give you the flow rate needed. Fast, convenient way to simultaneously meter, mix and apply two-part adhesives and potting compounds. System features handy 3M™ Scotch-Weld™ EPX™ Cartridges that snap quickly into the durable, lightweight Scotch-Weld™ EPX™ applicator. A slight squeeze on the trigger advances the plunger into the cartridge. Accurate measurement and the mixing nozzle provides thorough mixing and precise placement of material. Ideal system for assembly, maintenance and in-field service.

| Size | Color | Part No. | Price |
|-------|--------------------------------|----------|-------|
| 50 mL | EPX Metal Applicator w/Plunger | 09-01371 | . |
| 50 mL | EPX Mixing Nozzle 9742 | 09-01372 | . |



3M™ SCOTCH-WELD™ EPX™ PLUS II APPLICATOR

This Plunger is for the Scotch-Weld™ EPX™ Plus II Applicator. The Scotch-Weld™ EPX™ Plus II Applicator is used to Dispense 3M™ Scotch-Weld™ Adhesives in Duo-Pak Cartridges. The applicator is a low-cost portable, self contained metering, mixing and dispensing machine that simultaneously meters and mixes two-part adhesives as the material is applied. P/N 09-01380.....



3M™ SCOTCH-WELD™ EPX™ APPLICATOR NOZZLE

Applicator nozzle designed for both the 200 mL and 400 mL applicators.

P/N 09-01408.....

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3M™ ADHESIVES - AUTOMOTIVE PRODUCTS

3M™ SCOTCH-WELD™ URETHANE ADHESIVE DP605NS



A fast setting, urethane adhesive. Its non-sag properties make application on many vertical surfaces easy. Has a 5 minute work life and is excellent for filling gaps. Adheres to wood, plastic and primed metal. Reaches handling strength in 15 to 20 minutes. 1.7 oz. Bottle. Color is off white.

P/N 09-01395.....

3M™ SCOTCH-WELD™ EPOXY ADHESIVE 2216 B/A



A flexible, two part, room temperature curing epoxy with high peel and shear strength. Scotch-Weld epoxy adhesive 2216 B/A is identical to 3M™ Scotch-Weld™ Epoxy Adhesive EC-2216 B/A in chemical composition. Scotch-

Weld epoxy adhesive EC-2216 B/A has been labeled, packaged, tested, and certified for aircraft and aerospace applications. Scotch-Weld epoxy adhesive 2216 B/A may be used for aircraft and aerospace applications if proper Certificates of Test have been issued and material meets all aircraft manufacturer's specification requirements.

| SIZE | COLOR | DESCRIPTION | PART NO. | PRICE |
|-------|-------|-------------------|----------|-------|
| 2 oz. | Gray | Adhesive 2216 B/A | 02-00045 | . |
| Pint | Gray | Adhesive 2216 B/A | 02-00113 | . |
| Quart | Gray | Adhesive 2216 B/A | 02-00114 | . |

3M™ SCOTCH-WELD™ INSTANT ADHESIVE CA40H



One-part, high strength, very fast setting adhesive cures at room temperature. Adheres to difficult to bond substrates such as EPDM rubber, aluminum, and flexible vinyl. Comes in a 1 oz. Bottle. Clear.

P/N 09-01368.....

3M™ SCOTCH-WELD™ INSTANT ADHESIVE CA8



This instant adhesive has a fast set time of 5 to 40 seconds. Excellent adhesion on metal, plastic and rubber. Bonds resist shock and impacts. A cyanoacrylate adhesive. Comes in a 1 oz. bottle.

P/N 09-01366.....

3M™ SCOTCH-WELD™ INSTANT ADHESIVE SURFACE ACTIVATOR



It is ideal for use with all 3M Cyanoacrylate Adhesives for a broad range of industrial and electronic applications. It is also ideal for use with CA-5, CA-9, or CA-50 Gel for many wire tacking and coil terminating applications.

P/N 09-01407.....

3M SCOTCH-GRIP™ HP CONTACT ADHESIVE



A high performance contact adhesive that provides a long bonding range and excellent initial strength.

1357 Grey/OLIV..... P/N 09-01362.....
1357 Neutral 1G..... P/N 09-01373.....

3M™ SCOTCH-GRIP™ PLASTIC ADHESIVE 2262



A clear, non-staining high strength adhesive with exceptional resistance to plasticizer migration. Develops tack very rapidly. Can be used to bond many flexible, rigid and extruded vinyls to metal and many other surfaces. Comes in a 1 qt. can.

P/N 09-01365.....

3M™ SCOTCH GRIP RUBBER ADHESIVE



Lower viscosity, sprayable version of Scotch-Weld Neoprene High Performance Rubber and Gasket Adhesive 1300. Has excellent adhesion to metal, baked enamel, wood, most plastics, and neoprene, reclaim, SBR, and butyl rubber. not for EPDM rubber.

| UPC | Size | Color | Part No. | Price |
|-------|----------|--------|----------|-------|
| 1300L | 1 qt | YELLOW | 09-27220 | . |
| 1300L | Gallon | | 09-01712 | . |
| 1300L | 5 Gallon | | 09-01713 | . |
| 1300 | 5 oz. | | 09-01708 | . |
| 1300 | Quart | | 09-01709 | . |
| 1300 | Gallon | | 09-01710 | . |
| 1300 | 5 Gallon | | 09-01711 | . |

3M™ SCOTCH-GRIP™ CONTACT ADHESIVE



A brushable, neutral-colored contact adhesive for bonding many decorative laminates, aluminum, steel, plywood, panels, wood and wood veneer, masonry, rubber, canvas and other porous and non-porous materials to each other or to themselves.

P/N 09-01364.....

3M™ SCOTCH-GRIP™ RUBBER AND GASKET ADHESIVE 847



This fast drying adhesive develops strength very quickly. It has excellent heat resistance; temperature performance is from -5 to 300F. Meets specification requirements of MIL-A-1154C. Bonds neoprene, reclaim, SB-R, and butyl rubber to metal, wood, most plastics, and many other products. 5oz. Tube. reddish Brown in Color.

P/N 09-01361.....

3M™ SCOTCH-SEAL™ DUCT SEALER



An extremely smooth, easy handling knife or caulking grade sealant for sealing medium and high pressure heating and air conditioning ducts.

P/N 09-01409.....

3M™ GENERAL TRIM ADHESIVE 8088 - CLEAR



A high strength adhesive for bonding automotive materials (carpeting, jute pads, fabrics, plastics) to metal and other surfaces. Good heat and water resistance. Not recommended for bonding polystyrene foam. (For bonding polystyrene foam, use 3M™ Spray Trim Adhesive PN08074). 18.1 oz. can. Color is clear.

P/N 09-01444.....

3M™ IMPERIAL™ HAND GLAZE



Non-silicone, non-wax hand glaze. Excellent depth of shine. Superior luster. Use by hand to refine and fill swirls after machine glazing refinish or factory applied paints. Specially formulated to work on all colors and can be painted over. 1 qt. Bottle. Color is clear.

P/N 09-01438.....

3M™ IMPERIAL™ MACHINE GLAZE



Non-silicone, non-wax machine glaze. Possesses excellent scratch removal characteristics. Superior depth of shine and luster. Use by machine to remove swirl marks after compounding acrylic lacquer. Formulated to work on all vehicle colors. 1 qt. bottle. Color is clear.

P/N 09-01439.....

3M™ FINESSE-IT™ FINISHING MATERIAL 81235



Specially designed compounds and polishes to be used on OEM and baked refinish paints to remove sand scratches or to remove swirl marks from previously compounded areas. 1qt. bottles.

P/N 09-01451.....

3M™ FINESSE-IT™ NATURAL BUFFING PAD



The 3 inch buffing pad is designed to get you into tight areas not accessible with a conventional polisher. Pads are hook-and-loop backed. Pads are sold each.

P/N 09-01452.....

3M™ PREMIUM LIQUID WAX



Clear coat safe wax. Use on all cured paint finishes. For use by hand or with an orbital polisher. Produces a high-gloss, deep-luster, durable finish on both new and used car paints. Special formulation is capable of removing road film or light oxidation from car finishes. Heavily oxidized finishes may require compounding with 3M™ Super Duty Rubbing Compound (PN39004) prior to applying wax.

P/N 09-01440.....

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3M™ AUTOMOTIVE PRODUCTS-CLEANERS

3M™ PERFECT-IT™ II RUBBING COMPOUND



Specially designed medium-cutting compound for removing grade 1200, 1500 and 2000 color sanding scratches in paints including clear coats. Unique formulation. Produces minimal compound swirl marks while buffing to a high gloss. When followed by the 3M™ Perfect-It™ Foam Polishing Pad Glaze, this two-step system delivers a show car luster in record time. Use with 3M™ Perfect-It™ Foam Compounding Pad (PN05723). 1qt. P/N 09-01437

3M™ PERFECT-IT™ SHOW CAR PASTE WAX



Ultra high gloss paste wax with exceptional durability for use on automotive paints. Shines and protects new and like new pint finishes, producing a deep high gloss, lustrous, durable, "wet look" finish. P/N 09-01443

3M™ PERFECT-IT™ BACKUP PAD



Enables 3M™ Superbuff™ Compound Pad users to use the 3M™ Perfect-It™ Foam Polishing Pad without having to remove the 3M™ Superbuff™ Adaptor 05710 from the shaft of the polisher. Fits all standard 5/8 inch shaft slow-speed polishers. 7" x 3/4". P/N 09-01426

3M™ PERFECT-IT™ PLUS FOAM POLISHING PAD



Foam polishing pad that utilizes a 3M patented convoluted foam face. Reduced diameter loop attachment backing for added edge protection. Attaches to either backup pads part numbers 05717 or 05718. Fits all 5/8 inch shaft on slow speed polishers. P/N 09-01427

3M™ AVIATION RUBBING COMPOUND



Effectively refines scratches in business jet cabinet clear coats using polyesters and polyurethanes. Also used for refining scratches on painted aircraft surfaces created during the defect removal process, as well as removing paint oxidation on painted aircraft surfaces. Can be used on aircraft cabinetry or painted surfaces. * No Silicone * Non-corrosive P/N 09-02173

SuperBuff Buffing pad 05703 P/N 09-02174

3M™ WHITE GREASE 8875 (LITHIUM LUBE)



Long-lasting lubrication, easy spray viscosity. Won't drip or run. Resists "washing out" if exposed to road spray. 10.5 oz. Can. P/N 09-01445

3M™ OVERSPRAY PROTECTIVE SHEETING MASKER



Portable masker designed to dispense Overspray Protective Sheeting (PN06727). Can be used horizontally, vertically or wall mounted. Spring loaded end frame designed for easy loading of Overspray Protective Sheeting. Paper is not included with masker. P/N 09-01441

3M™ FIBERGLASS RESINS



Designed to be used with Fiberglass Cloth (PN05838) and/or Fiberglass Mat (PN05833). Waterproof when cured. Liquid Hardener (PN0536) included. For metal and fiberglass. Thick formulation resists sags or runs. 1 Qt. P/N 09-01433

3M™ LIGHTWEIGHT BODY FILLER



Cures tack-free in 15-20 minutes — reduces sandpaper loading. Creamy texture. Smooth spreading. Easy smoothing. Vacuum processed to minimize pinholes. 1 Qt. P/N 09-01428
1 Gal. P/N 09-01429

3M™ FLOWABLE FINISHING PUTTY



Tack-Free and Stain Resistant. Two component, self-leveling putty designed for use as a "skin" coat over plastic filler to fill pinholes, sand scratches, low areas or other imperfections. Available in quart and handy squeeze dispenser — no mess. Fills pinholes in body

fillers and small imperfections in metal and fiberglass. Cures tack-free in 30 minutes. Flowable, brushable. Easiest sanding 3M™ Polyester Putty. Minimizes staining that can occur with basecoat/clearcoat systems over body filler. Vacuum processed to minimize pinholes. Excellent adhesion to galvanized, aluminum and thoroughly cured and sanded factory-applied paint surfaces. P/N 09-01432

3M™ LIQUID HARDENER



Fast-acting liquid hardening agent designed to be used with 3M™ Sprayable Polyester Filler (PN05825 or 05856), and/or 3M™ Fiberglass Resin (PN05833 or 05834). 22oz. tube P/N 09-01434

3M™ LONG STRAND FIBERGLASS REINFORCED FILLER



Contains long strands of fiberglass. Repairs holes, cracks and tears in fiberglass. Repairs holes in metal. Waterproof. Repairs larger holes, cracks and tears than 3M™ Short Strand Fiberglass Reinforced Filler (PNs 05815-05816). 1 Gal. Can P/n 09-01430

3M™ SHORT STRAND FIBERGLASS REINFORCED FILLER



Contains chopped fiberglass. Repairs holes, cracks and tears in fiberglass. Repairs holes in metal. Smooth spreading. Waterproof. Can be used with Fiberglass Mat (PN05837) or Fiberglass Cloth (PN05838) to reinforce large repair areas. 1 Gal. Can P/N 09-01431

3M™ SPREADERS



Designed for spreading body and fiberglass fillers, finishing putties, and resins. Sharp edge. Flexible. Durable. Easy to clean. Cured fillers pops off easily. Available in 4" or Assortment (1 each 4, 5 and 6). 4" P/N 09-01435

Assortment P/N 09-01436

3M™ ADHESIVE REMOVER CITRUS BASE



Provides easy clean up of most types of adhesives. Quickly removes waxes, road tars, grease, oil and similar materials. Will not harm paint, vinyl or fabrics when properly used. 24 oz. Can. Pale yellow in color. P/N 09-01379

3M™ ADHESIVE REMOVER CITRUS BASE



A liquid cleaner/degreaser that can be used to dissolve and remove dirt, grease, tar, and many non-curing type adhesives. It can also be used to degrease substrates for adhesive bonding in place of many chlorinated or petroleum-based solvents. 24 oz. Can. Clear in color. P/N 09-01393

3M™ 5-WAY PENETRANT

Multi-purpose product that is effective as a demountant - displaces moisture and "dries out" electrical apparatus. 24. oz. Can. Light Amber in color. P/N 09-01370



3M™ SCOTCHGARD SPOT REMOVER AND UPHOLSTERY CLEANER



Designed to clean carpets and upholstery. Releases both oil- and water-based soils from carpet and upholstery. Aerosol foam is sprayed directly on spot with minimum of overspray. Requires no rinsing. Wipe or blot area with a clean, absorbent cloth. P/N 09-01722

3M™ STAINLESS STEEL CLEANER AND POLISH



Ideally suited for stainless steel, chrome, laminated plastics and aluminum surfaces. With a high-gloss formula, it wipes clean with no streaks or buildup, resists fingerprints and masks surface blemishes. Pleasant lime fragrance. Contains no petroleum distillates. P/N 09-01721

3M PAINT RESTORATION KIT



This all inclusive kit for on aircraft detailing. This is not a polish or wax which only fill scratches, 3M's Paint Restoration Kit actually, removes oxidation, refines scratches, and achieves a professional finish. Designed for airplanes: no-corrosive, silicone free, commercial aircraft manufacturer tested and approved. Kit includes: * 3M Aviation Finishing Compound 1 bottle (16 oz) * 3M Aviation Oxidation Removal Compound 1 bottle (16 oz) * 3M Superbuff

Adapter * 3M Superbuff Buffing Pad * 3M Perfect-it Back-Up Pad * 3M Perfect-it Plus Foam Polishing Pad * 3M Perfect-it Detailing Cloth, Yellow * 471 Vinyl Red 1" x 36 Yds

P/N 09-02178

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3M™ FASTENERS - SAFETY - TAPE

3M™ SCOTCHMATE™ VELCRO FASTENING TAPES

RECLOSEABLE FASTENER HOOK



It's as simple as pressing together and pulling apart. When your product calls for thousands of easy openings and closings, 3M™ Scotchmate™ Reclosable Fasteners pull through for your. Tiny, stiff hooks mesh with pliable loops for quick secure fastening. In addition, provide a solution as strong as you need. No adhesive, nylon and

sewable hook so can be easily attached to many substrates. Sold by the foot.

- Velcro Fastening Tape 2" Black.....09-22223.....
- Hook 2" SJ3402.....09-01388.....
- Loop 2" SJ3401.....09-01387.....

VELCRO FASTENING TAPES



Consists of a set of 2 mating 1" wide black Nylon tapes, which, when pressed together, lock tightly and hold until peeled apart. Tapes have pressure-sensitive adhesive backs. Ideal for use in cockpit to mount pilot supplies or as an upholstery and rug attachment. An effective fastening material - applications are unlimited. Sold by the yard.

- Velcro Fastening Tape 1" Black.....09-31400.....
- Loop 1" SJ3571.....09-00251.....
- Hook 1" SJ3572.....09-00250.....

3M SCOTCHMATE 2" LOOP SJ3572



It's as simple as pressing together and pulling apart. When your product calls for thousands of easy openings and closings, 3M™ Scotchmate™ Reclosable Fasteners pull through for your. Tiny, stiff hooks mesh with pliable loops for quick secure fastening. In addition, Scotchmate reclosable fasteners are backed with 3M adhesive technology expertise which range from rubber adhesives to

high performance, double-coated foam tape which can be adhered to most surfaces to provide a solution as strong as you need. Premium performance nylon hook with VHB™ Tape for high temperature resistance and great shear performance. Sold by the foot.

- Velcro Fastening Tape 2".....09-01656.....
- 2" Loop SJ3572.....09-01653.....
- Hook 2" SJ3572.....09-01652.....

3M™ SAFETY WALK SHEET



A durable, mineral coated, non-slip fabric for wing walks. Waterproof, weather-proof and unaffected by vibrations, heat, cold, gasoline or oil. Assures safe footing. Pressure-sensitive backing should have additional coating of 3M 1300L (located on pg 388) to assure adhesion for aircraft applications.

COMFORTABLE TREADS

| Description | Part No. | Price |
|----------------------|----------|-------|
| Safety Walk 510 2" W | 09-01485 | . |
| Safety Walk 510 4" W | 09-01486 | . |

GENERAL PURPOSE

| Description | Part No. | Price |
|-----------------------|----------|-------|
| Safety Walk 24 INCH W | 09-31675 | . |
| Safety Walk 610 2" W | 09-01482 | . |
| Safety Walk 610 4" W | 09-01483 | . |
| Safety Walk 610 12" W | 09-32250 | . |



3M SAFETY GOGGLES

Meets the requirements of ANSI Z87.1-2003 as high impact protectors. Provides side protection. Hard-coated, polycarbonate lenses offer 99% UV protection. Helps protect against chemical splashes. Pliable vinyl frames provide a comfortable fit. Indirect vents for air flow. P/N 09-01498.....



3M™ THREE POSITION EAR MUFF

Padded headband and adjustable head strap. Comfortable fit with the headband under the chin, over the head or behind the head. Noise Reduction Rating: 27dB* with headband over and behind the head (26dB* with headband worn under the chin). P/N 09-01499.....



3M™ EAR MUFF 1440

Lightweight. Padded headband. Tension adjustment. Contoured ear cushion in multi-position ear cup gives enhanced fit. Replaceable cushions and molded noise suppression inserts. Noise Reduction Rating: 24dB*. P/N 09-01495.....



3M™ EAR MUFFS 1435

General purpose ear muffs. Wide, forked headband and multi-position large ear cup create a comfortable, secure fit. Economical, lightweight design. Replaceable, soft sealing cushions. Noise Reduction Rating: 23dB*. P/N 09-01494.....



3M™ EAR PLUGS 1100

Smooth dirt resistant surface, tapered design to fit the ear canal, provide added comfort and hygiene. Hypo-allergenic material. Each box contains 200 pairs, and each package is easy to dispense. Noise Reduction Rating: 29dB*. P/N 09-01493.....



3M™ REUSABLE EAR PLUG

Multi-flanged plugs stay securely in ear canal. Soft, cloth cord lays flat. Model 1271 includes storage case to keep plugs clean and protected. Plugs are washable and reusable. Bright orange color for visibility. Noise Reduction Rating: 24dB*. P/N 09-01492.....



3M™ GLASS CLOTH TAPE 361

7.5 mil (0.14 mm) thick, glass cloth tape with silicone adhesive. Used for many applications requiring high temperature resistance, high adhesion, and a very strong, abrasion resistant backing such as masking protection in thermal spray operations.

| Size | Part No. | Price | Size | Part No. | Price |
|-------------|----------|-------|---------------|----------|-------|
| 1" x 60 yds | 09-01333 | . | 3/4" x 60 yds | 09-01332 | . |
| 2" x 60 yds | 09-01341 | . | | | |



3M™ GLASS CLOTH TAPE 398FRP

Flame Retardant Sealing Tape 398FRP is a glass cloth tape with an acrylic adhesive for many applications requiring high adhesion, an abrasion-resistant backing and flame retardant properties. The tape meets flame retardancy requirements of F.A.R.

- 2"x36 yards..... P/N 09-01728.....
- 3"x36 yards..... P/N 09-02135.....

3M™ THERMOSETTABLE GLASS CLOTH TAPE

8.3 mil (0.20 mm), glass cloth tape with thermosettable rubber resin adhesive. For many applications requiring high adhesion and a very strong comfortable backing such as wrapping wiring bundles for abrasion and heat protection and connecting cabin ducting sections together.

- 1" x 60 YARDS.... 09-01334.....
- 2" x 60 YARDS.... 09-01342.....

3M CARPET TAPE 9377 2 INCH X 25 YARD

3M 9377 Tape has a differential adhesive system with a high-tack acrylic that bonds to the top-layer substrate and a rubber-based adhesive system that attaches to the flooring material. One side is black and attaches to the flooring material with an acrylic-based adhesive. The white side of the tape is a rubber-based adhesive that provides a bond to the floor surface. Firm application pressure helps develop better adhesive contact and improve bond strength. The bond strength will build over time reaching maximum strength at 72 hours. P/N 09-02133.....

3M™ SCOTCH® SUPER 33+D VINYL ELECTRICAL TAPE DISPENSER

A premium grade vinyl electrical insulating tape, its aggressive adhesive and elastic backing ensure easy, water-resistant conformation to irregular surfaces in low temperatures, yet will not ooze or melt in high temperatures. 3/4" wide X 33' Long. P/N 09-01465.....

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3M™ TAPE - MASKING

3M™ SCOTCH® FINE LINE TAPE 218



This 3M tape is particularly suitable for pin striping, multicolor and other custom painting applications. It is a thin, conformable green polypropylene film tape with a special finish that resists paint runoff. The adhesive adheres instantly and offers good holding power, resists lifting and curling. Stretchable and easy to handle. Provides an extremely fine color-line separation for decorative painting of aircraft. Scotch No. 218.

| Width | Length | Part No. | Price |
|-------|----------|----------|-------|
| 1/8" | 60 Yards | 09-20200 | . |
| 1/4" | 60 Yards | 09-20300 | . |
| 3/8" | 60 Yards | 09-20350 | . |
| 1/2" | 60 Yards | 09-20400 | . |
| 3/4" | 60 Yards | 09-20500 | . |
| 1" | 60 Yards | 09-01348 | . |

3M™ SCOTCH® ADHESIVE TRANSFER TAPE 950



Attaches gaskets and foams, bonds fabric to window blinds and office panels. This tape can be used to attach vinyl or rubber gaskets and seal pipe insulation. Excellent adhesion to most plastics and has a high tack

| Size | Desc | Part No. | Price |
|------|------|----------|-------|
| 1" | 950 | 09-01349 | . |
| 2" | 950 | 09-01350 | . |

3M™ ALUMINUM FOIL TAPE 425



Dead-soft aluminum foil tape. Applications include masking of sensitive components to protect from damage during aircraft paint stripping. In white goods appliances, tape provides an excellent moisture barrier, helps reflect and dissipate heat.

| Size | P/N | Price |
|-----------------|----------|-------|
| 1.5" x 60 Yards | 09-01382 | . |
| 1" x 60 Yards | 09-01381 | . |
| .5" x 60 Yards | 09-01384 | . |
| 2" x 60 Yards | 09-01383 | . |
| 3" x 60 Yards | 09-01385 | . |
| 3/4" x 60 Yards | 09-01386 | . |

3M™ VHB™ TAPE 4920



15.0 mil, white closed cell acrylic foam carrier with film liner and all purpose adhesive. High strength, handling convenience, cushioning, damping and impact resistance. UL listing 746C. 1" in width, 72 Yards per roll. P/N 09-01397

3M™ VHB™ TAPE 4950



45.0 mil thick, white closed cell acrylic foam carrier with all purpose acrylic adhesive and paper liner. High strength, handling convenience, cushioning, damping and impact resistance. UL listing 746C.

| Size | Color | Part No. | Price |
|----------|-------|----------|-------|
| 1"x36yds | White | 09-01360 | . |
| 2"x36yds | White | 09-01389 | . |

3M™ VHB™ TAPE 4930



25.0 mil thick, white closed cell acrylic foam carrier with printed paper liner and an acrylic adhesive. High strength, handling convenience, cushioning, damping and impact resistance. UL listing 746C. 1" in Width and 72 yards in length. P/N 09-01359

3M™ VINYL TAPE



3M™ Vinyl Tape 471, ideal for masking, wrapping or sealing many curved or irregular surfaces, excellent for color coding, abrasion protection, decoration and splicing applications

| Color | Size | Part No. | Price |
|--------|-----------------|----------|-------|
| Blue | 1" x 36 Yards | 09-01335 | . |
| Blue | 2" x 36 Yards | 09-01344 | . |
| Black | 2" x 36 Yards | 09-02179 | . |
| Yellow | 1/2" x 36 Yards | 09-01336 | . |
| Yellow | 3/4" x 36 Yards | 09-01337 | . |
| Yellow | 1" x 36 Yards | 09-01338 | . |
| Yellow | 2" x 36 Yards | 09-01345 | . |
| White | 1" x 36" Yards | 09-02076 | . |
| White | 2" x 36" Yards | 09-02075 | . |

3M™ DOUBLE COATED FILM TAPE 415



A medium-firm, acrylic, pressure sensitive adhesive that featuring an excellent balance of good initial adhesion (quick stick) and good shear holding power. It is ideal for bonding together a wide variety and dissimilar materials such as metals, glass, wood, paints, and many plastics.

| Size | Color | Part No. | Price |
|------------|-------|----------|-------|
| 3/4"x36yds | White | 09-01339 | . |
| 2"x36yds | White | 09-01343 | . |

SCOTCH® POLYETHYLENE COATED CLOTH TAPE 390



Polyethylene coated cloth with rubber adhesive for applications requiring good strength and moisture resistance. Applications include holding insulation materials
P/N 09-01727

3M™ SCOTCH® HIGH PERFORMANCE MASKING TAPE 232



A high performance paper masking tape to be used in the medium temperature paint bake operation. A smooth crepe paper tape that is treated with a heat and solvent resistant coating.

| Size | Part No. | Price |
|------|----------|-------|
| 18MM | 09-01329 | . |
| 24MM | 09-01330 | . |
| 48MM | 09-01340 | . |
| 72MM | 09-01331 | . |

3M MASKING POLY TAPE 5903 (RED)



5903 is a poly tape comprised of heavy duty polyethylene film and synthetic rubber adhesive. It is UV weather resistant and removes cleanly for up to a month with little or no adhesive residue on most opaque surfaces without deteriorating or fading. Used for window and door masking, outdoor holding and protecting surfaces including stucco, concrete, brick, and a variety of construction surfaces where removability is important.
P/N 09-02136

3M™ HAND MASKER KIT



Tape guide pin molded into the M3000 KML frame. Guide pin aids tracking of the masking tape onto masking paper while dispensing. Tack-Down Tape Dispenser (PN06789) allows easy on-off mounting. Provides fingertip access to an extra roll of masking tape. Includes 12 cut off blade. Making film is not included with dispenser.
P/N 09-01442

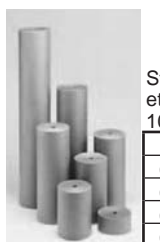
3M™ SCOTCH® SAFERELASE™ BLUE PAINTERS MASKING TAPE 2090



Ideal for long-term masking projects when tape must be left on for up to a week. Removes cleanly and easily for up to seven days without leaving adhesive residue.

| Size | Part No. | Price | Size | Part No. | Price |
|------|----------|-------|--------|----------|-------|
| 3/4" | 09-01420 | . | 1-1/2" | 09-01422 | . |
| 1" | 09-01421 | . | 2" | 09-01423 | . |

3M™ SCOTCH® STEEL GRAY MASKING PAPER



Strong, flexible and pliable. Formulated to resist penetrations of solvents, lacquers or enamels. Comes in 1000 rolls.

| Description | Part No. | Price |
|------------------------|----------|-------|
| Gray Masking Paper 12" | 09-01353 | . |
| Gray Masking Paper 18" | 09-01354 | . |
| Gray Masking Paper 24" | 09-01355 | . |
| Gray Masking Paper 36" | 09-01356 | . |

3M™ PRODUCTS

3M™ SCOTCH-WELD™ THREADLOCKER



THREADLOCKER 3493 PURPLE - For fasteners less than 5/16". Low removal torque

0.5 mL P/N 09-01680.....
 10 mL P/N 09-01681.....
 50 mL P/N 09-01628.....

THREADLOCKER 3494 BLUE - Medium strength general purpose threadlocker. For bolts up to 3/4"

0.5 mL P/N 09-01684.....
 10 mL P/N 09-01685.....
 50 mL P/N 09-01686.....

THREADLOCKER 3495 RED - Med-high strength. High breakaway, reduce prevailing torque. For bolts up to 1"

0.5 mL P/N 09-01688.....
 50 mL P/N 09-01690.....

THREADLOCKER 3497 RED - High temp, highbreakaway and prevailing torque. For bolts up to 1-1/2"

10 mL P/N 09-01695.....
 50 mL P/N 09-01696.....

THREADLOCKER 3498 GREEN - Penetrating adhesive designed for pre-assembled fasteners.

10 mL P/N 09-01698.....
 50 mL P/N 09-01699.....

3M™ NOVEC™



3M™ NOVEC™ ELECTRONIC DEGREASER - Effectively removes oils, greases and handling soils from electric motors, electrical equipment, precision devices and other electro-mechanical or sensitive devices. Based on proprietary 3M solvent technology; it is non-flammable, non-ozone depleting and contains no HCFCs, HFCs, nPB or HAPs. 12oz can, 6 can per case. PN 09-01703

3M™ NOVEC™ FLUX REMOVER - Effectively removes rosin solder fluxes, waxes and similar contaminants found in electronics manufacturing and repair. Based on proprietary 3M solvent technology; it is non-flammable, non-ozone depleting and contains no HCFCs, HFCs, nPB or HAPs. 12oz can, 6 can per case. PN 09-01702

3M™ NOVEC™ CONTACT CLEANER - Effectively removes light oils, greases, silicones, dust and particulates from sensitive electrical and electronic equipment. It is compatible with plastics, is non-flammable, non-ozone depleting and contains no HCFCs, HFCs, nPB or HAPs. 11oz can, 6 can per case. PN 09-01704

3M BODY FILLERS



3M premium fillers with adhesion promoters, offer the very best in all-around performance. Our premium fillers adhere to virtually any surface including wood, metal, aluminum, galvanized steel, fiberglass and concrete. They are also non-staining, non-shrinking, creamy and are great for building plugs, patterns, molds, prototypes and general repair to composite parts. 3M premium fillers are easy to sand and are manufactured with only the highest quality ingredients.

| Description | Size | Part No. | Price |
|----------------------------------|--------|----------|-------|
| Marson™ Platinum™ Body Filler | Quart | 01-01090 | . |
| Marson™ Platinum™ Body Filler | Gallon | 01-01091 | . |
| Dynatron™ Dyna Maxx™ Body Filler | Gallon | 01-01092 | . |
| Dynatron™ Xtra Grip™ Body Filler | Gallon | 01-01093 | . |

STANDARD BODY FILLERS



3M standard fillers are the economical choice for gap filling, fairing, smoothing and general repair. They are also great for plug, pattern and tooling departments for creating and building shapes, curves and intricate elements to molds and patterns. They are easy to mix, apply, and sand, and have a quick cure time. Great for quick repairs to fiberglass, wood, metal concrete and aluminum.

| Description | Size | Part No. | Price |
|---|--------|----------|-------|
| Dynatron™ Ultralite™ Advanced Body Filler | Quart | 01-01084 | . |
| Dynatron™ Ultralite™ Advanced Body Filler | Gallon | 01-01085 | . |
| Dynatron™ Dynalite™ Body Filler | Quart | 01-01072 | . |
| Dynatron™ Dynalite™ Body Filler | Gallon | 01-00368 | . |

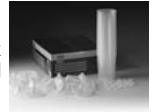
3M™ PAINT PREPARATION SYSTEM (PPS™) CUP AND COLLAR, 16023



3M™ PPS™ Cup and Collar, 16023 Large hard cup that supports and holds the PPS large flexible liner, part number 16024. If filled to the top, this cup will hold 32 fl oz. P/N 09-01717

3M™ PPS™ KIT 16024

Kit contains 25 each large lids, liners and sealing caps. Graduated measurement to 28 oz/840 mL (with mix ratio film insert). Max. capacity of 32 oz/950 mL (filled to within 1/8" of rim). For use with part number 16023. Note: mix ratio insert P/N 09-01718



3M™ PPS™ MINI CUPS & COLLARS 16115



Hard cup that supports and holds the PPS mini flexible liner, part number 16114. If filled to the top, this cup will hold 6 fl oz. P/N 09-01720

3M™ PPS™ MINI LIDS AND LINERS 16114

Kit contains 50 each mini lids, liners and 20 sealing caps. Graduated measurement to 5 1/2 oz (with generic mix ratio film insert). Max. capacity of 6 fl oz. For use with part number 16115. Note: mix ratio insert is purchased separately. P/N 09-01719



3M™ PPS™ MIXING CUP AND COLLAR, 16001



Small, hard cup that supports and holds the PPS small flexible liner, part number 16000. P/N 09-01715

3M™ PPS™ ADAPTOR, 16054, TYPE 18

Adaptor converts DeVilbiss TGHV 530 Siphon Feed and all Full Size Siphon Feed Guns with North American 3/8 Female-18 Thread NPS guns for use with 3M™ Paint Preparation System. P/N 09-01716



3M™ HEADLIGHT LENS RESTORATION SYSTEM



With the 3M™ Headlight Lens Restoration System, you will use a 1200-1600 rpm drill equipped with a backup pad and sanding discs to remove the yellowed layer from the headlight lens surface. A higher rpm drill could generate excessive heat and can cause damage to the headlight lens that is difficult to remove. A lower rpm drill does not work efficiently for this process. Two sanding steps will follow to refine or reduce the sand scratches that are made when removing the yellowed layer. Finally, 3M™ Headlight Lens Polish and a foam pad will remove the fine scratches and put the final clarity on the headlight lens. Kit Includes: 1 - Disc Pad Holder 1 - 3M™ Soft Interface Pad 6 - 3M™ Sanding Discs 4 - 3M™ Finishing Discs 1 - 3M™ Trizact™ Disc 1 - 3M™ Headlight Lens Polish, 1oz 1 - Buffing Pad 1 - Step by Step Directions PN 09-02109

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REINFORCED FILLERS



3M's line of reinforced filler products offers users a unique and flexible array of repair solutions. Each product is reinforced with short fiberglass strands, long fiberglass strands or milled fiberglass.

These reinforced fillers are significantly stronger than regular fillers and are waterproof. Great for repairing fiberglass and rust holes in metal.

| Description | Size | Part No. | Price |
|--|--------|----------|-------|
| Dynatron™ Ultra-Glass™ Reinforced Filler | Quart | 01-01097 | . |
| Dynatron™ Ultra-Glass™ Reinforced Filler | Gallon | 01-01098 | . |
| Dynatron™ Dyna-Glass™ Reinforced Filler | Quart | 01-01099 | . |
| Dynatron™ Dyna-Glass™ Reinforced Filler | Gallon | 01-01101 | . |
| Dynatron™ Dyna-Hair™ Reinforced Filler | Quart | 01-01102 | . |
| Dynatron™ Dyna-Hair™ Reinforced Filler | Gallon | 01-01103 | . |

3M PUTTIES



3M finishing putties have excellent adhesion to wood, metal, aluminum, e-coat, galvanized metal, fiberglass, SMC, epoxy, concrete and primer/paint.



These finishing putties are ideal for repairing or filling smaller dents, scratches, gouges and voids. Each product is non-shrinking, non-staining, cures quickly and sands exceptionally well.

| Description | Part No. | Price |
|--|----------|-------|
| Dynatron™ Ultralite™ Advanced Body Filler - Quart | 01-01086 | . |
| Dynatron™ Ultralite™ Advanced Body Filler - Gallon | 01-01087 | . |
| Dynatron™ Dynalite™ Advanced Body Filler - Quart | 01-01088 | . |
| Dynatron™ Dynalite™ Advanced Body Filler - Gallon | 01-01089 | . |

3M™ PRODUCTS - MEGUIAR'S PRODUCTS

3M FINISHING GLAZES



3M finishing glazes are the right choice when contouring and finishing surfaces or repairing minor surface imperfections prior to painting. Each product is self-leveling and easy to apply and sand. They will not stain/bleed through paint and adhere to most surfaces, including primed and painted surfaces.

| Description | Size | Part No. | Price |
|---------------------------------------|---------------|----------|-------|
| Dynatron™ Dyna Maxx™ Finishing Glaze | 24fl. oz Tube | 01-01094 | . |
| Dynatron™ Xtra Glaze™ Finishing Glaze | 24fl. oz Tube | 01-01095 | . |
| Dynatron™ Dyna-Glaze™ Finishing Glaze | 24fl. oz Tube | 01-01096 | . |

3M SPREADERS



A special, flexible spreading edge makes precise application of body fillers, putties and glazes a breeze. Cured body filler will easily pop off the spreader, allowing it to be reused.

| Description | Color | Size | Part No. | Price |
|--------------------|--------|---------|----------|-------|
| Dynatron™ Spreader | Yellow | 3" x 4" | 01-01105 | . |
| Marson™ Spreader | Black | 3" x 4" | 01-01106 | . |

3M MIXING BOARDS



Clean, wax-free surface for mixing body filler. Cured body filler can be easily removed, allowing repeat uses or use the disposable paper board that offers a non-porous, wax-free surface and easy disposal.

| Description | Size | Part No. | Price |
|---------------------------------------|-----------------|----------|-------|
| Dynatron™ Mixing Board | 12" x 11.5" | 01-01107 | . |
| Marson™ Disposable Paper Mixing Board | 100 - 10" x 10" | 01-01108 | . |

3M FIBERGLASS RESIN/KITS



3M's Fiberglass Resin and Resin Kits use the exact same high-strength polyester resin that is used to manufacture high performance watercrafts, snowmobiles, bathtubs and showers. Polyester resins can be used alone or in conjunction with fiberglass mat, cloth or tape to create waterproof repairs to wood, metal, concrete, stainless steel, aluminum and fiberglass. Great for repairing large rust holes in metal and large fiberglass areas where lamination must be rebuilt. Compatible with all paints, including gel coat and marine paints. Quart. P/N 01-01104.....

MEGUIAR'S DUAL ACTION POLISHER



Whether you're a seasoned professional or a weekend warrior who wants show quality, swirl-free results, this is the tool for you. Meguiar's® Dual Action Polisher greatly reduces the amount of time it takes to apply paint cleaners, polishes and protection products and produces results far superior to applying these products by hand. And because of its dual action - rotation and orbit, you never have to worry about burning the

paint. *G110 includes (polisher, "D" handle, custom hard case, W67DA backing plate, wrench, manual) P/N 09-02358.....

MEGUIAR'S SOFTBUFF FOAM PADS

SoftBuff foam pads are safer than wool pads because they will not leave scratches or buffer swirl marks. When used to apply Meguiar's cleaners, polishes & waxes, these unique, fiber-free foam pads add incredible gloss and depth of color to all fiberglass & painted finishes.



W-7000 8" CUTTING PAD - Offers aggressive cleaning ability without leaving swirl marks, scratches or other blemishes. Its quick-change anchor-loop backing matches up with all popular types of hook and loop buffer backing plates. P/N 09-23470.....ea



W-9000 8" FINISHING PAD - The finest finishing tool to create the ultimate high gloss, swirl-free finish! Its quick-change anchor-loop backing matches up with all popular types of hook and loop buffer backing plates. P/N 09-23480.....ea



W-65 6-1/2" PROFESSIONAL BACKING PLATE - The perfect partner to all SoftBuff foam buffing pads with quick-change anchor loop backing. P/N 09-23490.....ea

MEGUIAR'S MIRROR GLAZE



PLASTIC POLISH (NO. 10) - Safely restores and maintains optic clarity to all clear plastics. This complete one-step product keeps new and like-new transparent plastics in perfect condition with a static-free coating that repels dust. Meets Military Spec MIL-C-5547 and MIL-C-18767A(ASG). 8 Oz. P/N 09-23300.....

PLASTIC CLEANER (NO. 17) - Safely removes fine "hairline" scratches and grime from clear plastic windows and windshields, acrylic and polycarbonate surfaces. Follow with an application of Plastic Polish (No. 10) to restore perfect clarity. 8 Oz..... P/N 09-23500.....



CLEAR PLASTIC CLEANER/POLISH (NO. 18) - Mirror Glaze #18 restores optical clarity and removes surface residue. Its anti-static formula repels dusts and its one-step action saves maintenance time. Just spray on and wipe dry to safely remove surface contaminants and restore optic clarity. 8 oz. P/N 09-23800.....



FINAL INSPECTION (NO. 34) - Mists on and wipes off to remove fresh contaminants and maintain a showroom shine... anywhere, anytime. High lubricity formula removes dust, fingerprints, contaminants and fine scratches. Contains optical brighteners for a high gloss shine. It is "paintable", safe for use in a paint shop environment and safe on all paint finishes, including clear coats.

16 Oz. P/N 09-00446.....
1 Gal. P/N 09-00445.....



VINYL & RUBBER CLEANER/CONDITIONER (NO. 40) - Gives a clean, natural looking luster to rubber and vinyl surfaces. Cleans the surface while restoring its original color. Prevents fading, cracking & drying. Avoids typical synthetic shine of conventional protectants. Contains UV protectants to extend life of vinyl & rubber. Great for use on tires, rubber trim, under hood detailing. Perfect for vinyl surfaces, including dashboards, door panels, vinyl tops and interiors.

16 Oz. P/N 09-23450.....
1 Gal. P/N 09-23460.....



POLYMER SEALANT (M-20) - Polymer Sealant outshines any other wax or polymer product. It has a unique blend of polymers, silicones and imported waxes which create a brilliant high gloss finish that outlasts all other waxes. Polymer Sealant is safe and effective on all paint finishes, including clear coats. 16 oz..... P/N 09-00764.....
64 oz..... P/N 09-00185.....



ONE STEP CLEANER/WAX (50) - Cleans, polishes and protects in one easy step. Effectively cleans chemically without harsh abrasives that can scratch or dull. Removes light oxidation, haze, minor swirls and scratches. Contains polishing oils that add brilliance and high gloss. For use on all fiberglass, painted surfaces, & metal.. 16 oz..... P/N 09-00305.....



W-1000 8" & W-5500 5-1/2" FINESSE POLISHING PADS - (with convenient screw-on backing plate) Match up with any rotary buffing tool. Both multipurpose pads produce a swirl-free, high gloss finish with added depth of color and reflection. W-1000..... P/N 09-23510.....
W-5500..... P/N 09-23520..... ea



W7207 - SOFT BUFF™ 2.0 FOAM CUTTING PAD - New foam technology cuts through moderate surface defects with fewer swirls. 7" pad size reduces chatter resulting in easy buffing. High-tech laminate provides durability and is machine washable. Recessed backing for easy centering. P/N 09-02359.....



W8207 - SOFT BUFF™ 2.0 FOAM POLISHING PAD - Eliminates minor surface defects while restoring gloss. 7" pad combined with new technology provide a smooth buffing experience. High-tech laminate provides durability and is machine washable. Recessed backing for easy centering. P/N 09-02360.....



W9207 - SOFT BUFF™ 2.0 FOAM FINISHING PAD - All new soft foam technology removes light swirls and creates a luxurious high gloss finish. Smooth buffing experience with minimal fatigue. High-tech laminate provides durability and is machine washable. Recessed backing for easy centering P/N 09-02361.....

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MEGUIAR'S PRODUCTS

MEGUIAR'S GOLD CLASS

GOLD CLASS CAR WASH SHAMPOO & CONDITIONER -

Meguiar's® Gold Class™ Car Wash Shampoo & Conditioner is a rich and luxurious product designed to both wash and condition paint in one easy step. The premium formula gently foams away tough dirt, road grime and contaminants without compromising wax protection. Ultra rich paint conditioners clear away debris to reveal color and clarity, leaving paint looking radiant.

16oz..... P/N 09-02330.....
64oz..... P/N 09-02331.....
1 Gal..... P/N 09-02332.....



GOLD CLASS WAX -

Elegant, timeless, premium... Since its introduction, Meguiar's® Gold Class™ Liquid Wax has inspired automotive enthusiasts worldwide to pamper, condition and protect their treasured investments. Our unique and proprietary blend of conditioners nourish and enrich paint to create clear, deep reflections and brilliant shine. Carnauba and polymer protecting agents reflect damaging UV rays, remove fine swirls, and create strong, long-lasting protection to preserve your finish.

Liquid..... P/N 09-02333.....
Paste..... P/N 09-02334.....



GOLD CLASS™ RICH LEATHER LOTION, SPRAY & WIPES -

Meguiar's® Pamper and protect your leather in one easy step with Meguiar's improved Gold Class Rich Leather Cleaner & Conditioner Lotion, Spray and Wipes. The enhanced, premium blend of moisturizers and nutrients - now with aloe for improved conditioning - quickly absorbs into leather for a natural, nongreasy finish. The convenient spray format is great for large areas or when working on perforated leather. The wipes feature 25 thick, textured wipes saturated with our enhanced, premium blend of moisturizers and nutrients deeply nourish fine leather.

Each contains advanced sun-blocking agents and UV sunscreens to help defend against premature wear and fading.

Lotion..... P/N 09-02346.....
Spray..... P/N 09-02316.....
Wipes..... P/N 09-02317.....



GOLD CLASS BUG & TAR REMOVER -

Bug splatter and road tar are highly adhesive and when left in place they will bond to your paint, potentially causing etching or staining. Gold Class Bug & Tar Remover is specifically designed to remove these extra tough substances before they mar your finish. For safe and effective removal of contaminants, we suggest using a high quality 100% cotton towel like our Ultra Plush Super Terry for agitation and final wipe off.

16oz. Spray. P/N 09-02335.....



GOLD CLASS™ TRIM DETAILER -

Gold Class Trim Detailer features innovative technology pioneered by Meguiar's to instantly restore color and richness to faded and discolored trim and molding. Trim is protected so well that the "like new" appearance lasts for weeks, not days. Trim Detailer also helps to remove unwanted contaminants and wax residue.

10oz..... P/N 09-02336.....



MEGUIAR'S NXT GENERATION

NXT GENERATION® CAR WASH -

Meguiar's® expertise in Engineered Synthetic Polymer technology has led to the development of a completely synthetic car wash concentrate that loosens and emulsifies even the toughest dirt and road grime with extreme sudsing action. This pH balanced, non-detergent formula won't strip off wax protection and is gentle on all painted finishes as well as rubber, vinyl, and plastic components. Meguiar's NXT Generation® Car Wash is the first step to a show car shine, and prepares your paint for an application of Meguiar's NXT Generation Tech Wax® 2.0.

18oz..... P/N 09-02326.....
64oz..... P/N 09-02327.....



NXT GENERATION® TECH WAX® 2.0 -

NXT Generation® Tech Wax® 2.0 is a scientific breakthrough that introduces a new dimension of gloss and protection. This improved formula produces unbelievably deep, vibrant color and a dramatically clear wet-look. New Hydrophobic Polymer Technology™ provides relentless water beading and protection against oxidation, corrosion, UV rays and surface degradation. "Hydrophobic" means "water-fearing" and this new breakthrough technology builds such incredible protection and surface tension that water beads up and just glides off your paint finish, wash after wash!

Liquid..... P/N 09-02328.....
Paste..... P/N 09-02329.....



MEGUIAR'S CLASSIC

DEEP CRYSTAL® CAR WASH - Contains special ingredients that extend the life of the suds. Dirt and grime are quickly loosened and removed while wax protection is preserved. For unparalleled performance, use with Meguiar's® Microfiber Wash Mitt. P/N 09-02337.....



CLEANER WAX - Meguiar's® most versatile, one step wax specially formulated to produce eye-dazzling results on all finishes. Rich conditioning oils and legendary gentle cleaning ability make it an excellent choice for daily drivers exposed to the elements. Liquid..... P/N 09-02318.....
Paste..... P/N 09-02319.....



DEEP CRYSTAL® SYSTEM CARNAUBA WAX - Creates a strong, protective barrier on your paint that locks in shine and gloss. Our long-lasting, tried-and-true formulation utilizes the highest grade of carnauba to protect all paint surfaces, including clear coats. 16oz. P/N 09-02348.....



DEEP CRYSTAL® SYSTEM POLISH - A pure polish specially formulated for dark-colored cars. Clear coat safe, the formula creates a brilliant, high gloss finish by conditioning and nourishing paint through the replenishment of valuable oils. This makes dark colors darker and reflections deeper. It's that extra step necessary to create an amazing wet-look show car shine. 16oz..... P/N 09-02320.....



SMOOTH SURFACE® CLAY KIT -

Removing above surface bonded contaminants and restoring a smooth surface to your paint finish is easily accomplished by using this Clay Kit. The non-abrasive clay bar safely, easily and instantly removes bonded contaminants as you rub it across the surface of your car using a mist & wipe product, like Meguiar's Quik Detailer® as a lubricant. Meguiar's Smooth Surface Clay Kit contains everything you need to create a smooth surface! Clay Kit includes: two 50 gram clay bars, individually wrapped & in a moisture-seal case, Quik Detailer for use as a clay lubricant, Cleaner Wax sample & Meguiar's Supreme Shine® Microfiber Towel.



Clay Kit..... P/N 09-02338.....
Replacement Clay..... P/N 09-02347.....

QUIK WAX® - Hi-performance, spray on carnauba protection offers dramatically deeper, darker reflections with increased gloss and shine. Just mist on and wipe off to wax your entire car (wet or dry) in minutes. For superior results during application and removal, we recommend using our Supreme Shine® Microfiber or Ultra Plush Super Terry. P/N 09-02321.....



QUIK DETAILER® - Keeps a waxed car looking "just waxed". Clear coat safe, Meguiar's Quik Detailer removes harmful contaminants before they damage your finish. Use Quik Detailer right after your car is sprayed by a water sprinkler, hit by a bird dropping, or exposed to any other condition that ruins your "just waxed" appearance. Details a full sized car in less than 15 minutes! 16oz..... P/N 09-02322.....
32oz..... P/N 09-02323.....



QUIK INTERIOR DETAILER -

The fastest way to clean all interior surfaces. Use every time you wash or Quik Detail your paint to give your interior that "just detailed" look. In just 5 additional minutes, your entire interior will look sharp and smell fresh. Quickly and easily maintains the look and feel of interior plastics, vinyl, leather, rubber, metal and even audio/video equipment. The safe, high lubricity formula lifts off dust, ashes, dirt, grime, spills and fingerprints without build-up. And, unlike traditional protectants that leave an artificial greasy feeling, Quik Interior Detailer leaves your interior surfaces looking natural and revitalized.



Spray..... P/N 09-02339.....
Wipes..... P/N 09-02340.....

QUIK OUT® CARPET & UPHOLSTERY CLEANER -

The fast and easy solution to keeping carpet and upholstery looking like-new. Active, penetrating foam attacks stains from the bottom up for deep cleaning. The powerful, professional-strength foam easily tackles the toughest stains, such as motor oil, grease, lipstick and coffee. The unique formula dries quickly without leaving behind a sticky or stiff residue so carpets and upholstery are left looking and smelling fresh and feeling like-new. P/N 09-02341.....



SUPREME SHINE PROTECTANT -

With the addition of Supreme Shine Protectant to the Meguiar's® line-up, Meguiar's now has a protectant family that offers users the ability to choose from two different levels of shine. For those who love shine, Supreme Shine Protectant is the fastest and easiest way to create a hi-shine surface on vinyl, rubber, and plastic surfaces. 450ml..... P/N 09-02349.....



NATURAL SHINE PROTECTANT -

Maintain that "like new" look on dashboards, trim, tires and more. Natural Shine's complex formula includes mild cleaning agents that help remove daily dirt and grime and restore the original, natural finish. Includes UV blockers to help reduce the effects caused by the sun. P/N 09-02342.....



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MEGIUAR'S PRODUCTS - BOELUBE LUBRICANTS

MEGIUAR'S CLASSIC CONT.



SWIRLX - Car Guys are constantly asking how to best remove swirl marks/spider webs/holograms to restore crystal clear reflections and have a flawless, show-car shine. SwirlX Swirl Remover effortlessly removes swirl marks while improving color and clarity. SwirlX can be applied by hand or with our DA Polisher, and is a non-abrasive formula that gently smooths away micro-fine swirl marks so you can have a flawless finish on all paints. 16oz. P/N 09-02357



SCRATCHX® 2.0 - Keep ScratchX® 2.0 close at hand for quick removal of isolated paint scratches or blemishes ... whenever they occur. Competitive products either hide the blemish or scratch the finish. Meguiar's® exclusive micro-abrasive system enables ScratchX 2.0 to remove paint blemishes fast while restoring brilliant high gloss. The new and improved formula can be applied by hand or with a DA. P/N 09-00304



COLORX® - Meguiar's® COLORX® is the tested and proven system to restore deep color and gloss from your oxidized or contaminated paint finish. Helps remove fine scratches and swirl marks too. Our polish and wax combination will dramatically revive brilliant color and add a long lasting protection that locks in the shine. For best results, apply with an Even-Coat Applicator and remove residue with a Supreme Shine® Microfiber or Ultra Plush Super Terry. P/N 09-02343

PLASTX CLEAR PLASTIC CLEANER & POLISH - This easy-to-use, rich gel formula quickly restores optical clarity to both rigid and flexible clear plastics. Cutting-edge advancements in Meguiar's® exclusive Microscopic Diminishing Abrasive™ Technology (MDAT) remove light oxidation, chemical degradation, surface contamination, stains and light surface scratches with ease. Special highly water resistant polymers provide long lasting durable protection to keep your clear plastics clear and beautiful longer. We recommend applying PlastX with a High Tech Applicator Pad or Ultra Plush Super Terry and using an Ultra Plush Super Terry or Supreme Shine® Microfiber for the final wipe-off. P/N 09-02324



MEGIUAR'S ACCESSORIES



WATER MAGNET® MICROFIBER DRYING TOWEL - Meguiar's® ultra plush Water Magnet® reduces drying time with less wring-outs by absorbing up to two times the water of traditional terry towels. The extra large 22" x 30" waffle texture wrings out easily and leaves a spot-free finish. X2000 Single pack P/N 09-02351



SOFT BUFF™ TERRY TOWELS - Meguiar's® Soft Buff™ Terry Towels are thick and plush to provide superior absorbency and a swirl-free finish. The towels are pre-washed for instant absorbency and lint-free performance. P/N 09-02352



SUPREME SHINE® MICROFIBER TOWEL - Meguiar's® Supreme Shine® is an incredibly plush microfiber towel for producing swirl free, mirror-like results. The thick, deep dual-sided microfiber pile absorbs two times more than traditional terry towels providing faster wipe off with less strokes. Single..... P/N 09-02353..... 3-pk..... P/N 09-02354.....



MICROFIBER WASH MITT - Meguiar's® extra thick Microfiber Wash Mitt is the ultimate choice for show car perfect finishes. The clear coat safe Microfiber lifts and traps dirt and grime for a brilliant, swirl-free finish. The comfort-fit cuff and soft inner lining make this wash mitt a pleasure to use. P/N 09-02355



EVEN COAT™ MICROFIBER APPLICATOR PADS - Meguiar's® Even Coat™ microfiber applicator is the ultimate pad for swirl free, show car perfect results. Gentler than a foam pad, this applicator is ideal for ultra fine polishing and waxing. Its large, 5 inch surface area allows for faster polishing and waxing. P/N 09-02356

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BOELUBE LUBRICANTS



A Space Age Lubricant developed by The Boeing Company that fights friction at the interface of the cutting edge and the workpiece. The reduction of friction at these surfaces minimizes heat generation and concurrent chip weld. Tools retain their cutting edge longer, leading to closer tolerances and prime chip yield. Manufactured from personal care ingredients, Boelube is non-toxic, non-irritating and biodegradable. Boelube is non-corrosive, non-flammable, chemically stable and free of halogens, heavy metals, sulfur, phosphorus, silicone, petroleum or paraffin wax.

BOELUBE BL70200-13 SOLIDS LUBRICANT

Drilling - Tapping - Reaming - Abrasive Belts - Files - Deburring Tools - Grinding Wheels - Chisels - Band, Circular and Hand Saw Blades. Boelube Solids improve tool life by reducing heat build-up in belt, disc or wheel grinding operations. Apply the push-up tube to the tool before start up. Individual Boelube Blocks are ideal for grinding operations. 1.6oz Push Tube 09-01731

BOELUBE 90 HIGH EFFICIENCY MACHINING LUBRICANT

BOELUBE® 90 is non-toxic, non-irritating, environmentally safe synthetic lubricant that is effective for machining many types of materials. BOELUBE® 90 will provide superior lubricity leading to better finish and longer tool life. BOELUBE® 90 is compatible with Aluminum, Titanium, Graphite, Composites, Honeycomb, Inconel, Kevlar, Wood, Ferrous and Non-ferrous Metals. BOELUBE® 90 is recommended for Drilling, Deburring, Broaching, Forming, Grinding, Milling, Gun Drilling, Routing, Reaming, Oil Hole Tools, Sawing, Punching and Tapping. BOELUBE® 90 is best utilized in One-Shot or Mist Applications, and is ideal for applications where Cold-Cut® or Positive-Lube units are utilized. 4oz Bottle 09-01734 Gallon 09-01733

BOELUBE 70104 LUBRICANT

BOELUBE® 70104 is non-toxic, non-irritating, environmentally safe synthetic lubricant manufactured from personal care ingredients that is effective for machining many types of materials. BOELUBE® 70104 will provide superior lubricity leading to better finish and longer tool life. BOELUBE® 70104 is non-corrosive, non-flammable, chemically stable, and free of Halogens, Silicone, Petroleum, Paraffin Wax, Sulfur, Phosphorus and Heavy Metals whether added or present in any of its ingredients. BOELUBE® 70104 is compatible with Aluminum, Titanium, Graphite, Composites, Honeycomb, Inconel, Kevlar, Wood, Ferrous and Nonferrous Metals. BOELUBE® 70104 is recommended for Drilling, Deburring, Broaching, Forming, Grinding, Milling, Routing, Reaming, Gun Drilling, Oil Hole Tools, Sawing, Punching and Tapping. Handheld lubricant 09-01732

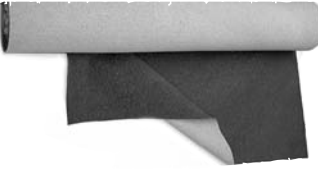
BOELUBE BL70307L PASTE

Boelube® Pastes provide excellent lubricity and are extremely cost effective in single point work such as Tapping, Drilling and Reaming. A small amount of Paste applied to the tool is all that is required to obtain a high quality finish and extended tool life with little or no clean-up required. Brush it on or dip tool in paste. Boelube pastes are also ideal for Forming and Bending as well as in Drop Hammer, Verson Press and Spin Forming applications. Boelube Pastes provide closer tolerance parts and extended diaphragm and die life. We furnish 70307 medium (blue) paste. 4oz Jar 09-01735.....

INTERIORS — PAINT SPRAY SYSTEMS

FOAM CUSHIONING

Foam Cushioning is a dense* open cell foam that can be used for glare shield padding, side panel padding, seat cushioning and for soundproofing. Meets FAR 25.853 burn requirements. Width is 48" and is sold by the linear yard. Available in 1/8" and 1/4" and thickness. *Density (pcf)/-.5 pcf=5



1/8" Foam cushioning P/N 11-02062/yd
 1/4" Foam cushioning P/N 11-02063/yd

Sample Kit (Includes sample of both SPT leather like vinyl and foam)
 Sample Kit..... 11-02061.....

ABS PLASTIC SHEETS



ABS thermoplastic fire-rated sheet material can be used as a base material for making of glare shields and side panel backing. Easily cut, drill, saw, and grind this ABS sheeting. The plastic sheets have an excellent ductility and formability. Meets FAR 25.853 burn requirements. Smooth flat surface on one side and a matte finish on the other side. Color: Black. Sheet size is .063" x 23.5" x 54'.

P/N 11-02054

LEATHER-LIKE VINYL UPHOLSTERY MATERIAL



Leather-Like Vinyl has the ultra-soft leather feel without the leather cost. It can be used for seats, wall panels and headliners. Meets FAR 23.853(a) flammability requirements. It provides superior wear resistance (100,000 cycles), abrasion resistance and excellent tailorability. Width is 54" and weight is 27 oz. per linear yard. Available in camel, gray and black. Pricing is per linear yard. Sample provides a small piece of each. Burn certificates are available upon request.

Gray P/N 11-02056/yd.
 Black P/N 11-02057/yd.
 Camel P/N 11-02059/yd.

Sample Kit includes small piece of each
 Sample Kit P/N 11-02061/yd.

COLOR-BOND LEATHER, VINYL & HARD PLASTIC REFINISHER



Color-Bond restores or changes the color of leather, vinyl, ABS plastic, PVC, polycarbonate, acrylic, fiberglass, lexan and thermal plastic urethane permanently. It is dry to the touch in 45 seconds and fully bonded in 10 minutes. It will not crack, flake or peel & gives complete grain simulation. You can change color over and over and never obscure the grain or affect the hand. It is now OEM approved by the Ford Motor Company. After 3-1/2 years of testing, the specification that Color-Bond passed is the first of its kind and is approved for worldwide use. Color-Bond will be distributed to the 5,200 Ford Quality Service Parts dealers of North America. It will also be used for repair of instrument panels, door panels and seats in all of the assemble plants. Color-Bond is excellent for restoration of aircraft seats, side panels, glare shields, and other items. Aircraft Spruce & Specialty Co. has been appointed as the aviation distributor for Color-Bond.



| Color | Size | Part No. | Price |
|---------------------|--------------|----------|-------|
| #3 Eggshell White | 6 OZ. Spray | 13-01496 | . |
| #76 Rustic Red | 6oz. Spray | 13-01969 | . |
| #106 Black | 12 OZ. Spray | 13-01495 | . |
| #108 Prairie Tan | 6 OZ. Spray | 13-05118 | . |
| #108 Prairie Tan | 12 OZ. Spray | 13-01497 | . |
| #107 Gray | 12 OZ. Spray | 13-01498 | . |
| #105 White | 12 OZ. Spray | 13-01499 | . |
| #105 White | 6 OZ. Spray | 13-05119 | . |
| #103 Navy Blue | 6 OZ. Spray | 13-05120 | . |
| #103 Navy Blue | 12 OZ. Spray | 13-01883 | . |
| #232 Saddle Tan | 6 OZ. Spray | 13-02474 | . |
| #117 Light Graphite | 6 OZ. Spray | 13-02475 | . |
| #194 Rouge | 6 OZ. Spray | 13-02476 | . |
| #254 Natural Tan | 6 OZ. Spray | 13-02477 | . |
| #231 Ivroy | 12 OZ. Spray | 13-02588 | . |
| #94 Jag Tan | 6 OZ. Spray | 13-01881 | . |
| #80 Light Smoke | 6 OZ. Spray | 13-01659 | . |
| #64 Crimson | 12 OZ. Spray | 13-01882 | . |

Molecubond color chart..... P/N 09-00327.....

GRACO HVLP SPRAY SYSTEMS

Virtually eliminates mist. Requires less maintenance. Blows less heat up the stack. Uses up to 50% less material. Delivers better pattern control. Reduces overspray up to 90% Eliminates high-pressure "flop" and tiger stripes.

GRACO HVLP AIR SPRAY SYSTEMS GTS-2500 HVLP SPRAYER



This lightweight, portable sprayer features the GTS-960 Bleeder Style Gun and offers outstanding performance in its equipment class. Easily spray stains, lacquers, oils, enamels and urethanes.

- Turbine Stages –2
- Cup – 1 qt (1 liter)
- Weight: Complete – 32 lb
- Turbine Air Working Pressure – 5 psi (.345 bar, 34.5 kPa) max.
- Turbine Air Outlet Flow Rate – 58 cfm (1642 lpm) max.
- Gun – GTS-960 Bleeder Style with Fluid Set #3
- Standard Turbine Air Hose Length—Standard units incl. 20 ft (6 m). Use 40 ft (12 m) max.
- Electrical Rating – 7A at 120 VAC
- Power Cord – No. 16 AWG, 3 wire, 6 ft (1.8 m)
- Shipping 18 in. x 15-1/2 in. x 16 in.
- The GTS-2500 is not designed for use with non-bleeder guns. P/N 12-15710

GTS-3800 HVLP SPRAYER



The GTS-3800 is highly productive for nearly all fine finish applications. Easily spray stains, lacquers, oils, enamels, urethanes and automotive finishes. Plus, it atomizes many water-based latex and acrylic coatings, multi-color and other higher viscosity coatings.

- Turbine Stages – 3
- Turbine Air Working Pressure – 6 psi (.414 bar, 41.4 kPa) max.
- Turbine Air Outlet Flow Rate – 80 cfm (2265 lpm) max.
- Gun – GTS-980 Non-Bleeder Style with Fluid Set #3
- Cup – 1 qt (1 liter)
- High-Flex Turbine Air Hose Length – Standard units incl. 30 ft (9 m). Use 60 ft (18 M) max.
- Power Cord – No. 16 AWG, 3 wire, 6 ft (1.8 m)
- Electrical Rating – 12A at 120 VAC
- Weight: Complete – 34 lb
- Dimensions: 18 in. x 15-1/2 in. x 16 in. P/N 12-15780

GTS-4900 HVLP SPRAYER



Our most powerful and versatile sprayer offers everything you need on the job for high productivity. This unit is loaded with features and can spray the broadest range of materials.

- Turbine Stages – 4
- Weight: Complete – 39 lb
- Turbine Air Working Pressure – 8 psi (.552 bar, 55.2 kPa) max.
- Turbine Air Outlet Flow Rate – 82 cfm (2321 lpm) max.
- Gun – GTS-980 Non-Bleeder Style with Fluid Set #3, #4 and #5
- Cup – 1 qt (1 liter)
- High-Flex Turbine Air Hose w/Quick disconnects – Standard units include 30 ft (9 m). Use 60 ft (18 M) max.
- Power Cord – No. 12 AWG, 3 wire, 15 ft (4.6 m)
- Electrical Rating – 14A at 120 VAC
- Dimensions: 18 in. x 15-1/2 in. x 16 in. P/N 12-15950.....

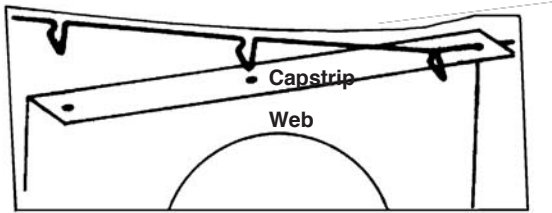
GRACO ACCESSORIES

| DESCRIPTION | P/N | PRICE |
|----------------------------|----------|-------|
| HVLP 1 Qt. Cup & Pot Assy. | 12-12990 | . |
| 2mm Needle/Nozzle (dopes) | 12-15750 | . |
| 2.8mm Needle/Nozzle | 12-15760 | . |
| 30 ft. Replacement Hose | 12-00016 | . |
| Superflex Hose 54" | 12-74660 | . |



NEEDLES – GROMMETS – PLATES

MARTIN FABRIC CLIPS



Used to secure fabric to metal ribs in wings and control surfaces. Replaces rib-stitch cord or P-K screws. Provides a more secure and streamlined installation. Drastically reduces covering time. FAA-approved for aircraft listed. Easily adapts to homebuilts with metal ribs. Spacing between clips, 3". Spacing may be reduced to 1-1/2" on high-performance aircraft by using 2 wires, with clips inserted in alternate holes that are spaced 1-1/2" apart. Fabricated from stainless steel wire. Supplied in 25-ft. continuous coils.

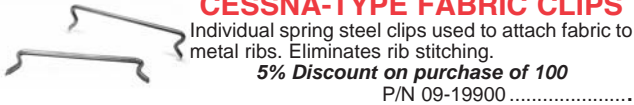
25-Ft. Coil..... P/N 09-19400

INSTALLATION KITS

| Aircraft Model | STC No. | Part No. | Feet Req'd. |
|--------------------|--------------------|----------|-------------|
| Aeronca-Champion | SA150S0 | 09-19500 | 225 |
| Piper — All Models | SA126S0 | 09-19600 | 175-250 |
| Stinson | SA615S0 | 09-19700 | 175 |
| Taylorcraft | Original Equipment | 09-19800 | 225 |

All install kits .. No clips are included. Order separately.
*If clips are used to secure fabric on controls, add 50 ft.

CESSNA-TYPE FABRIC CLIPS



Individual spring steel clips used to attach fabric to metal ribs. Eliminates rib stitching.

5% Discount on purchase of 100
P/N 09-19900

TAC RAGS



Tac Rags pick up dust like a magnet. Use Tac Rags in final cleaning or dusting of surface before applying enamel, lacquer or synthetic paints. Wipe surface gently to remove all dust, lint and fine sand particles from metal, wood or plastic surfaces. Tac Rags are anti-static, epoxy compatible, and remain soft and tacky indefinitely. Individually packaged. Size: 18" x 36".

P/N 09-20000..... ea...../Dzn

FINE-LINE PAINT TAPE



This 3M™ tape is particularly suitable for pin stripping, multicolor and other custom painting applications. It is a thin, conformable green polypropylene film tape with a special finish that resists paint runoff. The adhesive adheres instantly and offers good holding power, resists lifting and curling.

Stretchable and easy to handle. Provides an extremely fine color-line separation for decorative painting of aircraft. Scotch No. 218.

1/8" x 60 Yds. P/N 09-20200

1/4" x 60 Yds. P/N 09-20300

3/8" x 60 Yds. P/N 09-20350

1/2" x 60 Yds. P/N 09-20400

3/4" x 60 Yds. P/N 09-20500

Less 10% on 6 Rolls (Assorted) • Less 15% on 12 Rolls (Assorted)

WOOD BRUSHES



Natural, undyed bristle with smooth, unpainted wood or polyethylene handles. Unaffected by paint, dopes, thinners or solvents.

| Brush Width | Part Number | Price Each | Brush Width | Part Number | Price Each |
|-------------|-------------|------------|-------------|-------------|------------|
| 1/2" | 09-21100 | . | 2-1/2" | 09-38825 | . |
| 1" | 09-21200 | . | 3" | 09-38803 | . |
| 2" | 09-21300 | . | 4" | 09-38804 | . |

Discount: Less 10% on 50, 15% on 100 (per size)

ACID OR GLUE BRUSHES



Horse hair with metal handle.

#1- 3/8" Wide..... P/N 09-21400 ea.....\$3.65/dz.
#2- 1/2" Wide..... P/N 09-21500 ea.....\$3.65/dz.

DOLLAR PATCHES



Grade B fabric patches for quick repairs on Grade B & Dacron covering. Smooth edge, 2.5" dia. Also available in Dacron which are more durable & less noticeable on aircraft exterior. Less 10% For 12 or More.

Grade A cotton patches..... P/N 09-17700...../ea
Dacron Dollar Patches P/N 09-17705...../ea

RIB LACING & SEWING NEEDLES



3" Curved Needle 3C..... P/N 09-18705...../ea
6" Curved Needle 6C..... P/N 09-18710...../ea
12" Curved Tip Needle 12C..... P/N 09-18720...../ea
12" Straight Needle 12..... P/N 09-18725...../ea
18" Curved Tip Needle 18C..... P/N 09-18730...../ea
Needle Assortment includes 1 each of the following: 3" curved, 6" curved, 12" curved, 12" straight, 18" straight.
P/N 09-18735.....

RIB STITCH NEEDLES



Made from the highest quality steel. Heat treated, nickel plated.

2-1/4" Curved 18 Gauge P/N 09-18300/ea
4" Straight 15 Gauge P/N 09-18400/ea
10" Straight 13 Gauge P/N 09-18500/ea
14" Straight 13 Gauge P/N 09-18600/ea
18" Straight 12 Gauge P/N 09-18700/ea

"T" HEAD PINS



Used to hold fabric in place temporarily in covering operation.

Plated steel, 1-1/2" L. 100 Pins..... P/N 09-18850.....

SCREWS



Used on some aircraft models to attach fabric to metal wing ribs and empennage ribs instead of rib lacing. Truss-head, type "A" self-tapping sheet metal screws. Size #4 x 1/4".

Stainless Steel, Phillips Head P/N T4X4...../ea
Stainless Steel Type A, Phillips P/N 4RX1/2SS...../ea
Stainless Steel Type A, Phillips P/N T4X6...../ea

AD-41H CLOSED-END BLIND POP RIVET

1/8" diameter. Used to seal tubing vent holes.



P/N 04-01496/ea

BLIND RIVETS



Use these 1/8" dia. "Pop" rivets to attach fabric to the ribs on Champion/Bellanca aircraft. 100 Rivets.

P/N 09-18900

WASHERS



Aluminum washers may be use in place of original plastic washers under screws and pop rivets to attach fabric to metal wing or empennage ribs.

Plastic, 1/8" I.D. x 1/2" OD

P/N 09-19000

Aluminum, 0.128" ID x 1/2" OD x 0.016

P/N 09-19100

DRAIN GROMMETS

Manufactured from virgin cellulose acetate butyrate resin.

| Grommet Type | Part No. | O.D. | I.D. | Price each | Grommet Type | Part No. | O.D. | I.D. | Price each |
|--------------|----------|--------|-------|------------|--------------|----------|--------|------|------------|
| Flat | AN231-1 | 1-1/4" | 3/8" | . | Seaplane* | AN231-4 | 1-1/8" | — | . |
| Flat | AN231-2 | 3/4" | 5/16" | . | Aluminum | 09-19110 | 3/4" | 1/4" | -- |

*Depressed center — LESS 15% ON QTY. OF 100 (per Part No.)

INSPECTION RINGS



Plastic rings, 4-5/8" O.D. x 3-1/2" I.D. x .050" thick, molded from virgin cellulose acetate butyrate resin. To be cemented to fabric as inspection plate retainer. 20% Discount on 100 or more.

P/N 09-19200..... ea

INSPECTION RING PATCHES

Glued over inspection rings to prevent accidental removal.

P/N 09-18750..... ea

INSPECTION PLATES



DOMED - Concave aluminum snap-type plate has single clip riveted across full diameter. Snaps to the ring at 2 contact points. Plate is 4.75" dia.

P/N 09-19300/100

RECESSED - Recessed center and flanged-edge design will not creep off center due to vibration in propwash areas. 4-3/4" dia. x .020 aluminum. Will not twist or vibrate. P/N 09-18740..... ea

CLEAR AIRCRAFT INSPECTION PLATE COVER



This is a clear window, aircraft inspection cover that is a cover replacement for a 3.5" inspection ring.

The plate is made from Lexan plastic, can be used with an inspection hole size of 3.38 minimum up to a 3.56 maximum, and should not be installed on aircraft traveling at speeds in excess of 250 knots. It can be cleaned with standard aircraft windshield cleaners. P/N 09-02114.....

PAINT ACCESSORIES – REPAIR KITS

PREVAL SPRAY GUN

Sprays paints, primers, gel coats, lubricating oils, cleaners, zinc chromate, etc. Perfect color matches in minutes. No wires, no hoses-portable and disposable. Sprays up to 16 ounces of any liquid thinned to the same consistency as for heavy spray equipment.

#267 Complete Set P/N 09-00339.....
 #268 Power Unit..... P/N 09-00340.....
 #269 Product Container P/N 09-00341.....



PAINT SAVER LIDS

Saves money, paint and clean-up time. Snaps onto top of can and pulls off quickly. Prevents drips down side of can and paint from getting in grooves of can. Made of rigid, long-lasting, recyclable plastic. Reusable.

P/N 09-01754.....



POUR-IT REUSABLE PAINT LID

The only reusable paint can lid that seals to the inside of all one gallon cans. This keeps the paint out of the lid channel for a perfect re-seal. It keeps all contaminants out of your paint. As it was designed for accurate pouring, it also has a quality screw cap on the pour spout for easier access to trim paints, primers & sealers that are used often, in smaller quantities. Pourit eliminates hazardous paint spill, saves clean-up time and reduces material waste. It is washable and reusable. This product should be used anytime you open a round one gallon can.

P/N 09-01756.....



JR. POUR-IT REUSABLE PAINT LID

Quality screw cap for easy access and is large enough for a 2" brush. It grabs the outside of the quart can so it will seal to the inside rim. Jr. Pourit converts any quart can into a jar for maximum material usage. It is washable and reusable. This product should be used anytime you open a one quart can.

P/N 09-01757.....



STORE-IT PAINT SAVING DISC

The only paint saving disc that floats on top of any left over paint in a one gallon can. Storeit will eliminate the skinning and spoiling of paints in storage for reuse at a later date. It will contain VOC's in open containers. It will also eliminate all of your consumer waste disposal expenses associated with these problems. Storeit should be used anytime a paint is prone to skinning or any paint is put into storage for a long period of time. It is washable and reusable.

P/N 09-01758.....



Storeit is patented in the U.S. with other patents applied for.

SPATCHIT PAINT SPATULA

Designed to remove all of the remaining paint from your one or five gallon container. Used as a spatula, it will eliminate the need for 'ragging clean' the cans before recycling or disposal. It will eliminate your paint waste allowing you to transfer the last bit of paint into a smaller container for later use. This product should be used any time you are emptying a paint can. It is washable and reusable Spatchit has patents pending in the U.S.

P/N 09-01759.....



AERODYNAMIC DENT FILLER

An easy-to-use two-tube system of aluminum filled resin & curing agent. Aluminum dent filler may be used wherever shallow dents occur. Gel time is 10-15 minutes at 70°F. Repair cures to 80% strength in 90 minutes. Used extensively by the airlines and applicable to general aviation repairs.

180g Kit.....P/N 80000-328.....



PIPER INSPECTION FRAMES

Front & Rear Strut Opening Reinforcements - Set of 4

P/N 09-00334.....

Naugahyde Cable Seal Kit - 2 slotted fuselage and 2 aileron punched cable seals Set of 4 ... P/N 09-00335

Front Trim Yoke Inspection Frame..... Set of 2 ... P/N 09-00336

Underwing Inspection Ring Grommet Set of 2 ... P/N 09-00337

Tear Drop Reinforcement..... Set of 2 ... P/N 09-00338

POLYESTER FLANNEL

45" width. For leading edge..... P/N 09-01750 /yd

SCOTCH-BRITE™ ULTRA FINE HAND PAD 7448

Use for cleaning, scuffing, deburring and finishing by hand with water or solvents. Will never rust.

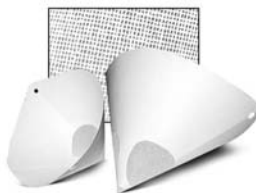
P/N 09-01753 /ea



PAINT STRAINERS

Cone type strainer. Medium mesh (48x36), for filtering all pigmented finishes.

P/N 09-22200 .ea.



PAINT FILTER MASKS (3M)

Effective paper throw-away masks. Give excellent filtration for nontoxic dusts, powders and spray particles. 3M No. 8500

P/N 09-00522..... ea



PAINT STIRRING PADDLE



P/N 09-22205.....

AIRCRAFT SPRUCE PAINT CAN OPENER



P/N 09-02063.....

**FOR MORE 3M™ PAINT SUPPLIES
AND ACCESSORIES SEE PAGES 345-352.**

CS

TEMPO FINISHES



AIRCRAFT SPRAY COATINGS

All Tempo spray products feature the exclusive adjustable Fanspray valve which offers a professional spray pattern so anyone can "paint like a pro". The extra-width pattern evenly coats about 3 times the area with each pass compared with an ordinary spray valve. Packaged in 11 oz. to 16 oz. cans, depending on product.

Discount: 10% on 6 cans, 15% on 12 cans, 25% on 24 cans. (May be assorted.)

ULTRA-HIGH TEMPERATURE PAINTS

Exceptional durability up to 1200°F. Will not burn off, chip or peel when properly applied. No primer required. Ideal for exhaust stacks. Ultra-High Temperature paints air-dry in minutes but require curing at temperatures over 650°F.

- White #13-1
- Black #13-2
- Racing Silver #13-8.....

TEMPO MAINTENANCE & SPECIALTY PRODUCTS

Fluorescent Paint (Red/Orange) — Up to 4 times brighter than other colors. Ideal for aircraft, boat - wherever visibility is vital. For best results, use over light colored base.

#18-1301 **J/ea.**

Chrome Paint — restores new chrome appearance to chromed surfaces.

#20-199 **J/ea.**

Scratch Filler Primer — Ideal for filling nicks, scratches, and minor surface imperfections. They dry fast, are sandable, and provide a smooth uniform surface for top coats.

#7-3500 - Red Oxide..... **J/ea.**

#7-4500 - Platinum Gray **J/ea.**

AIRCRAFT ENAMEL

Excellent adhesion to aluminum and steel

Tempo's Aircraft Enamel has been especially formulated to adhere to aluminum and steel; providing excellent corrosion resistance. Recommended applications are all interior and exterior aluminum and steel surfaces, including wheels, landing gear and inside door hatches. For propeller blades, we recommend Epoxy Propeller Coating.

Neutral Gray Enamel Primer #750..... **J/ea.**



- 09-00985 Black.....
- 09-00989 Gloss White.....
- 09-00987 Medium Gray.....
- 09-02070..... Flat Black.....
- 09-00988 Flat White.....
- 09-00991 Aluminum.....

AIRCRAFT ENGINE ENAMEL

Resists heat to 500°F

Tempo's Aircraft Engine enamel withstands the high heat demands of aircraft engines. This modified chain-stop alkyd enamel formula has excellent corrosion and fuel resistance.

- P/N 219Lyc. Gray.....
- P/N 23Olds Cont.Gold.....
- P/N 09-00995Gloss Black.....
- P/N 817Black Wrinkle.....
- P/N 1770Univ. Black.....

CS



PREMIUM SELF-ETCHING PRIMER

Etches and primes in one easy step. Can be used under all today's automotive finishes. Perfect for spot repairs. Creates superior adhesion on most plastics, fiberglass, bare steel, aluminum and stainless steel. Color: Green. 12oz. Spray Can

P/N 09-02099.....



CAN-GUN

Can-Gun is an aerosol spray can trigger handle which makes painting, cleaning, and lubricating jobs safer and easier. The user-friendly form-fit handle and trigger eliminates finger fatigue and provides the user with accurate control over the amount, speed, and direction of spray. The built-in safety shield insures no more messy hands or fingers. Sprays virtually all spray paints,

lacquers, polishes, cleaners, lubricants, sealers, and adhesives and Can-Gun fits most spray cans. P/N 09-14760..... **ea.**



AIRCRAFT LACQUER

Dries in under 15 minutes

Tempo's Aircraft Lacquer is ideal when a very fast dry is required. This blended nitrocellulose lacquer formula can be applied to all interior and exterior aluminum and steel surfaces, including wheels, landing gear and inside door hatches. When additional corrosion protection is required, we recommend Tempo Aircraft Enamel.

- Clear P/N 809.....
- Flat Black P/N 810.....
- White..... P/N 9-180.....
- Blk Acrylic P/N 09-01032.....



EPOXY PROPELLER COATING

Extends blade life. Tempo's Epoxy Propeller Coating is formulated with the extra adhesion and abrasion resistance needed to protect propellers from corrosion and wear. Compared to standard enamel and lacquer paints, our epoxy formula stays on the blade more flying hours; hence, with regular use, this formula can extend blade life.

Flat Black..... P/N 09-00982.....

Med. Gray..... P/N 09-00983.....

(Matches Hartzell OE Gray)

White P/N 09-00992.....

ZINC PHOSPHATE AND ZINC OXIDE PRIMERS

Maximum adhesion to bare aluminum and steel

Tempo's Zinc Phosphate and Zinc Oxide Primers are recommended for priming bare metal. These primers provide maximum bonding to bare aluminum and steel. Tempo's Primers have been the workhorse in the aviation industry for many years. Zinc Oxide has been recently introduced to provide a "safer, healthier" alternative to Zinc Chromate with equal performance.

The A-701 Yellow and A-702 Green Zinc Phosphate Primers meet the performance standards outlined in Federal Specification T-P-1757A. They also exceed the 800 hours of salt spray fog test (ASTM #B117). A-701 will replace A-901 Yellow and A-702 will replace A-902 Green.

- Yellow (12oz.) A-701 P/N 09-02128.....
- Green (12oz.) A-702..... P/N 09-02127.....

METAL CLEANERS — PRIMERS

PREKOTE SURFACE PRETREATMENT



PreKote® Surface Pretreatment from Pantheon Chemical, is a non-chromated surface pretreatment utilizing a safe, hazard-free technology that is flying on over 1,500 United States Air Force aircraft. PreKote® offers superior adhesion, improved paint flexibility, and advanced corrosion

protection on painted surfaces, relative to traditional chromate and conversion pretreatments (such as alodine). PreKote® has passed stringent testing by the U.S. Department of Defense, the Boeing Company and other coating industry leaders. By eliminating the need for chromated conversion coatings (such as alodine), acid etches, solvent washes and other toxic processes, PreKote® can reduce paint preparation time and costs by up to 40%. PreKote® can be used on a wide range of surfaces including aluminum, steel, magnesium, titanium, CRES, galvanized surfaces, composite and plastic surfaces. Consistent, high performance results are achieved with a variety of paints and primers. PreKote® is non-toxic, non-corrosive, non-flammable, CFC free, ODS free, odor free, and readily biodegradable upon disposal. FEATURES: • Easy & safe process • Quantified superior results • Immediate cost reductions • Reduces hazardous waste • Decreases material, labor, and hazardous handling costs • Results in a high-performing surface finishes • No short and long term health risks.

Quart.....P/N 09-00825 Gallon..... P/N 09-00826
5 Gallon.P/N 09-00827 55 Gallon. P/N 09-00828
Prekote Large area repair kit..... P/N 09-00829.....

ALUMINUM PREPAINT PRODUCTS ALUMIPREP USED FIRST MAKES THE PAINT FINISH LAST!

Use on unpainted aluminum aircraft, truck trailers, house trailers, boats, garage doors, outdoor furniture, etc.



ALUMIPREP NO. 33 – Use to clean, brighten and transform badly corroded aluminum to its natural appearance. Covers 400 sq.ft. per quart.

Qt. P/N 09-01621
Gal. P/N 09-01620



ALODINE NO. 1001 – An invisible coat to provide in-depth corrosion proofing to the brightened aluminum surface and act as a firm barrier against the elements and continued corrosion. Covers 250 sq.ft. per quart.

Qt. P/N 09-01628
Gal. P/N 09-01629



METAL PREP NO. 79 – A brush-on, wipe-off aluminum cleaner and paint preparer in one powerful, easy-to-apply formulation. It etches the metal, neutralizes hand marks, is smutless on alloy surfaces, removes oil and grease and will not burn. It provides a firm and lasting adhesion between aluminum alloys and paint. Dilute with 2 or 3 parts of water. Improved in early 1985, Metal Prep No. 79 is now even more active on the metal surface and offers superior performance. Covers 400 sq.ft. per qt.

Qt. P/N 09-01625
Gal. P/N 09-01624.....

ALODINE NO. 1201 – After precleaning with Alumiprep 33 or Metal Prep 79, rinse with water. Apply Alodine without dilution by brushing or swabbing with sponge. Rinse with water and surface is ready for paint. This is a visible coating which leaves the surface with a golden coloration. The alodized surface provides protection against weather and firmly bonds paint. One quart treats about 200 sq. ft.

Qt. P/N 09-01619
Gal. P/N 09-01618.....



AQUAPREP AVIATION METAL CLEANER



Aquaprep is a safe, superior cleaner for use on any metal or hard surface and is designed to replace solvent cleaners. It may be used on painted, primed, or bare metal surfaces. It is non-staining, provides improved cleaning and improved corrosion resistance, and is compatible with MetalPrep and Alodine. Designed to remove sealers, wax, grease, silicone, and crayons. Try some new Aquaprep on your next metal cleaning project. Covers 400 sq.ft. per quart.

1 Gal. P/N 09-42100.....



ALODINE TOUCH-N-PREP 1132

Touch-N-Prep Alodine 1132 no-rinse conversion coating effectively phosphates most metals including aluminum, ferrous and galvanized substrates. Doesn't require rinsing, and can be air dried or force dried with hot air or an infra-red lamp. High density acrylic tip of the Touch-N-Prep applicator can be modified with a single edge razor blade to form any shape. The application method controls the amount of coating applied to the surface. Covers 20 sq.ft. P/N 09-01630.....

AKZO FAST DRYING INTERIOR EPOXY PRIMER



AKZO interior epoxy primer #463.12-8 is a chemically cured 2-component epoxy primer designed to provide maximum protection from various chemicals, hydraulic fluids, aviation fuels, hydraulic fluids, and corrosive causing media. Drying time to touch is 15 minutes and to recoat is 1-24 hrs. Shelf life: 2yrs, Color:

Green. Used extensively in military and aerospace applications and popular with aircraft builders. Uses 1 gallon of primer and 1 gallon of catalyst.

2 gal. kit P/N 09-24735
TR-19 Thinner..... P/N 09-00439

RANDOLPH W-2248 EP-420W EPIBOND EPOXY PRIMER (WHITE)

This white heavy duty chemical & solvent resistant amine cured primer is fast drying and corrosion inhibiting. Can be applied & cured to temps down to 35°F. Mixing ratio is 2 parts base primer: 1 part EP-430 Catalyst. Order in kits.



| Product | Part No. | Quart Price | Gallon Part No. | Price |
|------------------------------|----------|-------------|-----------------|-------|
| W2248/EP420 Primer White kit | 09-00573 | . | 09-00574 | . |
| Epoxy White base | 09-00564 | . | 09-00565 | . |
| Rand E-500 Reducer | 09-00566 | . | 09-00567 | . |
| Rand EP430 Catalyst (pt)(qt) | 09-00570 | . | 09-00571 | . |

RANDOLPH B-6433 RAND-O-PLATE EPOXY PRIMER (DARK GREEN)

This green primer is solvent resistant, amine cured, fast drying and corrosion inhibiting. Can be applied & cured to temperatures down to 35°F. Mixing ratio is 2 parts base primer: 1 part EP-430 Catalyst. Order in kits.



| Product | Quart Part No. | Gallon Price | Part No. | Price |
|------------------------------|----------------|--------------|----------|-------|
| Rand B6433 PrimerGreen kit | 09-00575 | . | 09-00576 | . |
| Epoxy Green base | 09-00568 | . | 09-00569 | . |
| Rand E-500 Reducer | 09-00566 | . | 09-00567 | . |
| Rand EP430 Catalyst (pt)(qt) | 09-00570 | . | 09-00571 | . |

RANDOLPH EPOXY VARNISH EV-400/EV-410

An excellent clear gloss epoxy varnish for interior and exterior use. It provides superior weather durability and excellent chemical and solvent resistance. Can be used over a one component varnish primer if desired. Mixing ratio is 2 parts base varnish: 1 part EV-410 Catalyst. Order in kits.



Quart Kit (yields 2.5 qts) Incl. EV-410 Catalyst & E-500 Thinner
P/N 09-00670

Gallon Kit (yields 2.5gal) - Incl. EV-410 Catalyst & E-500 Thinner
P/N 09-00671

Base: Quart 09-00666
Gallon 09-00667

Catalyst: Pint 09-00668
Quart 09-00669

E-500 thinner (Reduce 50%)
Quart 09-00566
Gallon 09-00567

RANDOLPH EPOXY ACCELERATOR EX-501

A chemical curing accelerator for use in W-2248 EP-420W Epibond Epoxy Primer, B-6433 EP-420G Rand-O-Plate Epoxy Primer, and EV-400 Epoxy Varnish according to direction on base component label. Reduces polymerization time, not solvent evaporation.



1/2 Pint P/N 09-04650

RANDOLPH C-2210 PAINT SURFACE CLEANER

A mild solvent blend formulated to remove oil, silicone, wax, and other contaminants from all metal surfaces before priming. Also removed tape gum from painted surfaces and acrylic windshield materials.



Qt. P/N 09-40810
Gal. P/N 09-40820

CS

PRIMERS – SOLVENTS - PAINT REMOVERS



STEWART SYSTEMS EVERSHIELD CERAMIC SURFACE TREATMENT

An Easy-To-Apply Glass-Like Finish With Many Incredible Protective Properties For Almost Any Aircraft Surface. In tests it resists blow-torch heat (yes, blow-torch flame) above 2000°F. It is impervious to virtually any chemical. It is excellent for hardness, flexibility, impact and scratch resistance, adhesion, and corrosion protection.

On any aircraft, EverShield has applications from nose cone to tail cone. Wiped on a prop, this incredible film sheds bugs, pebbles, salt spray, whatever. On an exhaust, it seals the metal from corrosion and by refraction reduces heat transmissions to cowling and elsewhere. On leading edges bugs slide off. Over the entire plane, the slick surface fortifies the boundary layer, reduces drag.

It is non-hazardous (like all SS products). Cleans up with water (or solvents). Grips most any surface, from stainless steel, to plexiglass, to paint. EverShield is a true breakthrough miracle coating. There's nothing comparable available. Once you use it you'll continue to find a myriad of applications. Better give it a try soon.

STEWART SYSTEMS EVERSHIELD is a two-component, ceramic clearcoat/chemical treatment system designed for Original Equipment Manufacturers (OEM) to protect the substrate over which it is applied from corrosion and oxidation. Will not yellow, chip, crack, or peel. If gouged or damaged, the finish will not experience creepage and is repairable. A low VOC and EPA compliant coating. Considered non-hazardous by EPA definitions and does not contain lead or chromates. Please follow local and state regulations in the proper use and disposal of this product.

| Kit | | | Curing Rinse | | |
|--------|----------|-------|--------------|----------|-------|
| Size | Part No. | Price | Size | Part No. | Price |
| 2 oz. | 09-00465 | . | 2 oz. | 09-00476 | . |
| 4 oz. | 09-00466 | . | 4 oz. | 09-00484 | . |
| 8 oz. | 09-00467 | . | 8 oz. | 09-00485 | . |
| Quart | 09-00468 | . | Pint | 09-00486 | . |
| Gallon | 09-00469 | . | Quart | 09-00487 | . |
| | | | Gallon | 09-00488 | . |



STEWART SYSTEMS WATERBASE STEEL CONVERSION COATING

A water-based product that eliminates rust by accomplishing two functions at the same time. First, rust is converted to ferric iron, a black organic compound. Second, a coating of clear acrylic is formed over the coated area. The surface that remains after the transformation can be either left black or coated with Stewart Systems wide range of products for the desired outcome. Product tests have shown that SS Conversion Coat has extended the life of equipment or products for several more years after probable replacement. SS Conversion Coat can be used on all rusted surfaces.

P/N 09-00482.....



STEWART SYSTEMS PRIMER / SEALER

A high quality, single component primer. Performance is equal or superior to that of single component solvent based primers. Primer/Sealer offers good coverage, excellent durability, and ease of application, as well as being a low VOC and EPA compliant coating. Our primer sealer can be custom made as a high build product enabling you to fill small imperfections

and pin holes on composite surfaces. For use on aluminum, steel and composite surfaces.

Quart P/N 09-00464

Gallon P/N 09-00481



STEWART SYSTEMS ALUMINUM ETCH / CLEANER

EkoEtch Aluminum Etch is a concentrated combination acid based detergent and degreaser. EkoEtch removes scale, corrosion, light oil, processing fluids and brightens aluminum. EkoEtch is non-hazardous, water reducible and non-flammable. Use EkoEtch to prepare both old and new aluminum surfaces before applying Stewart Systems Primer/ Sealers.

P/N 09-00473.....

X-IT CARBON REMOVER & CLEANER

X-IT™ Carbon Remover & Cleaner from Pantheon Chemical is a revolutionary aerospace chemistry powerful enough for difficult cleaning applications, but safe enough for daily routine aircraft cleaning & maintenance. X-IT™ Carbon Remover & Cleaner is safe on all surfaces (rubber, plastic, metal, painted or unpainted) & quickly removes heavy carbon, dirt, grease, grime and oil. X-IT™ Carbon Remover & Cleaner is non-toxic, non-corrosive, nonhazardous, odorless, and aqueous-based.

32oz. spray bottle P/N 09-00768

Carb Cleaner & Remover Gal..... P/N 09-00769

Carb Cleaner & Remover 5 Gal P/N 09-00770

Carb Cleaner & Remover 55 Gal .. P/N 09-00771



SURE STRIP PAINT REMOVER

Removes urethanes, epoxies, lacquers, primers, enamels, vinyls, varnishes, acrylics, shellac and polyesters. Washing off with water leaves a clean film-free surface that is ready for refinishing. Product of Certified Coatings Products Co.

1 Qt. P/N 09-05701

1 Gal..... P/N 09-05710

5 Gal..... P/N 09-05715



CERTIFIED COATINGS MEK

Used to clean fabric prior to applying the first Poly-Brush coat. Also used to clean brushes, paint guns, etc.

Quart P/N 09-13700

Gallon..... P/N 09-13800



CERTIFIED COATINGS ACETONE

Use to remove lacquer finishes, for cleanup after painting, and to soften lacquers or acrylics that have set up in spray guns or hoses. It has little effect on polyurethane which has cured in the lines. Use only virgin acetone as recovered acetone can damage virtually anything on which it is used.

Quart P/N 09-13200

Gallon..... P/N 09-13300

AIRCRAFT SPRUCE ACETONE

Use to remove lacquer finishes, for cleanup after painting, and to soften lacquers or acrylics that have set up in spray guns or hoses. It has little effect on polyurethane which has cured in the lines. Use only virgin acetone as recovered acetone can damage virtually anything on which it is used.

Pint P/N 01-01077

Quart P/N 01-01078

Gallon..... P/N 01-01079



CERTIFIED COATINGS TOLUENE (TOLUOL)

Can be used as a reducer for enamels, wing walk compound, zinc chromate primer, etc.

Quart P/N 09-14100

Gallon..... P/N 09-14200

TOP PAINT STRIPPERS

TOP PAINT STRIPPER (PRO)® - 5000-B (Brush/Spray type)

TOP Paint Stripper (Pro) 5000-B has been specially formulated for aircraft and marine applications. Removes epoxy and polyurethane from metal surfaces. Also removes varnish, baked varnish, lacquer, baked enamel and baked urea alkyd coatings, phosphate & chromate coatings. Concentration: Use full strength, as received. Note: 55 Gallon drums are stripped shipped direct for customer from factory in Canada.

| Size | Part No. | Price |
|-------------|----------|-------|
| 1 Gal Can | 09-02142 | . |
| 5 Gal Pail | 09-02143 | . |
| 55 Gal Drum | 09-02144 | . |

TOP PAINT STRIPPER® - EF 6600-B (Brush/Spray type)

Environmentally Advantaged TOP Paint Stripper 6600-B has been specially formulated for aircraft and marine applications. * Boeing Certified (D6-17487) * No Methylene chloride, No Phenols, No Chromates, no chlorinated solvents * PH neutral * Low odor * High Flashpoint; non-flammable * No heat needed * Ideal for removing multiple layers of paint * Easily rinsed from parts with either steam or high pressure water. Note: 55 Gallon drums are stripped shipped direct for customer from factory in Canada.

| Size | Part Number | Price |
|-------------|-------------|-------|
| 1 Gal Can | 09-02139 | . |
| 5 Gal Pail | 09-02140 | . |
| 55 Gal Drum | 09-02141 | . |

FABRIC REJUVENATORS

A blend of deep cutting solvents which penetrates the dope finish and restores some of the original flexibility. Use on old fabric in fair condition. Do not use on weak or rotted fabric. Specify type of finish. Rejuvenator Type Certified Coatings Nitrate Rejuvenator Butyrate Rejuvenator Stits Poly-Fiber RJ-1200

| 1 Gallon | | 5 Gallon | | 1 Quart | |
|----------|-------|----------|-------|----------|-------|
| Part No. | Price | Part No. | Price | Part No. | Price |
| 09-22500 | . | 09-22600 | . | 09-01263 | . |
| 09-22700 | . | 09-22800 | . | 09-01264 | . |
| 09-05300 | . | | | | |

CS

NUVITE POLISH - PROTECTANT SYSTEMS

NUGLAZE SUPER PAINT GLOSSER



Nuvite introduces NuGlaze to create a super high gloss "show quality" finish for paint in new or excellent condition, and it adds a U/V and sealant protection. It will put that final "wet-look" finish on good paint, and can be used as a final step for maximum gloss after using a drywash cleaner/polish such as Nuvite NuPower II. With regular NuGlaze use, a continuing surface barrier against most

of the effects of airborne chemicals and ultraviolet radiation is created. Paint can be maintained in "new" condition longer and maintain the color balance intended by the manufacturer with regular use.

Bugs and normal soil remove easily from a NuGlaze surface, and the added gloss keeps the "new paint" look longer. NuGlaze is simple to use and avoids complicated setups and special application or buffing equipment. Proven techniques and continuing technology advancement from Nuvite have come together to produce NuGlaze - the best thing you can do to maintain and protect your near-new or "new-looking" paint.

1Gal 09-01224
5Gal 09-01225



NUVITE CITRI-CUT CLEANER

NuVite CitriCut is a citrus based airframe wetwash and wipe-down cleaner. Pleasant citrus smelling wet wash or wipe down cleaner that is especially friendly to the environment. Works great for standard wet washing with mops or scrub pads. When used as a wet wash, water sheets off, minimizing water spotting. CitriCut is also handy for hand debugging

or hand wipe down without need for rinse -so there is no need for water or floor cleanup. Spray CitriCut at 1:8 from hand trigger sprayer for hand debugging or wipedown and wipe with terry towel until clean. Use a clean towel to buff up surface shine. No need to rinse surface. Supplied as concentrate—use 1:8 for hand wipe down or 1:16 in wet wash water.

P/N 09-00584.....



NUVITE ONE-TIMER KITS

Give Your Plane a Show Winner Shine!

Two Quarts of Fantastic Nuvite NuGlaze with PFS to give your new quality paint a super show gloss look and U/V protection! Includes special terry applicator pad, towels and special microfiber gloss finishing cloths.

For Nuvite NuGlaze details see Part No. 09-01224 & 09-01225.

P/N 09-02025

Clean & Polish in One Step!



Two quarts of Famous Nuvite NuPower II cleaner/polish. Will clean tough dirt & oil and give your paint a slick, shiny "New Paint" look and leave a protective coating against the sun's U/V damage. Includes three terry application towels and two special finishing gloss microfiber cloths. For Nuvite NuPower II details see Part No. 09-00581 & 09-00580. P/N 09-02026



Restore Your Paint to Look Great Again!

Two quarts of super Nuvite NuPol heavy-duty cleaner and paint restorer—will clean up a really "grimy one", removing paint surface oxidation to reveal the bright color paint you once had, and leave an amazing super shine with UV protection! Includes two special spun fiber application pads and three terry polishing cloths.

For Nuvite NuPol details see Part No. 09-00583 & 09-00582.

P/N 09-02027

NUVITE C-49 SUPERCLEANER



Nuvite C-49 SuperCleaner is the most versatile and effective cleaner you can buy when you want to clean fabrics, leather, carpet, plastics, laminates and even metals! In other words, for cleaning all types of surfaces generally found in commercial & private aviation, building or institutional interiors, RV, truck and marine interiors, or even home interiors!

P/N 09-02089

NUVITE SS9-3 CLEANER



Nuvite SS-9-3 is the championship-caliber answer to the need for an effective and safe all-purpose liquid alkaline cleaner. It will clean the toughest of underbelly grease, oils and fluid leakage at full strength, or can be diluted to 1:12 to make an easy-to-use debugger and whole-airframe wipedown fluid that leaves a beautiful squeaky-clean and shiny surface that does not need to be rinsed. It works great for in-place cleaning during other airframe or engine maintenance.

P/N 09-02084

NUVITE LEATHER GUARD



Nuvite Leather Guard helps you keep that brand-new, supple, fine finished leather look and feel for luxury aircraft, RV or automotive seating, fine furniture or institutional use. Leather Guard is the finest enriching formula available for leather nutrition.

P/N 09-02091

NUVITE POLISH/PROTECTANT SYSTEMS

Nuvite's surface finish enhancement and protection technology offers the highest-performance surface maintenance and protection systems available. These products are designed to be used on your aircraft, boat, recreational vehicle, truck, auto or other vehicle anywhere, anytime. Nuvite has the answer for your operations in an EPA-sensitive environment.



NUPOL POLISH / RESTORER / UV PROTECTANT

Same easy wipe on, let dry, wipe off surface cleaner with enhanced cleaning and oxidation removal capabilities. Ideal for tough cleaning due to long intervals between cleanings. Leaves a beautiful shine and an effective UV protective barrier.

Qt. P/N 09-00583
Gal. P/N 09-00582



NUPOWER II POLISH/UV PROTECTANT

Dry Wash Cleaner and Polish (Routine dry wash cleaning with gloss enhancement and UV protectant barrier) - Use for routine cleaning where wetwashing is not possible or gloss enhancement is desired. Contains non-abrasive media to remove even stubborn soiling. Cleans dirt, carbon and oil and leaves a protective barrier against UV deterioration of paint. Can also be used to clean bare metal surfaces. Apply with mop, spun cotton pad, towel or by hand. Agitate uniformly over area to be cleaned, spreading material to a very thin layer. Let dry completely and buff off by hand with clean terry towel. Supplied ready-to-use.

Qt. P/N 09-00581
Gal. P/N 09-00580



NUSHINE II POLISH/ SYSTEM

Nuvite engineers have formulated a system of polishes to meet the needs for almost any metal and paint polishing project. New metal to antique, the formulations in the NuShine II Polishing System will give superior definition, highlights, imagery, clarity, and will retain the finish longer than normal polishes. Nuvite's

NuShine II graded polishes use high technology materials with programmed abrasive characteristics and are blended with superior carriers to offer the ability to produce cutting action when needed, yet offer micron-level finishing in the finer grades that produces highest reflectance and image excellence.

Grade S (for final finishes) - The finishing grade that gives the really deep, clear image when used as a final finish over a properly prepared, oxidation-free surface. 0.5 Lb. jar P/N 09-00578



Grade G6 (SS & titanium or heavily oxidized aluminum) - When a heavy cut of the surface is needed, G6 may be a good answer. G6 has a high-tech abrasive system that is designed to do a quick, aggressive cut, and immediately break down to a finer cut, similar to Grade C. Use when there is heavy oxidation on the surface of aluminum, or even when very light corrosion is evident. Can also be used to blend surface scratches in aluminum. Can also be used for polishing stainless steel. 0.5 Lb. jar P/N 09-00586



Grade C (for unpolished aluminum and repolishing degraded brightwork) - C is a cutting grade polish that we recommend to prep for using Grade S. Use Grade C to begin polishing on clad aluminum that has never been polished. Will also remove the cloudy/hazy white background found in many otherwise good polish finishes. 0.5 Lb. jar P/N 09-00587



NUSHINE II POLISH SYSTEMS

Polishes for both metal and paint finishing that will provide the finest surface finish available. Has been shown to outperform all other aviation, automotive and marine polishes in side-by-side testing by users throughout the world. Affords the operator the choice to select the grade of polish to match the needs of the surface to be polished, be it brand new, oxidized in use, or with atmospheric corrosion. NuShine II not only polishes paints and metals to an incredibly deep, clear and image-reflecting surface, but also imparts a protective chemical barrier to inhibit corrosive oxidation to the metal.

Grade F9 1/2 lb. P/N 09-02086
Grade F7 1/2 lb. P/N 09-02087
Grade A 1/2 lb. P/N 09-02088

CS

POLISHES – CLEANERS

AERO GLOSS



Aero Gloss polish is used by 80% of the world's major airlines. It is now available to the general aviation and experimental aircraft market. Removes turbine soot and exhaust stains from paints. It is an excellent plexiglass polish and can be applied with a power buffer. It takes 1-2 pints and 3-4 hours to polish an average Cessna 182 with Aero Gloss.

Pint P/N 09-38100
 Gallon P/N 09-38101
 5 Gallon P/N 09-02180

STAR BRITE AIRCRAFT POLISH

This exceptional new polish cleans off dirt, stains and oxidation and restores the original bright color of the aircraft leaving a dazzling shine. StarBrite also cuts fuel consumption and boosts speed by reducing drag an amazing 5.5%. Contains no wax, oils or acids. 16 fl.oz. P/N 09-23900



TOP GUN ULTRA FINISH

Top Gun Ultra Finish is the ideal one-step product for all aircraft finishes. The product removes surface contaminants and oxidation through a unique chemical process, rather than using harsh abrasives. The coating left behind is not a wax, but an extremely hard and durable sealant. This affords superior long term protection (up to 12 months or longer), and easier cleaning of your finish. Once applied, bugs and corrosive elements remove more easily. Use Top Gun Ultra Finish to add brilliance to your aluminum and magnesium alloys. It is also very effective in restoring clarity to plexiglass windshields, side windows, and lenses. 16 fl. oz. Made in the U.S.A. 16 oz. P/N 09-00192



RACERS EDGE POLISH

Specifically formulated to provide drag reduction, use of this revolutionary formula results in increased air speed, protection, and the richest, deepest shine. Flight tested by the U.S. Air Force and engineering certified for all Boeing, Douglas and Airbus aircrafts. Blend of highly protective properties provide maximum protection for all elements of nature & engine exhaust. Apply by hand or machine. P/N 09-00157



SEAL-A-PLANE

Seal-A-Plane provide an unbelievable shine that seals and protects the finish; we have also found that the exhaust and bugs don't like to stick to the surface and can be removed with just a damp cloth. Unlike products that were designed for the automobile industry, Seal-A-Plane is for aircraft and protects the aircraft surfaces from harmful UV rays and corrosion. Common waxes breakdown in the sun. Seal-A-Plane actually gets harder in the sun and is stable up to 500 degrees F. Seal-A-Plane contains no silicones and is non corrosive. It normally only requires application once a year (depending on the planes operating environment) and can be used on any surface including fiberglass and Plexiglas. Never before has there been a product on the market like Seal-A-Plane. Turbine owners especially will appreciate a product that is available that will remove the ugly exhaust stains. One 16 ounce bottle will be enough for most single engine planes and two will do most light twins. P/N 09-01650



MASTER FORMULA - SEALER GLOSS

Master Formula Sealer Gloss Protective Sealer waterproofs, protects and seals any hard surface. It leaves a durable, glossy protective coating that's easily maintained and lasts up to one full year. Master Formula Sealer Gloss is excellent for use on any metal or painted surface. These surfaces include all car finishes including clear coats, gel coats, plastics fiber glass. They also include all metal surfaces such as aluminum, chrome, brass, stainless steel, gold, silver and more. 16oz.

12OZ P/N 09-02077
 16OZ P/N 09-01609



MET-ALL

An aluminum polish which removes and prevents pitting. Makes aluminum shine with mirror-like brilliance. Non-toxic, non-abrasive and non-flammable. A non-silicone product which resists further corrosion. Meets military specifications. 1 Lb. Can P/N 09-24200
 2 Lb. Can P/N 09-24300



BUG BLASTER SPRAY

Dissolves and removes bugs without scrubbing - no elbow grease is required! This is a quick, time saving product. Just spray, wait and wipe. Finally a product that solves messy problems without being messy!! Unlike other formulations, when sprayed, Bug Blaster instantly attacks bug proteins and acids. You will not have the dripping, messy run-off you have with conventional bug removers. Perfect for use in paint shop environments where run-offs need to be avoided.

32 OZ P/N 09-02080
 1 GALLON P/N 09-02081



MET-ALL DETAIL POLISHING KIT

Met-All's Detail Polishing Kit will produce a show room finish on bare metal, painted surfaces and fiberglass using Met-All polishes and premium bonnets. Each bonnet features a recessed loop back so the edge and face can be effectively used with less concern for marring the finish. Change pads quickly and easily. Ideal for polishing aircraft, cars, motorcycles, boats etc.

P/N 09-00448

BLUE MAGIC METAL POLISH

Blue Magic produces a deep mirror shine. The oxide residue left after polishing is easily wiped off with a rag. A small amount will polish a large area. Airshow aerobatic pilot Chuck Lischer, Jr., whose high performance Swift is shown here, recommends Blue Magic as the best polish available for polished aluminum aircraft.



#500 1 lb. Can P/N 09-24600

210® PLASTIC CLEANER/POLISH

•Anti-static, Anti-fog • Will remove marks from crayons, magic markers and paint oversprays • Removes residue glue from protective backings and masking tape • Evaporating properties in the formula - cleaning is quick and easy without leaving any streaks or swirl marks • Resists fingerprints • Seals pores in plastic and leaves a protective coating • Pleasant clean aroma • Gives plastic a clear, lustrous look.

7 oz. P/N 09-00518
 14 oz. P/N 09-00517



210® PLUS PLASTIC SCRATCH REMOVER

•Extremely mild abrasive compound, with anti-static and anti-fog properties in its formula • Ideal for the removal of surface scratches and blemishes from windshields or heavy cleaning of all plastic materials • Water soluble, excess can be wiped off with a wet sponge or cloth • Easy to use.

15 oz. P/N 09-00519



210® WINDSHIELD CARE KIT

Recommended by LP Aero Plastics and other leading aircraft windshield manufacturers, our 210® Plastic Cleaner & 210® Plus will help keep your windshield crystal clear and scratch free for safe, enjoyable flying. Our Windshield Care Kit Contains: (1) 7 oz. 210® Anti Static/Anti-Fog cleaner & polish, (1) 7.5 oz. 210® Plus Anti-Static plastic scratch remover, (100) 9"x 16" Sontara Aircraft Wipes. P/N 09-00521



CLEARVIEW PLASTIC CLEANER/POLISH

Bring new life to your plastics with Clearview. Developed to clean, polish and protect all types of clear and colored plastics. Helps hide small scratches by filling them with a fine protective coating. Wipes on & off easily with no smudges or residue. Anti-static. Spray can. 16 oz. P/N 09-00531



RAIN AWAY

A protective treatment which leaves a clear, smooth, non-stick surface. Visibility is improved by repelling rain, bugs, frost and road film. Raindrops bead up and are blown away while flying. P/N 09-01279

GRANITIZE METAL POLISH SYSTEM

Simple but effective system of six polishes designed to polish painted surfaces, aluminum 22916T6 & 2024T6 both clad and bare, and other metals including steel and titanium. All polishes are color coded to reduce cross contamination and aid in taking the guesswork out of any polishing procedure. When used properly, The Granitize System will produce a smooth, highly reflective mirror-like surface on brightwork that can be treated with Xzilon molecular adhesion to maintain the finish.

FINISH



XMP-S METAL POLISH (SUPERFINE) - Final polish for a mirror like finish. Can also be used on painted surface. P/N 09-02181



XMP-M METAL POLISH (MEDIUM) - For Light oxidation/scratches, Rain Spotting. Can also be used on painted surfaces. P/N 09-02184



CUTTING

XMP-C METAL POLISH (COARSE) - For Medium oxidation/scratches. P/N 09-02233

CS

POLISHES – CLEANERS

ROLITE METAL AND FIBERGLASS POLISH



Rolite Metal and Fiberglass Polish will restore the original brilliance of virtually any metal surface, as well as being ideal for fiberglass and plexiglass parts. Rolite products are preferred by many EAA members maintaining bare aluminum aircraft as well as by commercial airlines and prop shops worldwide. Will create a mirror-like shine like you have never seen. Recommended for maintaining brilliant propellers and spinners.

10 Oz. Can.....P/N 09-42555.....
2 Lb. Can.....P/N 09-42560.....

ROLITE AP-300 ALUMINUM POLISH



A super-fine, high quality aircraft cleaner/polish that improves the appearance of alcad aluminum. It removes light to medium oxidation, soil, and jet blast residue with ease. Finished gloss and reflection of aluminum: extremely high.

1 Lb. Jar.....P/N 09-00183.....

ROLITE SUPRA 90 ALUMINUM POLISH



Researched and developed for the commercial aircraft industry. This precision aluminum polish is widely used by many domestic airlines. Manufactured to meet all Boeing and McDonnell Douglas Specifications (Boeing D6-17486; CSD-1, Type 1 & V). Supra 90 will give you a mirror-like shine on your aluminum (or any other metal) surface that was never before believed possible!

2 Lb. Can.....P/N 09-42420.....

MAAS ALUMINUM & FIBERGLASS POLISH



Maas polish removes fine scratches, prevents clouding on plexiglass windshields and windows, reduces air resistance, and repels moisture. It is used by major air carriers and has provided them with a 10% savings on fuel due to Maas' ability to substantially reduce parasitic drag and friction on the leading edges of the aircraft.

Excellent for use on anodized or bare aluminum, painted surfaces, plastics, plexiglass, and fiberglass. 1 lb. can P/N 09-23545

ROLITE PREMIUM VINYL & LEATHER PROTECTANT



"The Sun Protector". Protect your aircraft interior by using Rolites' maximum sun block formula. Contains no solvents, silicone oils, or petroleum distillates. Its anti-static formula will produce a shine on your vinyl or leather seats without being slippery or tacky. And will actually repel dust! Comes in spray pump bottle.

8 oz. Bottle.....P/N 09-42435.....

VOODOO WAX™ RACING FORMULA



Developer for high speed aircraft applications. Voodoo Wax™ is the wax of choice for Team Voodoo's P-51 Mustang Unlimited Air Racer. The Voodoo Wax™ formula is ideal for application on aircraft, boats, automobiles and motorcycles.

Voodoo Wax™ Cleaner Polish contains the finest blends of ultra fine polishing agents, polymers and imported waxes.

Voodoo Wax™ Cleaner Polish rapidly cleans and removes fine and medium scratches, oxidation, water spots and environmental contaminants leaving a deep, rich luster and durable finish. Safe for clear coat and non-clear coat finishes, cleans and restores Lexan and Plexi-Glass.

Voodoo Wax™ Cleaner Polish is the ideal companion product to use prior to Voodoo Wax™ Racing Formula.

P/N 09-01594.....

VOODOO WAX™ CLEANER POLISH



Voodoo Wax Cleaner Polish contains the finest blends of ultra fine polishing agents, polymers and imported waxes.

Voodoo Wax Cleaner Polish rapidly cleans and removes fine and medium scratches, oxidation, water spots and environmental contaminated leaving a deep, rich luster and durable finish. Safe and clear coat and non-clear coat finishes. Cleans and restores Lexan and Plexiglass.

Voodoo Wax Cleaner Polish is the ideal companion product to use prior to Voodoo Wax Racing Formula.

P/N 09-01593.....

ACTION CHIPKIT FIXES PAINT CHIPS AND SCRATCHES



The Action Chipkit stops rust around paint chips and scratches and produces repairs which are flush with the rest of the paint. The kit includes the Eliminator rust remover which is used to prepare the surface, and then the kit's clear paint sealer is applied. The kit's microfine sanding papers and sanding block are used to create a smooth and flush finish. Extrafine polishing compound completes the job by removing irregularities and restoring gloss. Everything you need for small paint chip repairs is included in the easy-to-use Action ChipKit.

P/N 09-27225

ICE AWAY PROP ICE GRIP INHIBITOR



Sooner or later, most pilots get into icing conditions and an ice-free propeller may be the ticket to safety. Years of testing have shown Ice-Away to stay on for several hours in icing conditions. Ice-Away facilitates propeller ice shedding and enhances safety. Simply spray Ice-Away on the propeller leading edges and reapply as necessary.

5.25 oz. spray canP/N 09-00264

Less 10% on 6 cans or more

PLAS-TEC PLEXIGLASS/PLASTIC CLEANER & POLISH



Plas-Tec cleans, shines, and protects today's high-tech plastics. Plas-Tec is a non-aggressive, optically clear cleaner that lifts fingerprints and smudges, leaving a protective, anti-static coating that resists dirt build-up. Plas-Tec is excellent for use on acrylic, Lexan, or Plexiglass windshields and windows as well as aircraft instrument panels, and many other applications.

4 oz. Can.....P/N 09-00308

16 oz. Can.....P/N 09-00309

1Gal. Can.....P/N 09-00310

REJEX SOIL BARRIER & STAIN PROTECTOR



RejeX™ is an advanced polymer system that seals painted surfaces to guard against corrosive exhaust gas, oil, and bug stains. It forms a slick, long-lasting, glass-like barrier that allows easy removal of turbine and piston-engine exhaust stains with mild detergents. Bugs can be removed quickly and easily with just a stream of plain water. On paint in good condition, RejeX eliminates the need for waxes and polishes, and one application will last a minimum of 4 months. Surfaces to be protected should be clean, dry, and cool to the touch and the product should not be applied in direct sunlight. Damaging contaminants, such as bug acids and exhaust stains will no longer be a problem.

12oz. Can.....P/N 09-01729

16 oz. Can.....P/N 09-00303

BRILLIANIZE



Brillianize makes shiny surfaces brilliant. The cleaned surface resists finger marking, has anti-static properties, repels dust. It is a nonflammable and nontoxic liquid. Use it to clean Plexiglas, Lexan, mirrors, chrome - any shiny surface. Apply and polish with Kleenmaster shop towels.

8 oz. spray bottle.....P/N 09-24000

#128P -1 gal. plastic bottle.....P/N 09-24100

SPEED CLEAN™ -PLASTIC CLEANER/ PROTECTOR



Just spray it on, let it work, and gently wipe off with a soft cloth. The surface is clean, protected and will be even easier to clean the next time! Now you can safely Clean and protect just about anything in your life that gets messy. Plastic surfaces, are found everywhere. Aircraft, autos, watercraft, kitchens, motorcycles, watches, and the list goes on. Once you clean the surface, Speed Clean™ leaves an invisible velvety smooth surface that helps dust and dirt from sticking to it. Cleaned surfaces will be static & dust free for weeks, and everything will be even easier to clean the next time.

P/N 09-01962

THAT BUG STUFF BUG REMOVER



That But Stuff is a very effective bug remover, specially formulated to remove bugs from the front surfaces of airplanes. Developed by pilots for pilots, That Bug Stuff is ready to use. Spray on the area to be cleaned, and in seconds, bugs can be wiped off with a soft cotton cloth. Will not remove wax and will not remove bugs that have been covered by wax.

32 oz. spray bottle.....P/N 09-00523

BUG-OFF



BUG & EXHAUST REMOVER - Bug Off is a presoak bug and exhaust remover designed to remove organic matter, bug juice, and engine exhaust soot from surfaces of aircraft, automobiles, and trucks. Bug Off dissolves most dried up bug matter and exhaust soot in seconds. It eliminates scrubbing and does not affect painted surfaces.

1 Qt. (Spray Bottle).....P/N 09-35710

1 Gal. Refill.....P/N 09-35712

RAIN-X RAIN REPELLENT



Aircraft with bleed air rain removal systems, such as Cessna Citation and Learjet, need to have their windshields treated to help disipate the rain. Repcom rain repellent was the recommended product, but it is no longer available. Rain-X is manufactured by the same company and it is the same formulation.

While not FAA approved, it works well in dispersing water on the windshield. 7 oz. bottle.....P/N 09-42500

CS

PLEXIGLASS CLEANERS & POLISHES

NOVUS PLASTIC POLISH #1 CLEANS & PROTECTS



Novus Plastic Polish #1 gently cleans all plastics without scratching and leaves a lustrous shine that resists fogging, repels dust, and eliminates static. Leaves a shield that resists fingerprints and smudging, and is nontoxic and free of strong odors. Contains no abrasives or harsh chemicals.

8 oz. P/N 09-38110.....
64 oz. P/N 09-38115.....

NOVUS PLASTIC POLISH #2 RESTORES & REFINISHES



Novus Plastic Polish #2 removes fine scratches, haze, and abrasions from most plastics. With repeated use, it will restore faded and discolored plastics. Contains mild abrasives, but is non-toxic and has no strong odor.

Creates a deep shine which resists scratching, marking, and aging.....
8 oz. P/N 09-38120.....
64 oz. P/N 09-38125.....

NOVUS PLASTIC POLISH #3



Novus No. 3 removes heavy scratches and abrasions from most acrylic surfaces. This is an aggressive polish and is not intended for use on coated plastics or polycarbonates. Requires both Novus No. 1 and No. 2 polishes for final finishing.

8 oz. P/N 09-38130.....

SUPERCOAT LEATHER, PLASTIC & RUBBER TREATMENT



No need to wash or prepare. Cleans, conditions and restores. Protects & beautifies. Removes dirt and stains. Excellent on tires. Protects against stains, soils, oils, salt and dirt. Unaffected by temperature, weather or sunlight. Prevents cracking and deterioration.

8 oz. P/N 09-42520.....

MICRO-POXY AIRCRAFT CLEARCOAT



Micro-Poxy is a hand applied micro film epoxy coating for use as a sealer, anti-corrosion, anti-salt, and UV barrier for aircraft. It is non-porous and high gloss, making it excellent for reducing parasite drag, contaminant adhesion, icing, & chemical attack. It inhibits surface deterioration, corrosion, and oxidation on urethane, lacquer, epoxy, acrylic, and enamel painted surfaces. Also excellent for protecting and restoring aircraft metals and alloys.

8 oz. Jar . P/N 09-15560.....

SCRATCH OFF WINDSHIELD REPAIR KIT



Now you can polish away scratches and swirl marks on your Plexiglass windshield. SCRATCH OFF is a revolutionary new product designed to remove imperfections from Plexiglass surfaces. SCRATCH OFF can also be used on painted surfaces, fiberglass, Plexiglass and virtually any plastic surface. The standard kit treats one aircraft windshield, and the deluxe FBO size kit services several aircraft.

Standard Kit P/N 09-42600
Deluxe Kit P/N 09-00252

POLY-SAND SCRATCH REMOVER



This is the original Poly-Sand process. Consists of a series of cloth-backed cushioned abrasives which when used in proper sequence will restore the finish of plastics. Also used for fine finishing of wood and precious metals. Recommended by Rohm & Haas Co., manufacturers of Plexiglas. Kit includes series of Poly-Sand cushioned abrasive cloth tapes, all required accessories and instructions.

PCA Kit #40 P/N 09-24800

HI-TECH SANDING BACKING PAD (E-7200)



Makes repair work easy by distributing even hand pressure across the face of the paper. It's flexible and easy to use on curved or flat surfaces.

P/N 09-23380ea

UNIGRIT™ SANDING PRODUCTS



Unigrit™ Finishing Papers & Sanding Blocks use precise, uniform grit particles to eliminate deep sanding scratches and the need for compounds. More economical to use because they work faster, last longer and won't load up as quickly as conventional sanding products.

| FINISHING PAPERS | | | | SANDING BLOCKS | | | |
|------------------|-----------------|----------|------------|----------------|-----------------|----------|------------|
| Grit | Sheet Size (in) | Part No. | Price Each | Grit | Block Size (mm) | Part No. | Price Each |
| 1000 | 5.5x9 | 09-23580 | - | 1000 | 60x30x20 | 09-23640 | - |
| 1200 | 5.5x9 | 09-23590 | - | 1500 | 60x30x20 | 09-23650 | - |
| 1500 | 5.5x9 | 09-23610 | - | 2000 | 60x30x20 | 09-23660 | - |
| 2000 | 5.5x9 | 09-23620 | - | | | | |

PLEXUS AIRCRAFT PLASTIC CLEANER, PROTECTANT & POLISH



Plexus™ was developed for use in aviation, specifically for cleaning and protecting aircraft windshields and painted surfaces. It's quite simply the most effective product you can buy for cleaning, polishing and protecting all clear and colored plastics and painted surfaces. Plexus is easier to use, and leaves a noticeably cleaner, more lustrous finish than conventional polishes. It protects by actually sealing the pores in plastic making it more resistant to debris, oil, bugs or scratches. Because it's anti-static, it repels dust and lint. It's perfect for windshields and the leading edges of the wings, as well as for removing exhaust stains and cleaning wheel wells. Also, Plexus polishes without harmful abrasives. It leaves an invisible, micro-thin layer of wax without smears or smudges. It dries to a crystal clear luster, leaving no oily, sticky or tacky residue. It's the ultimate detailer for your aircraft. So, if you're looking for a better way to save time, money and help protect your valuable investment, it's clearly brilliant. Plexus. Clearly the best. Plexus contains no CFC's, so it's safe for the environment. And because it's an aerosol, there is virtually no waste.

7 Oz. Can P/N 09-29715.....ea
13 Oz. Can P/N 09-29710.....ea

PERMATEX PLASTIC CLEANER



Removes grease, stains and insects. Retards fogging. Rain repellent, anti-static. Cleans Plexiglas, fiberglass, stainless steel and painted surfaces without scratching.

#403D Pint Can P/N 09-00344

LP AERO'S ACRYLIC POLISH SEALANT FOR AIRCRAFT WINDSHIELDS



A superior no-wax, non-yellowing formula containing polyethylene polymers. This product not only gives a super slick surface to your windshield and windows, but can also be used on your entire aircraft, including all the painted gloss surfaces, aluminum & fiberglass. Ease of application and removal is unmatched. Sold in 16 oz. bottles. P/N 09-42055

SPRAYWAY #848 PLASTIC CLEANER



Sprayway plastic cleaner contains no chemicals or abrasives that will cause damage to transparent surfaces. This formula is anti-static, anti-fog, fast-drying, non-streaking, and it reduces glare. It also repels finger smudges, dirt, and dust. Great for use on acrylics, plexiglass, lexan, glass, and polycarbonates. No. 848 meets the following military and commercial specifications: • MIL P5425 • MIL P25690A • Douglas Aircraft CSD-1 • ANSI/ASTM F484-77 • Boeing Letter-Lexan 9600. Product is free of ozone-depleting chlorofluorocarbons (CFC's)

P/N 09-42060

PLEXI-CLEAR PLEXIGLASS CLEANER



Plexi-Clear is an anti-static aircraft plexiglass cleaner, protectant, and polish. Plexi-Clear produces a microscopic, high luster, soil retarding and water repellent finish to all aircraft plexiglass and plastic and makes small scratches less visible, leaving a surface that is fresh, lustrous, and protected. Plexi-Clear dries perfectly with no smears, no scratches, no smudges, no oily, tacky or sticky residue. Plexi-Clear can be applied in seconds, in one easy step. Boeing and MIL spec Approved.

P/N 09-37960ea

SPEEDCOAT



"How much faster? In just a matter of minutes you can treat your entire airplane. You can coat paint, bare metal, composite and fabric surfaces. Windshields, glareshields and even your interior. Just a simple spray, wipe, hand buff and you are done. Your baby will not only shine but you will have added great UV protection as well as environmental protection. Dust, dirt, soot, bird droppings are easy to clean on a SpeedCoat protected airplane" - David LoPresti Features * 16 oz Bottle * One bottle is more than enough to treat an average sized aircraft. * Long shelf life. * Environmentally friendly. * Silicone Free. * No residue buildup. * Hand only applications. * No mechanical buffing required.

P/N 09-02107

WINBRIGHT PLASTIC CLEANER



WinBRIGHT is safe to use on any polycarbonate, acrylic, or plexiglass window. Developed for aircraft transparencies, but perfect for any plastic surface: AIRCRAFT, MOTORCYCLE WINDSCREENS, BOATS, AQUARIUMS, CONVERTIBLE WINDOWS, INSTRUMENT PANELS, BIMINI TOPS, SAFETY GLASSES, RVs, CDs This professional strength spray with Micro-Brighteners leaves surfaces sparkling clear and clean. Removes, dust, dirt, stains, smudges and finger prints. Optical clarity improves with extended use. Clean surface with water first, then simply spray WinBRITE onto a dampened flannel cloth and polish into the surface of the window until polish disappears. Contains no wax, solvents or ammonia and leaves no residue or build-up.

4OZ Spray P/N 09-02078.....
8OZ Spray P/N 09-02079.....

CS

POLISHES – CLEANERS

MICRO-MESH LEADING EDGE POLISHING KIT



This kit will restore up to 100 sq. feet of unpainted aluminum surface. Perfect for leading edges, vertical and horizontal stabilizers, engine nose cowl and thrust reversers, removes oxidation, corrosion, orange peel, and surface scratches. Provides a uniform high-luster gloss.

Specifications:

- *1 - instructions
- *2 - 5" loop discs, Micro-Mesh 1500 AO..
- *2 - 5" loop discs, Micro-Mesh 1800 AO
- *2 - 5" loop discs, Micro-Mesh 2400 AO..
- *2 - 5" loop discs, Micro-Mesh 3200 AO
- *1 - 16 oz. bottle aluminum cutting fluid...
- *1 - 1/4 lb. container aluminum polish
- *2 - flannel cloths
- *1 - 5" x 3/4" nap TUFFBUF lambswool polishing pad
- *1 - 5" white, loop back foam pad
- *1 - 5" soft interface pad with hook.
- *1 - 5" soft interface pad with hook
- P/N 09-00785.....

WASH WAX ALL(REGULAR)



Wash Wax ALL is a water based cleaner/wax. Simply spray on and wipe dry, leaves an anti-static, non-stick protective coating on all surfaces such as paint, glass, plastic, leather, vinyl, rubber, wood, gel coat, aluminum, marble, granite and other hard surfaces. Also works great indoors on appliances, counter tops, cabinets, furniture, sinks, bath, shower, shop, lawn and garden equipment and furniture. Non-Corrosive • Alcohol & Ammonia Free. Just Spray on and Wipe Dry!

- Quart.....P/N 09-00493
- GAL.....P/N 09-00494

WASH WAX ALL (DEGREASER)



Wash Wax ALL (Degreaser) Is a water based degreaser/wax. For those tough, greasy, oily, and grimy cleaning jobs such as aircraft engine areas and bellies, car wheels and tires, boat transom, water line and engine areas. Simply spray on and wipe dry, leaves an anti-static, non-stick protective coating on all surfaces such as paint, glass, plastic, leather, vinyl, rubber, wood, gel coat, aluminum, and other hard surfaces. Note: the use of SafeSolv may be needed in extremely oily and greasy cleaning situations. Non-corrosive • alcohol & ammonia free

- Quart..... P/N 09-00495
- GAL..... P/N 09-00496

AERO SCRUBBER KIT



Soft, non-scratching, long-lasting, reusable scrubber pad. Use with Wash Wax ALL on tough cleaning jobs such as aircraft bellies, engine areas, leading edges, wheels and tires. Great for fast bug removal from painted surfaces. Each Kit includes 4 pads w/ 1 holder.

- Kit.....P/N 09-01616
- Package of 5 Pads...P/N 09-00509

AERO TOWELS



All purpose synthetic towel. Super soft, absorbent, long-lasting and lint-free. The best towel for all of your cleaning needs. 3 washable 16"x16" Aero Towels per package.

- Quart P/N 09-00510.....

LEATHER CARE



Leather Care Provides the longest lasting barrier against drying & cracking from damaging ultra-violet rays. Restores & protects dull, faded, hardened leather and vinyl like new. Repels dust & dirt without leaving oily residue. 1 Qt.

- P/N 09-00503

RUBBER CARE



Rubber Care is easy to use water-based rubber and de-ice boot care product. Restores & protects rubber, giving that new semi-gloss look without leaving oily residue. Excellent on weather stripping, tires or any rubber item. Quart

- P/N 09-00505.....

CP/S CLEANER-POLISH/SEAL-COAT



CP/S removes oxidation and dirt out of the paint layer and restores the original brilliance, color and gloss. Hard rubbing is not required. CP/S is designed for a light pressure manual application. CP/S can be applied in direct sun or on a hot surface, however, expect best performance when the surface is not hot to the touch. Proper application will provide the best results and will maximize the resin seal-coat for future protection.

- P/N 09-00784

KPC PRODUCTS, CLEANERS AND PRESERVATIVES

WINDSHIELD SPEED CLEANER & POLISH



KPC Windshield Shield Speed Cleaner & Polish for Transparent Plastic Aircraft Materials. Meets U.S.A. Military Requirements MIL-C-18767A (ASG). This product is non-static, non-glaring, and abrasive free, will help prevent hazing and discoloration of clear plastic materials. Can be used in arid, humid, rain or sunny conditions. Recommended for: plastic windows, windshields, windscreens, and instrument faces, AS-2 safety glass, plexiglas, lexan and mylar, formica and other structural plastics. Safe, quick, easy to use.

- 12 oz.....P/N 09-00544
- 1 gal.....P/N 09-00545

KPC VINYL COATED CLEANER AND PRESERVATIVE



KPC Vinyl Cleaner and Preservative is a neutral biodegradable spray on - wipe off chemical. The finest chemical available for cleaning and preserving your breathable or solid vinyl, deep grained vinyls, pearlized vinyl, hercolyn, leatherette, nautahyde, or any synthetic fabric. No abrasives, residue, coating, or discoloration. KPC Vinyl Cleaner will not damage cloth, rugs, chrome, painted walls or any of the threads or seals that hold the vinyls together, or any backing of breathable vinyl as used on some of the imported cars. Leaves article soft and pliable.

- 12 oz.....P/N 09-00542
- 1 Qt.....P/N 09-00543

KPC ALL PURPOSE LIQUID HAND CLEANER



KPC All Purpose Liquid Hand Cleaner with lanolin and antiseptic leaves hands soft and smooth. For people who want their hands cleaned gently but thoroughly. Product is soluble and free from grit or harsh abrasives. Use with or without water. After application, rinse hands or dry with cloth. Recommended for mechanics, plumbers, painters, printers, roofers and any job where grease, oils, paint, sap, tar or grime is present. Also an excellent all purpose hand cleaner for home, office and shop. All Purpose Hand Cleaner is non-caustic and biodegradable.

- 8 oz.P/N 09-00546

KPC RUBBER CLEANER AND PRESERVATIVE



KPC Rubber Cleaner and Preservative restores new look to your rubber accessories. All rubber parts will look like new (no painted or artificial look). Cleans and preserves all rubber molding of aircraft, auto, commercial, etc. Cleans and restores floor mats whether clear, red, brown, etc. to their original color. Not harmful to paint, glass, chrome, rugs, aluminum, etc., and will not change the original color of any rubber material.

- 16 oz.P/N 09-00548

KPC LEATHER CLEANER & PRESERVATIVE



KPC Leather Cleaner and Preservative cleans genuine leather with a saddle soap base -preserves leather with pure neatsfoot oil. A one step leather care for all leather goods. Wipe on -wipe off. No oily residue is left on your leather. Kleenmaster uses only natural animal oils which penetrate into the leather. It preserves the finish even if leather becomes hot. Product is nonflammable, free of offensive odor, and will not irritate skin. Helps prevent mildew.

- 4 oz.P/N 09-00550
- 8 oz.P/N 09-00551

KPC AIRCRAFT SHAMPOO CONCENTRATE



KPC Shampoo Concentrate for cleaning auto, aircraft and boat surfaces of fiberglass, aluminum, chrome or painted surfaces. Use in sun or shade, just shampoo and rinse. Will not remove wax when applied to a cool surface. 1 oz. of concentrate makes four gallons shampoo. Will not harm paint, glass, plastic, rubber, chrome or vinyl. Leaves a highly polished appearance. Helps protect surface from deterioration.

- 1 gal.....P/N 09-00553.....

CS

POLISHES & CLEANERS

ALL KLEER



Black Labs Corporation is proud to introduce, All Klear, the ultimate plastic windshield cleaner and polish. All Klear was invented by a pilot over 25 years ago for cleaning and maintaining plastic aircraft windshields that require absolute clarity.

All Klear is different than most windshield products on the market as it not only cleans dirt, bugs and grease but leaves a very fine, slick finish. This finish helps to repel water, dust, bugs, and water spotting - making it easier to see and to clean the next time. All Klear contains no wax, ammonia, or abrasives and does not require the use of any water. A non-pressurized leak proof 8oz bottle is designed to be carried on board if desired.

Simply apply All Klear with a clean towel to a dry windshield cleaning off any bugs and dirt and allow 30-60 seconds for a haze to form. After it has completely dried, wipe off with a clean towel and feel the All Klear finish.
P/N 09-01602

PRIST® ACRYLIC, PLASTIC AND GLASS CLEANER: FOR ALL TYPE OF WINDOWS



The convenient 13-ounce can is ideal for use on acrylic, stretched acrylic, poly carbonate, glass, and coated glass. It may also be used for cleaning many other sources including aircraft interiors, goggles, helmets, lenses, and plastic and metal surfaces. Prist® cleaner contains no abrasive cleaning agents and cleans without scratching glass or plastic surfaces. This prevents scratches in acrylic windshields that necessitate costly replacement. Unlike other cleaners, Prist® cleaner dispenses as foam and leaves no residue. The cleaning agent soaks into the dirt, grease and insects to remove them with minimum effort. Suitable for interior and exterior cleaning, Prist® cleaner prevents static charge build-up with regular use.

13oz. Can P/N 09-02049

Case (12 Cans) P/N 09-02049-1

PILOT'S VIEW POLISH & CLEANER



Ideal for GPS, Avionics, Plexiglas Windows and much more! This Product Will Not Scratch Anything!

Safe on: Eyeglass/Sunglass lenses, Anti-reflective, protective-coated and shaded lenses, sun visors and plexi windshields.

1 oz. Spray 09-01583

27 oz. Sprayer 09-01584

Kit (27 oz. Sprayer / 1 oz. Spray) 09-01585

GLARE PROFESSIONAL POLISH



A non-stick high-gloss all-weather sealant. The finest polish for your car, airplane, boat, motorcycle, glass, stainless steel, fiberglass, chrome, Carbon Graphite, and RV in the world's market. Filters out UV Rays, turns to glass on and within your paint. Contains Glassplexin®. Bonds molecularly to your paint. The most revolutionary polish ever developed. Beyond 22nd century technology. Lasts up to five years.

12oz. P/N 09-01055

GLARE SPIDER

"Another innovation of Ultra 2000 MFG Int'l, Inc. Beyond 22nd century technology."

GLARE Spider is the most advanced swirl, spider web, and scratch removal product in the market. Ultra high purity metal interlinked fusion of glass particles to Glassplexin forming a unique highly advanced swirl mark remover polish. GLARE Spider fills in permanently, it is NOT a temporary solution - not found anywhere. 12oz. P/N 09-01061



GLARE RAPID ACTION SPRAY



Ultimate protection for Cars, Planes, Boats, Motorcycles, Fiberglass, Plastic, Stainless Steel, Chrome, Carbon Graphite & Polished Aluminum. Now in a convenient and easy to use spray formula. Contains Glassplexin and lasts up to six months. Bonds molecularly to your paint. The most exciting polish ever developed. Beyond 22nd century technology.
P/N 09-01057

GLARE ULTRA WASH

"Cleans your vehicle, keeps your shine."

The most advanced wash ever developed. A PH balanced concentrated wash. Safe for all paints and finishes including the new clear-coated paints. New technology that leaves your vehicle clean and glossy like no other vehicle wash can. Contains Glasplexin®.

12oz. P/N 09-01062



GLARE VINYL · LEATHER ALL WEATHER PROTECTANT



A special blend of natural ingredients and a chemical formulation called SUPPLEXIN which is designed to beautify, soften, deodorize, preserve, and protect against damaging agents found in the everyday usage of your vehicle's interior. This product cleans, conditions, preserves, and protects in one easy step. Contains no harmful silicones, or adverse active ingredients. Blocks harmful UV rays.

12oz. P/N 09-01056

GLARE LIQUI-CLAY "The Clay Bar in a Bottle."



Smooths and removes stubborn blemishes before polishing! Won't rescratch your paint like a regular Clay Bar. Fast and very easy to use. The MOST advanced claying system for your vehicle's finish ever developed!

- Restores Color • Picks up Debris. Fallout, Insects, & Dirt Particles like a Magnet!
- Smooths paint like glass
- Preps paint before polishing

12oz. P/N 09-01059

GLARE TIRE MAGIC "The ultimate all in one tire appearance protection product!"

Glare Tire Magic will filter out harmful Ultra Violet Rays from the sun. Extreme temperature resistant formula for all climates. Stops tires from cracking and fading. Gives a beautiful rich natural high gloss finish. Splatter resistant formula. Easy to use - just spray and wipe!

16 oz. P/N 09-01058



GLARE KNOCK OUT!

"Restores all paints, removes & reverses oxidation, and fills in scratches." - Glassplexin actually fills in the surface scratches and reverses oxidation to bring the painted surfaces to a new level of beauty not available with any other compounds.

One step compound: NO WAX! NO SILICONE! NO POLYMER!

- Great for all clear coats • Easy to apply. Works quickly! Saves time!
- Removes swirl marks from all paint including clear coats • Preps paint with the most advanced ingredient - Glassplexin

12 oz. P/N 09-01064



GLARE TURBO ACTION WHEEL CLEANER

Glare Turbo Action Wheel Cleaner is the most powerful, effective, & fastest working wheel cleaner on the market. Safe for ALL types of wheels - Aluminum, Chrome, Magnesium - as well as clear coated & painted wheels. Makes your wheels look show room bright and shiny the easy and safe way. Removes and dissolves dirt, grime, brake dust, and grease. Spray on Glare Turbo Action Wheel Cleaner to dirty wheels & hose off with clean water to get your wheels looking like new again!

16oz. P/N 09-01063



GLARE (GALLON) PROFESSIONAL POLISH · MICRO-FINISH · ULTRA WASH



GLARE Professional Polish - A non-stick high-gloss all-weather sealant. The finest polish for your car, airplane, boat, motorcycle, glass, stainless steel, fiberglass, chrome, Carbon Graphite, & RV in the world's market. Filters out UV Rays, turns to glass on and within your paint. Contains Glassplexin®. Bonds molecularly to your paint. The most revolutionary polish ever developed. Beyond 22nd century technology.

ogy. Lasts up to 5 years.

GLARE Micro-Finish - *"We burn out the competition."* - A non-stick high-gloss all-weather sealant that lets paint breathe. Contains Glassplexin®. Ultimate scratch and oxidation removal for Cars, Planes, Boats, Motorcycles, Fiberglass, Plastic, Stainless Steel, Chrome & Polished aluminum. For use with GLARE Professional Polish.

GLARE Ultra Wash - *"Cleans your vehicle & keeps your shine"* - The most advanced wash ever developed. A PH balanced concentrated wash. Safe for all paints and finishes including the new clear-coated paints. New technology that leaves your vehicle clean and glossy like no other vehicle wash can. Contains Glasplexin®.

Glare Pro Polish - Gallon P/N 09-01066

Glare Micro Finish - Gallon P/N 09-01065

Glare Ultra Wash - Gallon P/N 09-01060

PLEXIGLASS RESTORATION - LEATHER CARE



MICRO-MESH WINDSHIELD SCRATCH REMOVAL KIT

Micro-Mesh is a cloth backed cushioned abrasive with a resilient layer of material between the back and the abrasive. When pressure is applied, the abrasive crystals recede into the resilient layer and find an even plane for cutting. The result is a smooth shaving action with an ultra fine scratch pattern which restores scratched, discolored, or damaged fiberglass or acrylics to like-new condition. Kit includes everything needed to repair approximately 30 sq. ft. Standard Kit (restores up to 30 sq. ft.)..... P/N 09-24700..... Large Kit (restores up to 60 sq. ft.)..... P/N 09-24701..... Professional Kit (restores up to 100 sq. ft.)..... P/N 09-24716.....



MICRO-GLOSS POLISH

Safe for use on bare acrylic, bare polycarbonate, and coated polycarbonate. Tests using Micro-Gloss were completed according to ASTM F791 standards and to USAF specification 16ZK002F (Addendum 2) at stress levels of 2000 and 3000 PSI in both dry and humid conditions. Approved for use on the inside and outside surfaces of F-16 aircraft. * Removes fine scratches. * Removes swirls created by improper cleaning methods. * Removes haze and milkiness from interior/exterior windows. * Provides a final polish, leaving you with an ultra-clear finish. * Can be applied by hand or machine * Approved for use by Boeing, Spec D6-52021 * Approved for military use, NSN #5350-01-334-89978 oz..... P/N 09-24710.....

MICRO-SURFACE WINDSHIELD RESTORATION KITS

Micro-Surface Finishing Products, Inc. FAA Repair station #KY2R969K, has been a leader in acrylic restoral for the past 30 years. The following kits were developed for use with standard power tools. Micro-Mesh is approved by Boeing/McDonnell Douglas, the Military and FAA. All kits come with easy to read instructions. Designed to save you both money and time, these kits will restore acrylic back to optical clarity using a minimum of steps. Re-order individual components as you need them. All kits restore up to 100 sq. ft.



MAINTENANCE KIT - Remove scratches, halos and haze. 5" White Foam Sponge Pad, 5" TufBuf, All Natural Lambswool Polishing Pad, 5" Back-up Pad, 8 Ounce Bottle Micro-Gloss, 8 Ounce Bottle Anti-Static Cream, 2 Cotton Flannel P/N 09-24715.....



LIGHT DAMAGE REMOVAL KIT - Remove minor scratches and scuff. 2-5" Loop Back Discs, Micro-Mesh 1500, 2-5" Loop Back Discs, Micro-Mesh 2400, 2-5" Loop Back Discs, Micro-Mesh 3600, 5" White Foam Sponge Pad, 5" TufBuf All Natural Lambswool Polishing Pad, 5" Back-up Pad, 8 Ounce Bottle Micro-Gloss, 8 Ounce Bottle Anti-Static Cream 2 Cotton Flannel P/N 09-24720.....



HEAVY DAMAGE REMOVAL KIT - Remove crazing, scratches, and gouges. 5-5" Loop Back Discs, Wet/Dry 120 Grit, 5-5" Loop Back Discs, Wet/Dry 220 Grit, 5-5" Loop Back Discs, Wet/Dry 400 Grit, 2-5" Loop Back Discs, Micro-Mesh 1500, 2-5" Loop Back Discs, Micro-Mesh 2400, 2-5" Loop Back Discs, Micro-Mesh 3600, 5" White Foam Sponge Pad, 5" TufBuf All Natural Lambswool Polishing Pad, 5" Back-up Pad, 8 Ounce Bottle Micro-Gloss, 8 Ounce Bottle Anti-Static Cream, 2 Cotton Flannel P/N 09-24725.....

MICRO-MESH POLYCARBONATE RESTORATION KIT



Excellent for restoring polycarbonate such as Lexan on aircraft, boats, cars, & motorcycles. Will restore up to 100 square feet material. Kit includes: • 5" disc w/loop 2400 MicroMesh • 5" disc w/loop 3600 MicroMesh • 5" random orbital or drill back-up pad • 5"x 3/4" TufBuf lambswool polishing pad • (2)11.5"x 12" flannel sheets • Instructions • 5" white sponge pad • 8 oz. Micro-Gloss #5 • 8 oz. Micro-Gloss • 8 oz. Final Finish P/N 09-00490.....

MICRO-MESH FINISHING KIT FOR WOOD



This kit is designed for craftsmen for use in hand finishing applications and without the mess of steel wool, rottenstone or pumice. MicroMesh may be used on bare or finished wood with wet or dry application method. A high reflective finish, satin or matte finish can be achieved, depending on how many MicroMesh steps are completed. This makes it an excellent product for spot matching of finishes. P/N 09-24705.....

PLEXIGLASS LENS REPAIR KIT



Protect your investment by restoring crazed, scratched, hazy lenses. Perfect for recognition light lenses, navigation light lenses, and landing light lenses. Lenses can be restored on the plane without removal. Soft Touch pads in this kit fit nicely in your hand and allow you to polish both concave and convex surfaces with ease. Dry pads, store and reuse again and again. P/N 09-01603.....

PERRONE LEATHER PRODUCTS

DEEP CLEANER FOR LEATHER



Perrone's Leather Cleaner / Conditioner is a premium blend of gentle cleansers and light conditioners formulated to clean and rejuvenate finished leather, vinyl and plastic surfaces. Perrone's Leather Cleaner/ Conditioner removes dirt, dust and oils without drying or damaging the surface.

Perrone's Leather Cleaner/ Conditioner helps protect leather from weathering and fading. Leaves leather surfaces soft, supple and smelling like new again. The wipes are treated with the same leather cleaner/ conditioner as in the spray bottle.

Perrone Leather Cleaning/ Conditioning products create an invisible barrier between leather seat covers and soils. This quick, convenient and cost effective method of reducing ink stains, dirt, grease, grime and body oils from penetrating leather surfaces will add to the longevity and appearance of your aviation leather interior without any adverse effects on flammability.

32 oz. w/Trigger Spray P/N 09-00557
1 Gallon Refill P/N 09-02062
Sontara Wipes (45 Wipes)..... P/N 09-00559

DEEP CLEANER FOR LEATHER



This unique formula is custom blended to clean and rejuvenate fine leather surfaces. Leather Cleaner with Conditioner features a unique protective barrier that, when used regularly, helps to prevent soiling from stains such as dirt, grease, ink, grime and body oils.

P/N 09-02120

LEATHER CONDITIONER



This unique formula is custom blended to clean and rejuvenate fine leather surfaces. Leather Cleaner with Conditioner features a unique protective barrier that, when used regularly, helps to prevent soiling from stains such as dirt, grease, ink, grime and body oils. 16 oz.

P/N 09-02121

INK REMOVER



Perrone Ink Remover will help to effectively remove most ink and highlighter stains from finished leather surfaces. Removes lipstick and other stains quickly and effectively. Will not harm the finish system of finished leather. 2oz

P/N 09-02122

LEATHER CLEANING BRUSHES



Specifically designed for leather cleaning, Perrone's Leather Cleaning Brushes dig out tough soils and stains from the pores of natural and corrected grained leather. For best results use in conjunction with Perrone's cleaning products. Can also be used for suede and nubuck. Sturdy Wood Block with 3-1/2"x2" Bristle Bed

P/N 09-02123

HEADLIGHT REPAIR & SCRATCH-AWAY RESTORE KITS



PLEXIGLASS LENSE REPAIR KIT - Removes crazing, scratches, scuffs, and haze from navigation light lenses, recognition light lenses and landing light lenses. Not necessary to remove lens to restore to optical clarity. P/N 09-02171



SCRATCH AWAY HEADLIGHT RESTORE KIT - This kit will remove haze, cloudiness, and light scratches. Process will resurface the lense rather than fill in scratches. Once the process is complete, damage will not return. This is a spot repair kit. We also have larger kits available.

P/N 09-02170



ACRYLIC HEADLIGHT LENSE RESTORATION KIT

- Easy to use double sided MICRO-MESH SOFT TOUCH PADS make removing cloudiness and haze from lenses, lense covers, tail lights, tail light black-outs, and bug deflectors a snap! Each kits contains: 3 IN. x 4 IN. double sided pads in 120/220, 400/1500, 2400/3600, 4000/12000, 1 oz. bottle MICRO-GLOSS liquid abrasive, and 2 cotton flannel cloths. Clean, dry, and reuse over and over - A FANTASTIC VALUE! P/N 09-02172

CS

CLEANERS – POLISHES



CLEAR™ WINDSHIELD CLEANER

Specifically developed for aircraft windshields. Flight Bright® CLEAR™ provides optimum visibility without harming the windshield or paint. Features: • Easy to use • Streak-free • Anti-static • Non-abrasive • Prolongs windshield lifespan • Non-Yellowing Formulation

2.5 oz. P/N 09-00792
22 oz. P/N 09-00793

FINAL APPROACH™ POLISH & SEALANT

Provides long-term protection and an impressive high gloss finish. No wax or free silicones. Safe for all types of paints, clear coats, graphics, fiberglass and plexiglass. Features: • Easy to apply • High gloss finish • Leaves no white powdery residue • Acid rain and sun fading protection.

P/N 09-00794



ARRIVAL METAL POLISH

Arrival Metal Polish is a first-class liquid polish designed to give your aircraft a premium shine in no time. It is the ultimate polish for the restoration and maintenance of unpainted metals. Arrival also works great in the removal of rust and oxidation.

P/N 09-01090



ILS™ INTERIOR LEATHER SYSTEM

Flight Bright® ILSTM uses a gentle balance of moisturizers and lanolin oils to nourish, preserve and enhance fine leather. With regular use, this conditioning cream penetrates and softens leather to prevent dryness and cracking. Yellow application sponge included. Features: • Moisturizes • Nourishes • Softens

P/N 09-00802



PRE-FLIGHT™ WASH (CONCENTRATE)

Highly concentrated, commercial-strength, gloss-enhancing wash. Contains no acids, silicones, waxes or damaging sodium chloride. Its thick foaming action delivers a thorough but gentle cleansing for any aircraft. Features: • Will not remove polish • Non-abrasive • Streak-free rinsing • Quick drying

Wash P/N 09-00803
Gallon P/N 09-00804



GEAR-UP™ EXHAUST & OIL REMOVER

Specially formulated to remove exhaust and oil from airplanes. Quickly cuts through carbon & grease. Solventfree, caustic-free GEAR-UP™ removes stains and ink from fine leather, upholstery & carpets. Features: • Cuts through grease & oil in seconds • Non-corrosive • Solvent-free.

2.5 oz. P/N 09-00795
22 oz. P/N 09-00796
1 Gallon .. P/N 09-00797



TAKE-OFF™ BUG REMOVER

Specially formulated to soften and neutralize the acidic proteins found in bugs. TAKE-OFF™ safely removes bug residue without removing polish or damaging paint, clear coat, glass, plastic, metals & chrome. Features: • Powerful & effective • Will not remove polish • Excellent spot cleaner for bugs in between regular washings • Ready-to-use as a pre-soak for bugs before washing

2.5 oz P/N 09-00805
22 oz. P/N 09-00806
1 Gallon P/N 09-00807



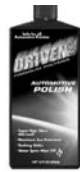
GO-AROUND™ WATERLESS WASH & DETAILER

Gives your aircraft that just-polished, slippery feel and highgloss wet-look! Fast and easy to use. Petroleum-free, silicone-free, Flight Bright® GO-AROUND™ safely removes dust, bugs and mild grime. Features: • Wont scratch, streak or smear • Anti-static gloss enhancer • Leaves no oily film

2.5 oz P/N 09-00798
22 oz. P/N 09-00799



1 Gallon P/N 09-00801



DRIVEN AUTOMOTIVE POLISH

Driven Automotive Polish is the most highly advanced formulation of premium grade polymer polish on the planet. It has a super high gloss wet look with incredible depth and clarity, the sheeting action reduces water spots that wipe clean. Nothing sticks. Harmful elements can't "bite in". Easy to apply in sun or shade. Can be applied to an entire vehicle before wiping off. Will not harden or cake. Long lasting. Holds up under intense heat from sun and severe winter cold for up to 1 full year. Cleans surface contaminants and oxidation with no abrasives. Fills light swirl marks and leaves no residue. Repels water from windows in the rain without the use of wiper blades. Cleans brake dust from rims. Once applied, non-stick finish reduces brake dust build-up. Paint life is dramatically extended by feeding with essential polymers & oils. Excellent for use on aircraft.

P/N 09-00776

DRIVEN MARINE POLISH

Driven Marine Polish is the most highly advanced formulation of premium grade polymer polish on the planet. Sheeting action reduces water spots that wipe clean. Nothing sticks. Harmful elements can't "bite in". Easy to apply in sun or shade. Super high gloss wet look with incredible depth & clarity. Long lasting. Holds up under intense heat from sun and severe winter cold for up to one full year. Maximum U.V. inhibitors prevent sun damage. Excellent for use on aircraft.

P/N 09-00777



DRIVEN QUICK SPRAY CONCENTRATE

Driven Quick Spray Concentrate is a highly concentrated, biodegradable solution, not only cleans water spots, it brightens and enhances the finish while strengthening Driven's legendary non-stick protection with each application. Just add water and make 4 qts of fluid for every pint of concentrate. Once activated by water, it works by combining biodegradable cleaners, the power of citrus, and a full spectrum of essential polymers and oils. Driven's high lubricity formula actually encapsulates water spots, dust particles, fingerprints and other fresh surface contaminants, allowing them to be wiped away without streaking. Driven Quick Spray Concentrate will not strip polish or wax. And it won't stain rubber or vinyl. This formula deepens and enriches all hard surfaces, adding brilliance and protection to your finish. Excellent for use on aircraft.

P/N 09-00779



DRIVEN WASH CONCENTRATE

Driven Premium Polymer Wash safely cleans all automotive and marine finishes without stripping polish or wax. Activated by water, this unique combination of cleaning agents foams away surface contaminants while brightening and nourishing the finish with a full spectrum of protective polymers. Biodegradable. pH balanced. Safe for clear coat and fiberglass gel coat. Super concentrate provides more washes per bottle. Sheeting action is highly effective in the reduction of hard water spots. Rich foamy lather. Will not streak. Brightens and extends polish protection and shine. Excellent for use on aircraft.

P/N 09-00780



DRIVEN PROTECTOR

Driven Vinyl/Rubber/Leather Protector is a Premium Polymerbased cream that conditions, preserves and protects new and old vinyl, rubber and leather leaving them naturally soft and supple without being slippery or greasy. This conditioning formula feeds and nourishes new vinyl, rubber and leather with a full spectrum of rich gels, protective polymers and U.V. sunscreens. It also rejuvenates old and neglected surfaces that have dried and faded due to weather, exposure and the sun's damaging rays. Excellent for use on aircraft.

P/N 09-00781



DRIVEN FINISH RESTORER

Driven Finish Restorer promises & delivers unparalleled performance. This dramatically different premium grade glazing compound was designed using only the very highest quality of ultra fine micro abrasives to achieve world class results. These precision abrasives with numerous exterior facets and extremely sharp edges are the critical element for safe removal of oxidation, heavy water spots, surface contaminants, stains and light surface scratches. Driven Finish Restorer simultaneously feeds the finish with a full spectrum of essential polymers and oils resulting in a phenomenal shine. Safe for all automotive and marine finishes including paint, clear coat, fiberglass gel coat and all types of metal. This unique combination of safe cleaning and nourishing is sure to bring out the very best in your finish. Excellent for use on aircraft.

P/N 09-00778



FLIGHT LINE KIT

The complete Flight Line Kit comes with a custom-made, compartmentalized, easy-access, leak-proof gear bag. Each of the following Flight Bright® products are included: *CLEAR™ Windshield Cleaner *FINAL APPROACH™ Polish & Sealant *GEAR-UP™ Exhaust & Oil Remover *GO-AROUND™ Waterless Wash & Detailer *ILSTM Interior Leather System *PRE-FLIGHT™ Wash Concentrate *TAKE-OFF™ Bug Remover *AIRCRAFT WINDSHIELD WIPES *ANTI-STATIC HAND PAD * MULTI-FIBER POLISHING CLOTH *ARRIVAL METAL POLISH *Also included is a Flight Bright® T-Shirt.

P/N 09-00808



CS

THE PROPER AIRCRAFT CLEANING PRODUCTS



TRI-GUARD™

The Best boot treatment available!

One of the most frequently asked questions we receive from aircraft owners is "What is the best way to take care of my de-ice boots and not spend a lot of time?" After researching, testing, and re-testing; The Proper Aircraft® has found a solution. Tri-Guard™ De-Ice Boot Protectant, the newest edition to The Proper Aircraft's® line of quality aircraft cleaning products. Tri-Guard™ is a rejuvenating conditioner with a high gloss shine, as well as a component to help with the ice-shed process. It is specially formulated to achieve superior care of your de-ice boots in less time (and money) over traditional multi-step products.

Description
 16 oz. 09-02028
 1 Gallon..... 09-02029



TRI-GUARD™ PREP CLEANER

To ensure the most effective results, proper preparation is key. Tri-Guard™ Prep Cleaner is formulated for use before each application of Tri-Guard™ De-Ice Boot Protectant. It effectively cleans the de-ice boot of all old boot treatments, ensuring the best results.

16 oz. 09-02030
 1 Gallon..... 09-02031



AERO SURFACE WASH

Formulated specifically for aircraft finishes. Aero Surface Wash quickly penetrates and loosens oil and grease without stripping the wax. Its advanced, highly concentrated cleaning formula cuts through stains, dirt and acid rain. It revives colors and dries without streaking or spotting. Gentle, yet effective, Aero Surface Wash is safe for all aircraft exteriors.

16 oz. 09-02014
 1 Gallon 09-02039.....



POWER CLEAN GEL

Safe, yet aggressive, Power Clean Gel attacks even the most stubborn cleaning problems. It removes bugs, grease, oil, bird droppings and hydraulic oils. The gel stays where it's sprayed – no runs, no drips. And it cleans the leading edge and difficult exhaust stains without damaging the paint. Use our Sontara disposable wipe cloths Power Clean Gel to achieve the best results.

16 oz.....09-02015
 1 Gallon.....09-02016



WINDSHIELD GEL

One of our best sellers! Cleaning gel formulated for acrylic windshields. Unlike other window cleaners, Windshield Gel doesn't streak or leave a residue. Windshield Gel's unique blend of ingredients penetrates and lifts dirt allowing a clean wipe off and a sparkling, streak-free finish. It cleans, shines, and protects without scratching. Safe on all surfaces. Its antistatic qualities and excellent vertical cling are specially formulated for acrylic windshields.

16oz. 09-02017
 1 Gallon 09-02018.....



WINDOW POLISH

The Proper Aircraft Window Polish removes fine scratches and helps restore clarity to aircraft windows. Manufactured to meet milspec PP560B specifications, Aircraft Window Polish is safe and effective for use on all acrylic aircraft windows. It removes cumulative surface soils, produces a smooth, lustrous finish and is nontoxic, antistatic and noncorrosive to adjoining aluminum surfaces. Simply apply the polish, let dry, and wipe it off. The results? Clear, clean, residue-free windows.

P/N 09-02019.....



LIQUID CARNAUBA WAX

Liquid Carnauba Wax – the ultimate in shine, durability and protection. Liquid Carnauba Wax will safely protect your finish from the effects of insect stains, acid rain, engine exhaust and other finish eaters. Our unique formula Liquid Carnauba Wax contains the highest-grade #1 yellow carnauba wax – the best in the world! The special ingredients are designed to protect and preserve all aircraft finishes, including clearcoats. Its easy-on, easy-off application is a plus. For use on newer finishes.

P/N 09-02020.....



REJUVINATING LIQUID CARNAUBA WAX

Rejuvenating Liquid Carnauba Wax restores oxidized finishes to their original beauty. Our rejuvenating wax contains the same rich ingredients as Liquid Carnauba Wax with the addition of a mild rejuvenating polish. In one easy step, Liquid Carnauba Rejuvenating Wax safely strips away oxidation from old painted surfaces. The result: a polished gleam that lasts. Carnauba doesn't leave a buildup of wax because you apply it with one thin coat. It goes on and wipes off with ease. For use on finishes that have oxidation

P/N 09-02021.....



LEATHER CONDITIONER & PROTECTOR

There's nothing quite like the look and feel of new leather. And there's nothing quite like the Proper Aircraft Leather Conditioner for keeping it that way. The Proper Aircraft Leather Conditioner keeps your interior soft and vibrant without leaving a greasy residue, prevents soiling and inhibits moisture loss. The Proper Aircraft Leather Conditioner contains natural penetrating oils that nourish the hide's deep fibers and restore moisture, improving the leather's resiliency. It's highly concentrated, so a little goes a long way! Before conditioning, we recommend that you first clean leather using The Proper Aircraft Leather Cleaner.

P/N 09-02022.....

CS

SPRAY NINE CLEANERS & DEGREASERS

AV-8 MILITARY AIRCRAFT SOAP FROM SPRAY NINE



Type IV Heavy Duty, Water Dilutable Cleaning Compound. AV-8 is a biodegradable, highly concentrate, microemulsion blend of surfactants and builders that provide a broad range of cleaning on painted and unpainted aircraft exteriors, aerospace ground equipment (AGE) and AGE engines with the assistance of a proprietary blend of corrosion inhibitors. AV-8 effectively and efficiently removes grease, oils, carbon exhaust, hydraulic fluid, gun gas, graphite, dirt and other soils. Rinses easily without having streaks or residue. AV-8 is low emulsifying and will not negatively impact oil water separator systems and other pollution abatement systems. **Features:** • Qualifies to MIL-PRF-87937. • Listed on AF Qualified Products List QPL#AFTT-05-002. • AMCOM approved for use on Army helicopters. • Conforms to Boeing D6-17487 Rev. P Spec. • Conforms to Douglas CSD-1 Spec. • Conforms to AMS-1526B Spec. • Meets EPA 793.3100 Aerobic Aquatic Biodegradation

Ready-to-Use 24 oz. Spray P/N 09-01970.....
 Concentrated Soap - 5 Gallon P/N 09-01972.....
 Concentrated Soap - 55 Gallon P/N 09-01973.....

SPRAY NINE MULTI-PURPOSE CLEANER



Cleans • Disinfects • Degreases • Deodorizes • Removes Stains **Tough Task Cleaner** - Spray Nine's no-nonsense power tackles your worst cleaning jobs, even when others fail. And it does it FAST! **Money Saver** - The only product necessary to clean up facilities & maintenance costs. One "does it all" formula reduces chemical use and gets the job done with less labor in less time than the competitors. **Broad Spectrum Disinfectant** - EPA-registered disinfectant kills harmful germs like HIV-1, Staphylococcus aureus, Salmonella choleraesuis & E. coli in just 45 seconds. Also helps prevent cross contamination.

Authorized by USDA for use in federally inspected meat & poultry plants with an C-1 rating.

24 oz. Multi-Purpose..... P/N 09-01974.....
 25 oz. Multi-Purpose..... P/N 09-01975.....
 32 oz. Multi-Purpose..... P/N 09-01976.....
 1 Gallon Multi-Purpose..... P/N 09-01977.....
 5 Gallon Multi-Purpose..... P/N 09-01978.....
 55 Gallon Multi-Purpose..... P/N 09-01979.....

EARTH SOAP CONCENTRATED CLEANER/DEGREASER FROM SPRAY NINE



Premium Environmentally Preferable Cleaner

Cutting-edge biodegradable technology combines powerful surfactants with low emulsifying action to create Earth Soap, a potent, yet environmentally thoughtful product. Earth Soap's innovative formula dissolves dirt, grease, grime and other hard-to-remove soils from most hard, washable surfaces. This versatile, concentrated cleaner may be "custom-formulated" by diluting in any proportion with water - from 1:1 for heavy soil loads to 50:1 for routine light-duty cleaning. Additionally, Earth Soap contains NO solvents, butyl, phosphates, or other harsh chemicals. Earth Soap is low-emulsifying and will not negatively impact oil/water separators and other pollution abatement systems. **Corrosion Inhibiting** - Corrosion-inhibiting formula cleans metal parts without damaging parts or parts washers (metal and plastic, traditional and heated up to 180 degrees F) Ideal uses: Dip Tanks • Engines • Concrete/Hangar Floors • Vehicles (Inside & Out) • Wash Racks • Tools & Equipment • CTK Took Kits • Plastic & Vinyl • Floors & Walls • Parts Washer (both traditional and heated up to 180°F)

32 oz. P/N 09-01980.....
 1 Gallon P/N 09-01981.....
 5 Gallon P/N 09-01982.....
 55 Gallon P/N 09-01983.....

GREZ-OFF HEAVY DUTY DEGREASER FROM SPRAY NINE



When Nothing Else Cuts It - Grez-Off works hard so you don't have to. This heavy-duty answer to heavy-duty grease and grime leaves engines, machinery, asphalt, garage floors and more whistle clean. **Top Rated Track Record** - Twice rated the #1 degreaser in an independent consumer report with top marks for effectiveness, safety and environmental impact. Made With You And Your Environment In Mind - Biodegradable, non-flammable formula hits hard and fast with less impact on user and environment. Finally a water based product that really works!

Ready-to-Use Formula is Gentler to the User: • Non-Flammable • Non-Combustible • No Acids • No Fumes or Unpleasant Odors
 32 oz. P/N 09-01984.....
 1 Gallon P/N 09-01985.....
 5 Gallon P/N 09-01986.....
 55 Gallon P/N 09-01987.....

BIO ENZYMATIC CLEANER FROM SPRAY NINE



Bio Enzymatic Cleaner from Spray Nine For Concrete Floors, Asphalt & Blacktop: • Cleans • Degreases • Digests Oil Stains Bio Enzymatic Cleaner is an innovative new cleaner/degreaser & oil stain remover from Spray Nine Corporation. Featuring a unique mix of oil breaking surfactants and bio-enzymatic agents, Bio Enzymatic Cleaner gets rid of oil & grease stains with amazing results. **Fast Cleaning Action** - Bio Enzymatic Cleaner's concentrated formula hits grease and oil hard with its fast breaking surfactants. This helps you rinse away spills before they set in to become stains **Penetrates Porous Surfaces** - Bio Enzymatic Cleaner goes straight to the heart of set-in stains. A blend of carefully chosen bio-enzymatic agents penetrates deep into the pores of surfaces and eliminates stains at the source. This provides residual cleaning action that gets stronger with every application! **Breaks Down Stains Into Water and CO2** - Bio Enzymatic Cleaner produces highly specialized enzymes to naturally digest grease and oil stains at the source. The formula is also solvent-free, non-flammable and non-abrasive for added environmental benefits.

32 oz. P/N 09-01988.....
 1 Gallon P/N 09-01989.....

POLY SCRUB HEAVY-DUTY HAND CLEANER FROM SPRAY NINE



Industrial Strength Paste-Type Hand Cleaner - Hits hard with millions of dirt busting "poly scrubbers" to dig out and mop up even the toughest soils. Tough On Dirt, Gentle On Hands - Contains no harsh solvents that dry out hands yet powers off dirt, grease, ink, adhesives, hydraulic fluid, carbon and more while leaving behind a refreshing lemon-lime fragrance.

Fights Foul Odors - Combats fish, onion, garlic, fuel, oil, lubricant & printer's ink odors.

Poly Scrub Easily Removes:

Grease • Oil • Hydraulic Fluids • Glues • Ink • Asphalt • Varnish • Paint • Carbon • Adhesives • Tar • Stains • Cement
 5oz. P/N 09-01990.....
 3.8 Pound P/N 09-01991.....
 26 Pound P/N 09-01992.....

COCO SCRUB HEAVY-DUTY HAND CLEANER FROM SPRAY NINE



Tough On Dirt - Industrial strength hand cleaner formulated with millions of dirt busting poly "scrubbers" that dig out and mop up even the toughest soils. Easy On Hands - Fortified with emollients to prevent drying & cracking. Leaves behind a pleasant coconut fragrance.

Fights Foul Odors - Combats fish, onion, garlic, fuel, oil, lubricant & printer's ink odors.

Poly Scrub Easily Removes:

Grease • Oil • Hydraulic Fluids • Glues • Ink • Asphalt • Varnish • Paint • Carbon • Adhesives • Tar • Stains • Cement
 7.5 oz. P/N 09-01993.....
 4 Pound P/N 09-01994.....
 26 Pound P/N 09-01995.....

POLY 500 HAND CLEANER DISPENSING SYSTEM FROM SPRAY NINE



Economical - Use just one "dollop" of Poly Scrub to clean even the dirtiest hands. Each 4 lb. cartridge packs 500 "dollops" when dispensed through the POLY 500 - so each wash is only "pennies per use!"

Convenient - Simply insert a fresh 3.8 lb. tub - no mess, no waste.

Durable - Rugged injection molded construction and tough, durable plastic components will hold up to the toughest use and abuse.

Lockable - Lockable lid keeps Poly Scrub fresh & Secure

P/N 09-01996.....

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COMPOSICLEAN AIRCRAFT CLEANING PRODUCTS



COMPOSICLEAN BUCKET-WASH

Bucket-Wash™ concentrate is neutral pH and safe and effective on all aircraft. Bucket-Wash™ will not attack composite components or assist corrosion. With several cleaning agents, real Carnauba Wax & U.V. protection additives this IS the right stuff. 64 ounce with pump top.
P/N 13-05254.....

COMPOSICLEAN SUPER SPRAY-WAX

Super Spray-Wax™ is neutral pH and SAFE on all aircraft. Will not attack composite components or assist corrosions. With real Carnauba wax and other cleaning and conditioning additives, this product is sure to satisfy. Provides a great shine and superior protection. Try it with one of our MicroFiber cloths. 1 Quart with commercial quality trigger sprayer.
P/N 13-05255.....



COMPOSICLEAN MULTI-PURPOSE CLEANER

This multi-purpose ALKALINE cleaner is very effective at breaking down grease, oils, carbon & other stains. Use with brush or rag to agitate for tougher Stains & soils. 1 quart with commercial quality trigger sprayer. This is not a neutral pH product.
P/N 13-05256.....



COMPOSICLEAN HAZE GLAZE

A neutral pH mild abrasive cleaner & polish in one. Removes oxidation haze, surface-stains, swirl marks and paint overspray. Haze Glaze also removes minor acid rain contamination, light scratches & increases gloss on base coat & clear coat finishes. A great one-step or first step product in the detailing process. Use Composiclean Haze Glaze by hand or with orbital/random style buffers. Use Composiclean Haze Glaze on clean dry surface. Apply Haze Glaze to buffing cloth/pad or directly to surface. Rub or buff in circular motion then flip cloth or change to dry pad for finish buff. 1 quart with flip-top.
P/N 09-02065.....



COMPOSICLEAN VIEW POLISH

Composiclean™ View Polish™ will probably be the best glass cleaner you will ever use, try it around the house too. Use View-Polish™ on windscreens, side windows, plastics, Lexan, acrylic and glass. You will see No streaking! View-Polish™ is guaranteed to leave no film. Non-caustic-non-flammable, Non-ammonia formula dries fast and contain no CFC's that deplete the ozone layer. View-Polish™ is also a great bug remover for the leaning edges, wheel pants, car grills etc. Spray product onto area to be cleaned (the thick foam helps it hang there), wait 2 to 3 minutes then wipe clean. Give View-Polish™ a try with our MicroFiber cloths, you'll love it! Offered in big 19oz aerosol can.
P/N 13-05257.....

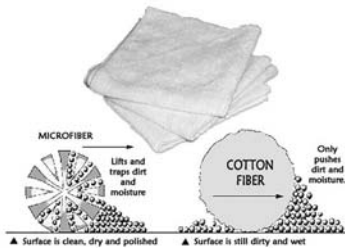


COMPOSICLEAN LEATHER CLEANER & CONDITIONER

A rich conditioning cream that cleans leather as it brings back softness. Leaves leather looking natural with no greasy residue. 1 quart with flip top. 32oz.
P/N 13-05258.....



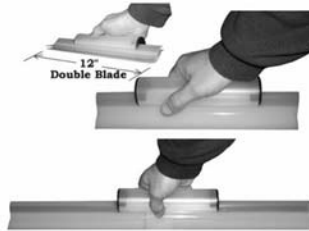
COMPOSICLEAN MICRO-FIBER CLOTH



MicroFiber is a man-made product that consists of two fibers, Polyester and Polyamide. The Polyester is the scrubbing and cleaning fiber, while the Polyamide is the absorbing and quick drying fiber. Each square inch in a MicroFiber towel contains approximately 90,000 MicroFibers. MicroFiber is a lint free, non-abrasive, and hypoallergenic products.

Unlike ordinary cotton towels that move, or push, the dirt and dust from one point to another, MicroFiber actually gets underneath the dirt and lifts it from the surface. It then stores the dirt particles in the towel until it is washed. MicroFiber is very absorbent and can hold up to seven times its weight in moisture providing "streak-free" cleaning. MicroFiber cloths are safe on all surfaces.

Keep MicroFiber cloths clean and separate from cotton towels. To ensure the effectiveness of your MicroFiber Towels only wash with other MicroFiber Towels. If MicroFiber is washed with cotton it will grab onto the cotton fibers and hold on to them. Washing by hand with mild hand soap is the best way to maintain this high quality cloth. MicroFiber cloths along with Composiclean™ Super Spray-Wax™ will provide a great streak free deep shine even in direct sun. When buffing off Super Spray-Wax™, it is best to NOT let cloth get to saturated, dryer is better. Try a MicroFiber cloth with Composiclean™ View Polish™ for streak-free window cleaning.
P/N 13-05259.....



COMPOSICLEAN SUPER SQUEEGEE

Super Squeegee is perhaps the most versatile squeegee you'll ever own. It works great and is extendable from 12" to 22". It is designed to be used in a back n' forth motion saving time and effort. It's perfect for use on the irregular and curved

surfaces of an airplane.
P/N 13-06323.....

COMPOSICLEAN WASH MOP



Soft chenille mop has 180° Swivel Head, handle extends up to 45". Includes 1 replacement head cover.
P/N 13-05261.....

COMPOSICLEAN SOLAR SCREEN



This is a Composiclean™ Solar-Screen™ statically attached to the inside of a window looking right into the sun. Comes in 6" x 9" and 9" x 12". Great for airplanes, cars, boats, RV's and can be cut to fit inside motorcycle & ski helmets too.
P/N 13-05263.....

9X12..... P/N 13-05262.....

COMPOSICLEAN PROPER CARE KIT



- 1 - 64oz Composiclean Bucket-Wash with pump top
- 1 - 32oz Composiclean Super Spray-Wax with trigger sprayer
- 3 - Plush 14" x 14" Micro-Fiber cloths
- 1 - Super-Soft Chenille wash mitt
- 1 - 11" Composiclean Super Squeegee

P/N 13-05264.....

CS

CLEANERS - DEGREASERS - ADHESIVES



VpCI™-415 HEAVY DUTY ANTI-CORROSIVE CLEANER & DEGREASER

Cortec® Corporation's VpCI™-415 Conforms to Stringent Boeing Specifications! Cortec® Corporation proudly announces the recent conformance of VpCI™-415 to Boeing's commercial specifications (D6-17487 Revision P). VpCI™-415 is a highly concentrated, non-toxic, heavy-duty, biodegradable cleaner/degreaser, which provides up to six months protection against corrosion. It is a waterbased alkaline cleaner and degreaser offering unique flash corrosion protection. It can provide corrosion protection for up to 6 months during indoor storage, and is formulated to meet the requirements for cleaning and corrosion protection of aircraft. The compounds contained in VpCI™-415 function by altering hydrocarbons so that the deposits can be removed with water. It can be metered into power washers, steam cleaners, dip tanks and other cleaning equipment. Along with good detergent properties, it is hard water stable. VpCI™-415 offers improved cleaning plus multimetal corrosion protection action in one step, resulting in significant savings. VpCI™-415 has the unique ability to remove such deposits as heavy hydrocarbons, grease, drawing, buffing machinery compounds. This concentrated alkaline cleaner degreaser is not only an excellent cleaner, but also leaves behind VpCI™ (Vapor Phase Corrosion Inhibitors) designed to protect aluminum from corrosion. This product is currently used by the Coast Guard for cleaning aircraft stationed in salt spray environments. Use at 10-25% in wash water solution.

Tested:

- MIL-PRF-87937D
- ASTM D 2240
- ASTM F 483-90
- ASTM F 484-93
- ASTM F 485-98
- ASTM F 502-93 F
- ASTM F 519-93 Type 1C
- ASTM F 1104-87
- ASTM F 1110-90
- ASTM F 1111-88

Features: •Biodegradable, • Heavy-duty chemical cleaner and degreaser with, • unique cleaning action for removing hydrocarbon deposits, • Provides temporary multimetal corrosion protection, • Provides exceptional resistance to pitting corrosion, • Non-toxic, non-corrosive and does not contain nonylphenoethoxylates, • Provides excellent cleaning action at low temperatures, • Mild foaming, • Exhibits hard water tolerance, • Formulation remains stable during freeze-thaw cycle

P/N 09-01999

Case of 4 P/N 09-02113

STRIKE HOLD II CLEANER/PENETRANT/LUBRICANT



Strike Hold is a potent anti-corrosive and has a dielectric strength of 38,000+ volts so it can also be used on electrical contacts and connections. Its capillary action will quickly encapsulate metals by flowing against gravity and under overlapping sheets of metal. It is a highly penetrating and mobile liquid with CFC's and is non-flammable by flame projection test as opposed to other fluids containing butane or propane propellants. It completely seals out water with a shield film. The carrier agent evaporates (unlike ACF 50) and does not leave a dust collecting film to re-contaminate a surface. The flash point is in excess of 450°F and the freezing point is -85°F. This product is heavier than water and does not damage polymers, rubber or plastics.

P/N 09-00890



STRIKE-HOLD® BRAND MICROFIBER CLOTH

These high quality 16"x16" Microfiber® Cloths are machine washable and won't scratch, mar or streak surfaces. Features: • lint-free • non-abrasive • machine washable • eco-friendly "Green" • inexpensive and long-lasting

P/N 09-02043



V & S AIRCRAFT CLEANERS & ADHESIVES

V&S #581 FOAM & FABRIC SPRAY ADHESIVE - V&S 581 Foam & Fabric Spray Adhesive is specially formulated for bonding flexible urethane or latex foams to themselves or most other material (wood, metal, paper, corrugated, fabrics, etc.) Produces bonds with foam-tearing strength.

P/N 09-42650

SUPER TRIM ADHESIVE #1081 - A high temp high strength contact type adhesive. Bonds metal, foam, decorative laminates, fabrics, headliners. Variable width spray pattern. Meets Fed. Spec. MMM-A-130B.

P/N 09-42652



V & S DRY SILICONE SPRAY - Exceptionally high quality dry silicone lubricant that stops adhesion of urethane foam backings, foam rubber and other non-sliding materials to metal, wood or rubber. Non-staining, will not harm painted surfaces.

P/N 09-42654

CITRUS CLEANER #609 - Can be used safely on many surfaces to remove adhesives, grease, inks, and residue from various tapes. Environmentally safe, biodegradable and pleasantly scented.

P/N 09-42656



AERO-600 AVIONICS CLEANER



The secret formula used in the film and photography industry, is now available for the aviation community! Eliminate fingerprints, streaks, dust, dirt, oils, from your avionics, glass cockpit screens, electronic flight bags, GPS screens, Laptop, and plasma screens. Aero 600™ tested for well over three years by professionals in the aviation industry with outstanding results. It's designed to have industrial strength; be powerful, yet mild and gentle to your screens. "We keep a bottle in the side pocket of our corporate aircraft and have been using it exclusively to clean our instruments, laptop screens and even our eyeglasses. It never streaks and helps keep the dust at a minimum." Nina Anderson, Hawker pilot. Aero 600™ is also safe for use on Laptop & TFT LCD screens, LCD, Plasma & Projection TVs (LCD and Projection screens have a soft membrane in place of glass which can easily be degraded by harsh chemicals. Plasma screens have a thin delicate protective coating which also can be damaged.

P/N 09-02040

STEWART SYSTEMS PROPOLISH



Stewart Systems ProPolish is the perfect metal polish to use in conjunction with Stewart Systems EverShield. ProPolish holds it's shine longer than most other polishes and is very easy to use. Wipe on, wipe gently until polish is black, and wipe off. Repeat until you achieve the desired shine. Use SS ProPolish on bare metal or chromed surfaces, and then apply EverShield to make the shine permanent. SS ProPolish is available in green for cleaning and white for finishing.

Green 8 oz. P/N 09-02054

White 8 oz. P/N 09-02055

Green 16 oz. P/N 09-02056

White 16 oz. P/N 09-02057

CS

TOWELS — CLEANERS

MICROFIBER CLEANING TOWELS



These non-abrasive, super absorbent cleaning towels are excellent for cleaning plexiglass, rotors, props, and fronts of aircraft to remove bugs and dirt without fear of scratching. Microfiber needs only water to work due to its unique construction. Used extensively on aircraft, boats, RVs, and motorcycles. Available in Terry style (16"X16", blue) and in Chamois style (16"X24", gold).

Terry styleP/N 09-00272 ea
Chamois styleP/N 09-00273 ea



KIMTEX SHOP TOWELS

The heavy-duty oil and solvent disposable wiper to replace cloth. Excellent for machine shop use.

#33560 P/N 09-30600 ea.

MICROFIBER CLEANING CLOTH



The Mystic Maid® Microfiber Cleaning Cloth will clean all hard surfaces to a streak-free brilliance without chemicals. No cleaning agents, soap, or detergent is needed; just the cloth and water. Simply wet the cloth, wipe the surface, and the cloth leaves a brilliant surface that air-dries in seconds. Machine washable and reusable for countless applications. Removes grease, dirt, and dust. Excellent for cleaning the aircraft windshield and on leading edges for bug removal.

13"x 20" clothP/N 09-00191 ea

AERO WIPEASE



AERO WIPEASE SILVER-CHROME-COPPER WIPES

- A new convenient and easy way to clean and shine all the Chrome, Silver, Copper, Steel and metal surfaces on your aircraft. With brightner and corrosion inhibitor, anti-static and lint free, provides excellent polishing and restoring. Keeping your aircraft looking like new. Moisture Lock Lid. 35 Wipes. P/N 09-01237.....

AERO WIPEASE CABIN & INTERIOR WIPES - A new convenient and easy way to clean and shine your aircraft or boat cabin and interior. Anti-static and lint free with UV protection to use on Plastic, Glass, Vinyl, Trim, Dash, Laminated Wood and Leather. Keeping your aircraft or boat looking like new also works well on your automobile. Moisture Lock Lid. 35 Wipes. P/N 09-01238.....

AERO WIPEASE GLASS COCKPIT & AVIONICS WIPES - A new convenient and easy way to clean your glass cockpit and avionics. Removes finger prints, smudge, dust and dirt. Anti-Static and lint free, safe to use on all Radar, LCD display, GPS, Touch Screen, Laptop and Multi Function display. Perfect size to fit in your flight bag. Moisture Lock Lid. 35 Wipes. P/N 09-01239.....

SONTARA AIRCRAFT WIPES



Tough Dupont Sontara® AC™ aircraft wipes are the smart choice for both aircraft manufacturing and maintenance. Their strength and durability make them ideal for a wide variety of general purpose & pre-paint applications. Sontara® AC™ wipes leave surfaces clean because they're

extremely low-linting. Tackles tough cleaning agents without falling apart. every Sontara® AC™ is clean right out of the box. No chemical residues or stains. Sontara® is specially engineered to resist snagging on metal parts and corners. Superior to paper wipes which snag & tear. Outperforms cheesecloth which leaves strings behind when it snags on a rivet. Sontara® AC™ is great for wiping surfaces dry because it contains no additives that hamper absorbency.

9" x 16' Wipes (Box of 100)P/N 09-00369
12" x 16' Wipes (Box of 125)P/N 09-00368



NEVR-DULL WADDING POLISH

Cleans and polishes all metals including: Silver, gold, brass, copper, pewter, glass, steel, aluminum & chromium. Nev-Dull removes rust and tar from automobile and motorcycle chrome. Excellent for Mag & chrome wheels, boat fittings, workshop tools, fishing gear, sinks, showers & campers.

5 oz.P/N 1035605.....



NEVR-DULL POLISH

Cleans and polishes all metal including: silver, gold, brass, copper, pewter, glass, steel, aluminum and chromium. Removes rust and corrosion instantly. NEVR-DULL removes rust and tar from automobile and motorcycle chrome. Leaves no deposits in the crevices of metal work. Excellent for: Mag and chrome wheels, boat fittings, workshop tools, fishing gear, sinks, showers and campers.

P/N 09-24350.....



TIRE CLEANER

Dissolves grease, oil and road grime. Unique optical brighteners whiten white walls and leave tires with even, natural, black luster. No harmful bleaching agent.

18 oz.

P/N 1060618.....

WAX AS-U-DRY

After washing your aircraft leave it wet, then spray Wax-As-U-DRY on the surface. After the water sheets away, you dry the surface with a chamois towel. The result is high gloss shine without spending the afternoon buffing. A one step spray wax is a blend of water reactive polymers and waxes that are safe for all painted surfaces, windows, trim & wheels.

P/N 09-00370.....



MEGUIAR'S GOLD CLASS ALL PURPOSE CLEANING WIPES

Meguiar's combines its strongest cleaning and degreasing formulas in a disposable wipe. Designed for multi-surface use including vinyl, metal, rubber, chrome, plastics & fabrics, Meguiar's Gold Class wipes are environmentally safe, non-abrasive and non-toxic. Packaged 25 to a container, the 7"x 9" wipes store easily in gloveboxes, trunks or bulkheads. They are powerful enough to clean road grime from wheels and engines, or salt spray from fiberglass hulls, yet safe on hands.

P/N 09-01651.....

PROTECT ALL POLISH



Protect-All makes everything look better - cleans and polishes in one easy step. Works on vinyl, rubber, plastics, painted surfaces, fiberglass and chrome. Use Protect-All on the entire aircraft, inside and out, including windshields.

6oz. spray can..09-00556.....

13.5oz. spray...09-24900.....

16 oz. Trigger ...09-00597.....

32 oz. trigger...09-00598.....

1/2 Gallon Jug..09-00599.....

1 Gallon. Jug...09-00601.....

PROTECT ALL QUICK & EASY WASH



A non-abrasive, anti-static, water repellent wash that replaces soapy detergent products and eliminates rinsing when washing aircraft and other surfaces. No hose is needed. Quick & Easy Wash conserves water. Removes oxidation, stains and heavy grime with a strong cleaner or polishing compound before using Quick & Easy Wash for the first time. From then on use 1/2 oz. (1 capful) in a bucket with 2 qts of water for an average size plane. Use 1 oz per gal. for larger aircraft Wash a section at a time then just chamois, towel or squeegee dry! This is especially important where water use is restricted. Because you don't need to rinse, you can wash in your hangar and airplane tie-downs.

PintP/N 09-24910.....

QuartP/N 09-24920.....

Gallon.....P/N 09-24930.....

PROTECT ALL FIBERGLASS OXIDATION REMOVER & COLOR RESTORER



1-Step Application: Cleans, Polishes, Seals Removes: Oxidation, Wax build-up, Stains, Surface scratches, Hard water spots For: Fiberglass, Gelcoat, Enamel, Polyurethane painted surfaces. 32oz. PN 09-01659.....



PROTECT ALL BLACK STREAK CLEANER & DEGREASER

Use on 100's of surfaces indoors and outdoors. Removes: Black streaks, grease and oil, stains, bugs, mildew, soap scum and more! Extra heavy-duty and super concentrated, it not only removes the heaviest black streaks quickly and easily, but may be diluted for 100's of uses indoors and outdoors. Use full strength for big jobs and dilute to make gallons of multi-purpose cleaner. Biodegradable

PN 09-01660.....

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CLEANERS – POLISHES

PPC AIRCRAFT CLEANERS

PERFECT DETAIL™ SURFACE ENHANCER



Perfect Detail™ is the nation's leading choice for producing "wet look" shine! A light mist instantly produces maximum depth of gloss and flawless glassy brilliance on clear coat, black, and all other paint finishes. It works especially well on all other non-porous surfaces (such as chrome, glass, etc.) while lightly cleaning and accenting soft surfaces such as vinyl, rubber, and leather. For engine detailing Perfect Detail™ can't be beat! Perfect Detail™ is anti-static and slippery, enabling it to resist dust, dirt, and abrasion better than any product.

18 oz.P/N 09-00165
1 GallonP/N 09-00166

BELLY WASH™ DEGREASER



Water-based BellyWash™ is highly concentrated for versatility and cost-effectiveness in any aircraft surface maintenance situation. It can be applied in any manner – spray, brush, wipe, power washer, etc. – and can be diluted with water by as much as 80:1 for routine cleaning in commercial application. Stubborn stains are dissolved almost on contact using full strength Belly Wash™, making it perfect for keeping troublesome aircraft bellies and wheel well areas in like-new condition. When used to remove concealing grime and petroleum-based residues from the aircraft engine area, Belly Wash™ makes it possible to perform a more thorough inspection when checking for potential maintenance problems.

18 oz.P/N 09-00168
1 GallonP/N 09-00169

WING CLEAN™ LEADING EDGE CLEANER



One major performance factor the aircraft owner/operator can improve upon is complete removal of all parasitic drag resulting from impacted air debris on the leading edges. Wing Clean™ is specifically formulated to both safely and effectively dissolve the problem. Wing Clean's™ water-based non-solvent "spray-soak-rinse" application dramatically improves an aircraft's flight-ready condition. Routine use of Wing Clean™, in series with PPC's Perfect Detail™ and/or Prestige Protective Polish, produces a microcellular separation barrier on leading edge surfaces, making future bug removal a progressively easier task.

18 oz.P/N 09-00170
1 GallonP/N 09-00171

CRUD REMOVER™



Crud Remover – made with water – is an environmentally safe replacement for heavy-duty petroleum cleaning solvents. It's extremely powerful degreasing and defatting abilities enable it to dissolve diesel fuel, soot, and oily deposits on contact, grease and heavy grime in seconds, and virtually any stain from any surface – including cloth – in a matter of seconds! It also loosens bolts. It can be applied in any manner – spray, brush, wipe, or soak – and simply rinses off with water.

18 oz.P/N 09-00172
1 GallonP/N 09-00173

AERO GLAZE DRY WASH & POLISH



Aero Glaze is a high-grade protector and restorer. Removes oxidation, fuel stains, soil, insects and exhaust deposits. Aero Glaze retards corrosion, resists stains and prevents paint deterioration.

1 GallonP/N 13-00030

KLEEN JET CLEANER & DEGREASER



Kleen Jet is a biodegradable aircraft industry cleaner and degreaser. It is a water-soluble, non-flammable, non-toxic concentrate that leaves no oily film or residual gumminess. Removes carbon, oil, grease, insects and inhibits corrosion and rust.

1 GallonP/N 13-00029

BIG ORANGE PLUS



A citrus scented degreaser and cleaner designed for the aircraft industry. This surface degreaser is non-irritating but will remove heavy encrustations. Big Orange Plus combines solvent power with an emulsifier system that removes SKYDROL, hydraulic fluids, fuel stains, exhaust soot.

1 GallonP/N 13-00031

FLEET WASH



Fleet Wash aircraft wash and wax is an effective cleaner that leaves a wax-like surface on the washed aircraft. Contains a high percentage of W-300. Fleet Wash leaves a high luster, water-repellent surface which helps to repel dust.

1 GallonP/N 13-00032

FORMULA 2™ CLEANER/ PROTECTANT



Formula 2™ Cleaner/Protectant is a chemically unique multipurpose liquid which thoroughly cleans, beautifies, and protects all leather, rubber, vinyl, and finished wood products in one easy sstep with no greasy film! Due to its unique chemistry, Formula 2™ can also be used on painted and plastic surfaces. When applied sparingly to such surfaces it dries to a slick smooth, invisible coating resistant to mud, fingerprints, food splatters, soap scum, water spotting, etc. On leather, rubber, and vinyl Formula 2™ first dissolves away imbedded grime, then penetrates and softens the material to give it new life and flexibility, at the same time providing a lustrous, weather-resistant finish to prevent future deterioration.

20 oz.P/N 09-00174

EASY™ ALUMINUM POLISH



Easy™ Aluminum Polish is a unique liquid formula that produces a "mirror-like" shine in seconds on smooth aluminum, magnesium, stainless, brass, nickel, etc. Its ability to melt oxidation and simultaneously bring up the metal's true brilliance can't be matched by any other polish. The application of Easy™ allows its exclusive acrylic polymer barrier to "lock" onto the metal's polished surface to resist staining, tarnish, and weathering effects indefinitely. The fine "mirror" finish can easily be maintained with a quick "touch up" application of product as desired.

8 oz.P/N 09-00177

REAL™ WHEEL CLEANER



Real™ Wheel cleaner is the first detergent-based single product able to clean brake dust and corrosion from any type wheel in seconds! It works on contact to remove corrosion from older unfinished or neglected metals (aluminum, copper, brass, bronze, zinc) and is great for antique restoration. Real™ Wheel Cleaner's exclusive detergent action saves both time and money when detailing any vehicle.

18 oz.P/N 09-00178

NATURALLY NEW™ TIRE DRESSING



Naturally New™ Tire Dressing utilizes PPC's advanced water-based polymer technology to produce an effective, cost-efficient dressing that actually protects rather than destroys the integrity of the sidewall. Naturally New™ exactly describes the lustrous sheen imparted on contact with this instant action formula. The dry, semi-permanent barrier is both water repellent and resistant to dust, dirt etc. Naturally New™ Tire Dressing adds maximum beauty while conditioning to keep that "new tire" look during the treadlife of the tires

18 oz.P/N 09-00179

PREMIUM LEATHER CARE PRODUCTS



Perrone's Leather Cleaner and Conditioner is a premium blend of gentle cleansers and light conditioners formulated to clean and rejuvenate finished leather, vinyl and plastic surfaces. Removes dirt, dust, and oils without drying or damaging the surface. Helps protect leather from weathering and fading. Leaves leather surfaces soft, supple and smelling like new again. The wipes are treated with the same leather cleaner/conditioner as in the spray bottle. This quick, convenient and cost effective method of reducing ink stains, dirt, grease, and body oils from penetrating leather surfaces will add to the longevity and appearance of your aviation leather interior without any adverse effects on flammability.

32 oz. with trigger sprayer P/N 09-00557
1 Gallon refill P/N 09-02062
Sontara Wipes (45 sheets) P/N 09-00559

SUNBLOCK FOR LEATHER KIT



SunBlock's newest product features cleaning and protection for leather that prevents stains and cracking. The SunBlock Cleaning System for leather interiors keeps your leather soft and supple by maintaining the moisture in the leather and preventing the destructive effects of everyday use while preserving the leather topcoat. Regular use of SunBlock Leather Cleaner and SunBlock Protection Cream will maintain the original look and feel of the leather without affecting the leathers breath-ability. This kit is safe

for all leather except Suede or Nubuck.

Contains:
1- 5oz. Bottle of SunBlock Leather Soft Cleaner
1- 5oz Bottle of SunBlock Leather Protection Cream
1- Soft Cloth
1- Sponge

P/N 06-01048

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POLISHES – WAXES – CLEANERS

JET STREAM AVIATION PRODUCTS

POWERFOAM SPRAY & WIPE FOAM CLEANER



An exterior and interior spray and wipe cleaner. On aircraft exteriors, Powerfoam will effectively clean carbon exhaust, engine cowlings, oil and bugs. Excellent for use between wash jobs as a "trip ready" wipe and cleaner. On aircraft interiors, Powerfoam will completely clean smudge marks, nicotine stains, fingerprints and food stains. Can also be used on leatherette, sinks, table tops, woodwork, stainless steel, lvs, painted or similar surfaces.

19 oz. CanP/N 09-37970

SUPREME GLAZE AIRCRAFT FINISH TREATMENT



Supreme Glaze is a semi-flowing paste cleaner wax that cleans, shines, resurfaces, all aircraft painted surfaces while bringing out the brilliance of the original color. Supreme Glaze safely removes light to medium oxidation and scratches. Excellent for use on carbon exhaust stains associated with aircrafts such as King Airs. Supreme Glaze contains color brighteners and will protect against oxidation, salts, UV rays, hydraulic fluid, insect residue and acid rain. Can be used by hand or machine polisher.

16 oz. Bottle.....P/N 09-37980

FLYERS SPEED-WAX WATERLESS DRY-WASH



SpeedWax is a specially formulated waterless aircraft polish and high gloss protectant Dry-Wash. This product is Carnauba Rich & is easy-on, easy-off. With Flyers there is no need to pre-clean any surfaces before using. Due to EPA regulations, cleaning aircraft with soap and water is becoming more and more regulated. Flyers SpeedWax is the answer to the ever increasing EPA regulations. This product will allow you to clean your aircraft in a reasonable amount of time, leaving the surface of your aircraft highly protected.

16 oz. bottle.....P/N 09-42015

JET STREAM METAL POLISH



SKAI METAL POLISH - Skai Metal Polish is designed to polish and restore aluminum or stainless steel to a mirror image. Used for polishing aircraft leading edges, spinners, engine inlets, thrust reversers and bare aluminum skins. Also safe for use on aircraft paint for removing heavy oxidation and stains.

Skai Metal Polish is also very economical. A one pound container will normally equal several pounds of our competitor's products. Skai makes very little mess when you are polishing and will not sling over the aircraft if used properly. Skai is non-abrasive, fast cutting and quick to clear under a buffer. Surfaces treated with Skai are protected and resistant to oxidations. **MIRROR IMAGE** - Mirror Image Brightwork Swirl Remover is designed to remove swirls in polished metal caused by machine buffing. Mirror Image can also be used as a light maintenance polish between machine polishing jobs. Contains corrosion inhibitors and anti-oxidation agents for long lasting protection on all polished metal. Mirror Image will produce 100% protection while sealing the polished metal.

1 Lb. can. Polish.....P/N 09-41713

Mirror Image 5 oz. roll Swirl Remover.....P/N 09-41715

AIRCRAFT SQUEEGEE



Neoprene Aircraft Squeegee has been improved by adding locking threads for pole attachment and is now constructed from white plastic instead of metal. Will remove water from un-even aircraft surfaces safely and smoothly. You will save time and dozens of wet towels while completely drying any size aircraft in just minutes.

P/N 09-42025

BUFFING / POLISHING PADS



Buffing Pads are made from 100% wool with a 1-1/2 inch pile. These pads can be used for all of your brightwork and paint polishing needs and will cut through oxidation quickly and wear evenly for extremely smooth polishing. Our buffing pads can also be washed and re-used multiple times for long lasting life. They do not have velcro backing and are designed to be used with a threaded nut and backing plate.

P/N 09-42035

BUFFING PADS SPUR / CLEANER



Absolutely a must tool when buffing. The Buffing Pad Spur Cleaner is used to break down compound build-up without removing the pad from the machine polisher. When buffing, your pads fill up with polishing compounds not allowing to perform properly. The Buffing Pad Spur Cleaner will quickly and efficiently remove this build-up, restoring the pad to it's full potential.

P/N 09-42045

FLITZ FIBERGLASS / PAINT RESTORER



Flitz Fiberglass/Paint restorer safely cleans, polishes, and protects fiberglass, plexiglas, painted surfaces, and plastics. It removes rust, oxidation, tarnish, and tar. It will not harm gel coat or clear coat, anodized or polished aluminum, stainless steel, brass, copper, chrome, and more. Contains no ammonia or abrasive.

8.5 fl. oz.P/N 09-01240

FLITZ SPEED WAXX

This wax is perfect for waxing between flights. This remarkable spray on/wipe off wax is water based. No streak. No Smear. No white residue. Gives a super gloss, super fast. 16oz. trigger spray. 09-01678



FLITZ LIQUID WAXX

This natural wax protectant contains 40% Carnauba wax to enhance and protect all surfaces against the elements. Excellent for use on the Imron and Clear Coat aircraft paint finishes, especially to protect against heat discoloration.

Size: 8.5 oz.P/N 09-42416

FLITZ ALUMINUM & FIBERGLASS POLISH



PN 09-42405



PN 09-01676



PN 09-42415

Flitz is a non-abrasive metal polish which can be used on all metal surfaces including polished aluminum, painted surfaces, and fiberglass. It is easy to apply and remove, and leaves a protective film to protect shiny surfaces up to 4 months. A very popular multi-purpose polish.

1.76 oz. TubeP/N 09-42405

5.29 oz. TubeP/N 09-01676

2.2 Lb. CanP/N 09-42415

FLITZ POLISHING AND BUFFING BALL



The Flitz 8" Polishing & Buffing Ball is made of a viscos material which is a cooling material vs. lambs wool or cotton which is a heating material. This way it doesn't burn the paint and can be used to buff leading edges without having to tape them. This ball works wonders with Flitz Products and makes polishing much easier, faster and more effective in less than half the time. It fits all drills and air tools and will buff out scuffs, oxidation tarnish, pitting, corrosion on all metals, paints, fiberglass, plastics, and wood. Re-usable & washable.

P/N 09-00554

FLITZ MICROFIBER CLOTH



The Flitz microfiber cloths are 30 times finer than cotton and are great for buffing out waxes and polishes by hand. They will wash windows without chemicals (just use water) and will not streak or leave lint. Size: 16"x16".

P/N 09-00556

KOZAK SUPER DRY WASH



Use on metal, painted, or buffed aircraft surfaces to clean and maintain a beautiful shine. Good on spinners and prop blades too! Made from specially woven cotton fibers with a unique cleaning formula that lifts loose dirt and dust up and away from the surface. Use every time you fly to maintain a shine all year round! Reusable more than 50 times.

P/N 09-00345

SUPER SHINE SPRAY CLEANER & PROTECTOR



Super Shine is a no-run, all purpose spray cleaner and protector. Just spray on Super Shine and let its foaming action lift off dirt and grease from all washable surfaces. Surfaces stay cleaner longer, while fogging and static build-up is eliminated. Ideal for use on plastic windows. Plexiglas, windshields, vinyl, leather, glass, tires and trim, chrome, fiberglass, acrylics, veneers, and painted surfaces. Non-toxic and meets California Clean Air Act. Widely used in aviation, racing/automotive, motorcycle, & marine industries. 15 oz. Spray CanP/N 09-42580

CS

POLISHES – CLEANERS - POLISHERS

CYCLO ORBITAL POLISHERS FOR AIRCRAFT

Genuine Cyclo Polishers: a fifty-year heritage of quality.



Precision machined and hand assembled for a lifetime of trouble-free operation, the Cyclo Polisher's dual heads orbit in a random, overlapping motion that mimics fine hand polishing. Leaves a dazzling, swirl-free shine every time.

The Cyclo Dual Head Orbital Polisher is the most effective means of polishing available today. Even in the hands of a novice, it is safe to operate and provides professional results every time. The difference lies in the tool's overall balance and its patented dual heads. The dual heads operate in a synchronized motion, providing the most effective results without fear of heat buildup; damage to trim pieces, moldings and gaskets; swirl marks, holograms and more. The low-vibration and balanced design allow for a more even application and better control when operating. Electric Polishers

MODEL #5 - * Power Supply: 115 Volts, 60 Hertz, 220 Watts * Motor: alternating current, semi-enclosed 24-bar commutator, * Speed: 3000 orbits/minute, * Output: 1/3 H.P. (.25 Kw) * Weight: 6.5 lb. (2.9 kg) * Head Rotation/Diameter: clockwise /4" * Electric Cord: 10' length, 16 ga/3SJTOW * Housing: heavy-duty cast aluminum * Polisher Only.
P/N 09-35715

CYCLO POLISHER BONNETS

THE ORIGINAL CYCLO CUTTING WOOL - • Metal Polish/Cleaner • Paint Deox • Paint Compound • Paint Swirl Removal.

With VelcroP/N 09-35727

Without VelcroP/N 09-35700

WHITE FINISHING PADS - • Extreme Shine • Final Wax Buff • Wax Application • Sealant • Metal Sealant

With VelcroP/N 09-35735

Without VelcroP/N 09-35736

GREEN POLISHING PADS - • Sealant • Paint Polish • Paint Cleaner • Metal Sealant

With VelcroP/N 09-35732

Without VelcroP/N 09-35711

Note Polishing Pads with Velcro require the RUBBER PAD HOLDERS P/N 09-35730 listed with the Cyclo accessories

COTTON TERRY PAD COVER - • Final Wax Buff • Upholstery A 100% cotton terry cover. Perfect for cleaning interior surfaces and for buffing, polishing, and drying exterior surfaces.

P/N 09-35755

FASTCUT™ 600 GRIT DISC - • Tile and Grout • Ice Hockey Rink Walls • Rust Removal - This coarse nylon pad is strong, durable, and specifically designed for rough surface areas.

P/N 09-35737

CYCLO BRUSHES

GRAY ULTRA SOFT UPHOLSTERY BRUSH - • Upholstery • Fine Carpets • Fine Interiors
P/N 09-00689

AQUA SOFT CARPET BRUSH - • Fine Carpets • Durable Carpets • Auto & RV Carpets & Upholstery
P/N 09-00690

WHITE STANDARD CARPET BRUSH - • Auto & RV Carpets & Interiors • Tile & Grout • Durable Carpets
P/N 09-35742

BLACK STIFF SCRUB BRUSH - • Tile & Grout • Truck Bed Liners.
P/N 09-35740

CYCLO POLISHER ACCESSORIES

Rubber Pad Holders.....P/N 09-35730

Flat Wrench.....P/N 09-35745

HYDRASOLVE

Hydrasolve is a thickened, heavy duty, water soluble gel degreaser formulated for efficiency and performance in a broad range of cleaning and degreasing applications. It will easily and safely remove carbon exhaust, exhaust tracks, hydraulic fluid, thrust reversers, soot areas, oil & bugs. Hydrasolve is a gel product that clings to the surface being cleaned and has the ability to rinse spot free. It will not smear, but lift and suspend soils, making rinsing easy & complete. Meets Boeing & McDonnell Douglas approvals.
1 gal.....P/N 09-00528

5 gal. pailP/N 09-00529



CYCLO CLEANER-DEOXIDIZER

CTI Cleaner - Deoxidizer is great for removing hairline scratches and light to medium oxidation. Its mild abrasion creates a clean, smooth surface. Does not contain any shine components. Follow with polish or wax.

1GAL.....P/N 09-00413

16OZ.....P/N 09-00414



CYCLO CTI 1 PASS EXPRESS™ CLEANER - POLISH – SEALANT

CTI 1 Pass Express removes light scratches and environmental contaminants in one operation. Restores showroom color and brilliance, and protects finishes with a brilliant weather resistant silicone film. Excellent on any paint surface, including clear coats.

1GAL.....P/N 09-00416

16OZ.....P/N 09-00417



CYCLO POLISH & PROTECTIVE SEALANT

CTI Polish & Protective Sealant is a high poly sealant that will give your surface 12-18 months of durable protection and brilliant gloss. Restores your paint to its original new car shine. Great for use on all painted surfaces.

1GAL.....P/N 09-00418

16OZ.....P/N 09-00419



CYCLO FREE FLITE™ PROTECTIVE SEALANT

CTI Free Flite™ Protective Sealant is a mild deoxidizing agent specially formulated to bond to bare metal. It removes those fine polishing swirl marks seen only in direct sunlight and leaves a protective coating that prevents further oxidation. For use on metal only.

1GAL.....P/N 09-00423

16 OZ.....P/N 09-00422



CYCLO FREE FLITE™ CLEANER – POLISH

CTI Free Flite™ Cleaner - Polish is an aggressive rubbing compound for badly oxidized aluminum. It removes corrosion, oxidation, and surface film, leaving a hard polished finish. Popular with airlines for decades. For use on metal only.

1QT.....P/N 09-00424

5GAL.....P/N 09-00425



FAST WING PAINT SEALANT

T-500 Paint Sealant with PTFE-M is more than a wax or polish. T-500 provides a tough, long-lasting, mirror-like finish that protects paint longer. Works great on aircraft, cars and boats. Fast Wing will increase performance by reducing parasitic drag. The performance of the aircraft actually increased due to the slick surface the Teflon Sealant left on the paint. 100% Satisfaction Guaranteed. 16 oz. (1 pint).....P/N 09-00186



FAST WING VINYL & LEATHER CLEANER

Fast Wing T-600 vinyl & Leather Protector wipes dry leaving that lustrous new look finish. It creates a anti-static surface that helps repel dust and dirt, without leaving an oily residue. Fast Wing T-600 leaves a non-glare finish that is especially important to pilots and race car drivers.
16 oz. (pint).....P/N 09-00188



FAST WING CLEANER

Originally designed to remove over spray, Fast Wing T-11 cleans and restores the paint to the original luster without the use of harsh abrasives found in most rubbing compounds. Rubbing compounds almost always use some sort of abrasive material, such as volcanic ash, which can leave microscopic scratches. Abrasives may actually accelerate the oxidation process. 16 oz. (pint).....P/N 09-00187



SAFETY WASH

Safety Wash is a mild neutral PH water based exterior wash & wax concentrate designed to be gentle on your aircraft. It provides detergency and built-in easy rinse characteristics that will enhance gloss and eliminate the risk of streaking. Formulated for general routing washing of aircraft. Meets Boeing & McDonnell Douglas approvals. Safety Wash is NOT designed to clean heavily soiled areas.

1 gal.....P/N 09-00526

5 gal. pailP/N 09-00527



CS

DE-ICER PRODUCTS — LPS PRODUCTS

BF GOODRICH AGE MASTER RUBBER NO. 1 PROTECTIVE AGENT

FLAMMABLE
Age Master #1 rubber protectant helps extend the life of your de-icers so you can cut maintenance costs, slow deterioration and aging, extend service life and save money. Age Master #1 protectant isn't just a surface coat. It penetrates neoprene rubber to help retard damage from ozone, weathering and pollutants to help your de-icers stay strong and flexible. And now it's economical, long lasting and easy to apply. Just follow the simple BF Goodrich guidelines. Wipe or brush on Age Master #1 protectant every 150 flight hours or at least semi-annually, for continuing protection. Age Master #1, the only rubber protectant recommended by BF Goodrich. Meets military specification MIL-P-11520E. Age Master #1 protectant is a staining material. Avoid contact with painted surfaces. Apply sparingly and let dry thoroughly before flying in rain to prevent run-back.
Quart P/N 09-42545.....



BF GOODRICH ICX II FOR DE-ICERS

FLAMMABLE
Icex coating boosts your de-icer performance so you fly with greater confidence by helping your de-icers shed ice at peak efficiency. Icex coating chemically bonds with rubber de-icer surfaces and forms a slick film that makes your de-icers slippery. It will lower the adhesive bond between ice and de-icer surfaces so your de-icers break the frigid grip of ice better and faster! Icex coating is easy to apply and economical, too. A single application provides 50 flight hours of added ice fighting protection on leading edge de-icers and 15 flight hours of protection on prop de-icers. Get Icex coating in quart cans for an attractive uniform satin finish on your de-icers. One is enough to treat a complete single or twin-engine aircraft.
Quart P/N 09-42530.....
16 oz. Spray P/N 09-42531.....



BF GOODRICH DE-ICER CEMENT 8 oz. can. P/N 09-42535.....

BF GOODRICH SHINEMASTER PNEUMATIC BOOT TREATMENT

Shinemaster Prep is a surface coating that cleans de-icing boots & prepares the de-icer for Shinemaster. Shinemaster is a wax surface coating that enhances the appearance of pneumatic de-icing boots. Simply clean the boots with Shinemaster Prep per the instructions, then apply a couple of coats of Shinemaster treatment per the instructions. New boots look spectacular and old boots look like new. Compatible with Agemaster No. 1 and Icex products.
Shinemaster Prep (qt) P/N 09-42532.....
Shinemaster (pt) P/N 09-00325.....



RAPCO BOOTSAVER- THE DE-ICE BOOT REPAIR KIT

FLAMMABLE
Another quality product from Rapco, Bootsaver seals pin holes by bonding with the boot material. It is black in color and can be smoothed to blend with the boot surface. P/N 09-41705.....



JET STREAM PBS BOOT SEALANT

PBS Prep is formulated for use before each PBS Boot Sealant application to avoid dulling and hard to remove build-up. PBS Prep will effectively clean pneumatic de-ice boots of all old treatments assuring the best results possible when applying PBS Boot Sealant. Failure to prepare de-ice boots with PBS Prep may result in dulling due to build-up.
Qt. PBS Prep P/N 09-41711
Qt. PBS Sealant P/N 09-41712



LPS WORKPLACE ORANGE PUMICE HAND CLEANER

LPS® WORKPLACE Orange Pumice Hand Cleaner quickly and effectively removes heavy dirt, oil and grease from hands. WORKPLACE Orange Pumice Hand Cleaner contains Pumice for deep cleaning strength and can be used with or without water. Since WORKPLACE Orange Pumice Hand Cleaner is petroleum-free, it reduces skin irritation. WORKPLACE Orange Pumice Hand Cleaner is natural based and has a pH of 5.5 - 6.5.
16oz P/N 09-00786.....
Gallon P/N 09-00787.....
Odor: Citrus. Color: White.



LPS LOW SURFACE TENSION (LST)



A deep penetrating formulation attacks rust and corrosion to free "frozen" parts. LST has an extremely low surface tension that combines with a powerful foaming action to provide complete surface coverage, better penetration and improved moisture displacement. LST Penetrant lubricates and protects against rust and corrosion.
11 oz. aerosol can. P/N 09-01916.....

LPS COPPER ANTI-SEIZE



Premium Copper Anti-Seize a low-friction, anti-seize lubricant dispersed in a water-resistant grease and fortified with anti-oxidants, plus rust and corrosion inhibitors. It prevents seizure and galling and resists welding, hardening or setting. It provides low friction and cushions impact and shock loads. It will perform in temperatures up to 1800°F (982°C). Fittings are heated red hot, allowed to cool, can be disassembled without seizure or distortion. It is recommended for production and maintenance jobs where speed in assembling and dismantling is essential. It reduces downtime, saving valuable man-hours while increasing production.
1/2 lb. can P/N 09-02908.....

LPS MAGNUM TEFLON LUBRICANT



LPS® Magnum Teflon® Lubricant provides ultra-high lubricity, plus the additive strength of Teflon® for high-temperature, high-pressure environments. In even the most demanding situations, extend equipment life and reduce maintenance.
11 oz.. Spray Can P/N 09-26430.....

LPS STRONG STEEL STICKS



Easy-to-use, hand-kneadable stick for immediate repairs to steel equipment and surfaces. Ideal for stopping leaks, even works on underwater applications. Permanently fills gaps and holes in metal, concrete, wood, fiberglass, and ceramics. Has a working time of 4 minutes, and will fully cure in 30 minutes to form a durable mass which can be machined, drilled, and painted. Can be used for many types of repairs, such as plumbing, electrical, ceramic, vehicle, equipment, and machinery. It is ideal for patching holes and cracks in pipes, drums, and tanks.
4 oz. stick P/N 09-26444.....

LPS ELECTRO 140 CONTACT CLEANER



LPS Electro 140 Contact Cleaner is the high flash point, fast penetrating, non-residue cleaner alternative to CFCs for fine parts. The Electro 140 Contact Cleaner flash point is above 140°, making it safer to use in areas where flammability may be a concern. It is free of any known stratospheric ozone depleting substances - like CFCs, HCFCs, and 1,1,1 trichloroethane. Electro 140 has a low odor & is effective for flux removal and immersion cleaning.
11 oz.. Spray Can P/N 09-26465.....
Warning: Due to VOC Regulations CA, OR, WA, CO states laws prohibit use, sell, or purchase of this product as of 01/2008 Replacement for 09-26465

LPS NO FLASH ELECTRO CONTACT CLEANER



LPS NoFlash is a vaporous solvent cleaner alternative to CFC's that's safe to use on most surfaces. It's nonconductive and nonflammable, so it can be used while equipment is in operation to avoid costly downtime. NoFlash Electro Contact Cleaner penetrates and evaporates quickly, dislodging oil, grease, dirt and other materials from precision mechanical and delicate electrical/electronic parts leaving no residue.
P/N 09-26412.....

LPS MICRO-X CONTACT CLEANER



A fast evaporating contact cleaner ideal for removing grease, dirt and oil from delicate precision electrical, electronic and mechanical parts. Safe on metal and most plastic parts. No rinsing.
11 oz. Aerosol P/N 09-00151.....
Warning: Due to VOC Regulations CA, OR, WA, CO states laws prohibit use, sell, or purchase of this product as of 01/2008 Replacement for 09-00151

LPS ELECTRA-X CONTACT CLEANER



A non-flammable contact cleaner that removes oil, grease, dirt and other foreign materials from precision mechanical and delicate electrical/electronic parts. Fast evaporating. No flash point. No rinsing.
15 oz.. Aerosol.... P/N 09-00153.....



LPS PRODUCTS



LPS® HEAVY-DUTY SILICONE LUBRICANT

Meets FDA regulation for incidental food contact. Silicone-rich formula. Water-based formula. Colorless, odorless & non staining. Ideal for rubber and plastic surfaces. Eliminates sticking, binding and squeaking. Does not contain chlorinated solvents. Safe on most surfaces NSF® H1 registered. 13oz. (368g) – aerosol.....P/N 09-26410



LPS PSC PLASTIC SAFE CLEANER

Patented formula – Patented US #6,342,471. Electrical contact cleaner. Cleans electrical parts without harming plastics. * Non-flammable * Plastic safe * Non-conductive * No residue * Replaces HCFC 141b contact cleaners * Fast evaporating * Conforms to CARB VOC requirements
14 oz. aerosol can.....P/N 09-26406



LPS® COLD GALVANIZE CORROSION INHIBITOR

* Zinc purity greater than 99% * Works like a hot-dip on ferrous metals indoors and outdoors * Withstands water temperature up to 212°F (100°C) and continuous dry heat up to 750°F (400°C) * Commonly used as a flash rust preventive on welded areas * Long term protection * Flexible coating will not yellow, chalk, crack or peel * Electrochemically protects bare metal * Dries to touch in 3 to 5 minutes * 14oz. (397g) – aerosol P/N 09-26425



LPS® INSTANT SUPER DEGREASER

* Heavy-duty performance * Power blast spray * Non-flammable * Removes oil, greases, dirt and tar * Non-chlorinated * Fast evaporating * Non-conductive * No rinsing * No residue * NSF® C1 registration #129029: (aerosol); #129028: (bulk) * Canadian Food Inspection Agency (CFIA) approved 20 oz.....P/N 09-26415



LPS® TKX® ALL-PURPOSE LUBRICANT

All purpose, value lubricant which displaces moisture, loosens rusted or frozen parts and protects metal against corrosion. Does not contain chlorinated solvents or silicones. Safe to use on most surfaces. High flash point of 175°F (79°C). Inverta Spray Valve allows user to spray in an upright or inverted position. NSF® H2 registration. 11oz. (312g) – aerosol. P/N 09-00148



LPS® HDX HEAVY-DUTY DEGREASER

* Nonflammable * Removes oil, grease, wax, dirt, moisture, tar, brake fluid and other contaminants * Fast evaporating * Low odor * Quick penetration * No residue * Non-conductive * NSF K1 registration # 059809: (aerosol); # 059810: (bulk)
19oz. (539g) – aerosol.....P/N 09-26407



LPS® EVR® CLEAN AIR SOLVENT DEGREASER

* High solvent strength * Fast evaporation * Low VOC content * Complies with CARB/OTC (California Air Resources Board/Ozone * Transport Commission) Rules * Not a Hazardous Air Pollutant (HAP) * Instant cleaning action * Excellent replacement for Methyl Ethyl Ketone (MEK) * Ideal for cleaning metals * No residue * No ozone depleting compounds * Inverta Spray Valve allows user to spray in an upright or inverted position. P/N 09-02013



LPS® LVC CONTACT CLEANER

Reduced VOCs (Volatile Organic Compounds). Conforms to CARB (California Air Resources Board) requirements for VOC emissions. * Fast evaporating * Ideal for electrical/electronic and fine parts * Cleans and degreases delicate precision mechanisms * Safe on plastics * Penetrating action removes oil, grease, dirt, flux and other contaminants * Does not contain chlorinated solvents * No residue P/N 09-02045



LPS® U-10 BRAKE CLEANER

* Low VOC (Volatile Organic * Compounds) content * Complies with CARB/OTC (California Air Resources * Board/Ozone Transport Commission) Rules * Instantly removes brake fluid, dust, grease and oil * Improves brake performance * Helps stop disc brake squeal * Powerful jet spray and high solvency * Can be applied without disassembling the brake unit * No ozone depleting chemicals * Fast evaporating * Does not contain toluene * Does not contain chlorinated solvents * No rinsing or no residue * 14oz. (397g) – aerosol P/N 09-02119



LPS 1® PREMIUM LUBRICANT

Provides a dry, thin lubricating film. Resists oil, dust and dirt build-up. Fast acting penetration. Displaces moisture Loosens rusted or frozen parts. Provides a short term, light corrosion resistant barrier. Nonconductive Ideal for delicate mechanisms. Used worldwide in aviation. Safe on paint and most plastics. Inverta Spray Valve allows user to spray in an upright or inverted position NSF® H2 registered .

11oz. (312g) – aerosol P/N 09-25900.....
1 gal. (3.78 l) P/N 09-26000.....



LPS 2® HEAVY-DUTY LUBRICANT

Strong, multi-purpose lubricant and penetrant with added corrosion-protection. Provides a nondrying, light, oily film for use on indoor/outdoor equipment. Reduces wear caused by friction and corrosion. Displaces moisture Loosens rusted or frozen parts. Provides up to one year of protection. Nonconductive Safe on paint and most plastics. Inverta Spray Valve allows user to spray in an upright or inverted position. NSF® H2 registered

11oz. (312g) – aerosol P/N 09-26100.....
1 gal. (3.78 l) P/N 09-26200.....



LPS 3® PREMIER RUST INHIBITOR

* Forms a transparent, soft, waxy film for protection & lubrication * Inhibits rust & corrosion, protects steel parts indoors for up to two years * Penetrates to displace moisture * Does not contain chlorinated solvents or silicone * Nonconductive * Safe on most surfaces * Stops rust and corrosion * Provides non-sling lubrication * Provides anti-seize coating * Safe to use on rubber, fabric, plastics and paints * Inverta Spray Valve allows user to spray in an upright or inverted position * NSF® H2 registered #129027: (aerosol); #059849 (bulk)

11oz. (312g) – aerosol P/N 09-26300.....
20fl. oz. (591ml) – trigger P/N 09-01223.....
1 gal. (3.78 l) P/N 09-26400.....



LPS® TAPMATIC® AQUACUT CUTTING FLUID

* Water-based formula * Excellent in high speed cooling applications * Nonflammable * Non hazardous * Does not contain sulfur, chlorinated solvents, chlorine or oils * Safe on all metals, except magnesium * Corrosion inhibitors prevent flash rusting * Provides fine finishes * Pleasant cinnamon scent * 16fl. oz. (0.473l) – bottles P/N 09-02132



LPS® QB PRECISION DUSTER

Patented formula – Patented US #6,342,471. Electrical contact cleaner. Cleans electrical parts without harming plastics. * Non-flammable * Plastic safe * Non-conductive * No residue * Replaces HCFC 141b contact cleaners * Fast evaporating * Conforms to CARB VOC requirements. 10 oz. spray can. P/N 09-26210



LPS® PRESOLVE® ORANGE DEGREASER

* High performance industrial cleaner that cleans on contact * Ideal for removing grease, tar, oil & adhesives * Fast acting, deep penetration * Natural based * Does not contain chlorinated solvents * Flash point above 100°F (38°C) * Non-conductive * Low residue * Safe on all metals and most plastics * Inverta Spray Valve allows user to spray in an upright or inverted position * NSF® C1 registered #129025: (aerosol); #059830: (bulk)

15oz. (425g) – aerosol P/N 09-00311.....
1gal. (3.78l) P/N 09-00312.....
5gal. (18.93l) P/N 09-00313.....



LPS® ZEROTRI® HEAVY-DUTY DEGREASER

* Penetrating action instantly removes oil, grease, wax, dirt, moisture, tar and other contaminants * Removes conformal coatings * No ozone depleting chemicals * Fast evaporating * Safe to use on most surfaces * Does not contain chlorinated solvents * No rinsing, no residue * Inverta Spray Valve allows user to spray in an upright or inverted position * NSF® C1 registered #059845: (aerosol); #059846: (bulk) * Canadian Food Inspection Agency (CFIA) approved

15 oz. spray.....P/N 09-26470



LPS T-91 NON-SOLVENT DEGREASER

T-91 Non-Solvent Degreaser is biodegradable, non-flammable, and has a neutral pH. T-91 is an excellent replacement for many solvent degreasers that have potential worker safety or flammability concerns. T-91 is ideal for solvent cleaning, part washers, and dip tanks and is more economical than most solvent degreasers in the marketplace. T-91 has an NSF® A1 registration (#141975) for use in food plants.

1 gallon.....P/N 09-02309.....
5 gallon.....P/N 09-02310.....

CS

CLEANERS — DEGREASERS

AVL LUBRICANTS & RUST INHIBITORS



AVL LIGHT - The premium light lubricant and rust inhibitor that penetrates and displaces moisture fast, leaving a delicate coating for excellent lubrication and rust protection. A fine, light film that resists the accumulation of dust and dirt. Ideal for drying and protecting electrical connectors and delicate machinery. Can sprays upright or inverted. P/N 09-02106

AVL MEDIUM - The premium medium lubricant and corrosion preventor is specifically designed to penetrate and displace moisture fast. It leaves a medium weight oily coating for long term lubrication and rust prevention. Can sprays upright or inverted. P/N 13-02963

AVL THICK - The premium thick lubricant and corrosion preventor penetrates and displaces moisture. It stops corrosion on contact leaving a thick coating for long term lubrication and corrosion prevention. Can sprays upright or inverted. P/N 13-02964

AVL NO CHLOR CLEANER/DEGREASER



The powerful flushing action and a high solvency formulation makes cleaning metal parts faster and easier. Penetrates quickly into hard to reach areas, cleaning thoroughly. AVL NO CHLOR Cleaner/Degreaser does not contain any 1,1,1 Trichloroethane or any solvents or CFCs known to deplete the stratospheric ozone layer. Evaporates quickly leaving no residue. Removes oil and grease on contact. This is the best non-chlorinated degreaser we have ever produced. 14 oz. P/N 13-02961

AVL ELECTRO CONTACT CLEANER

The premium aviation cleaner that penetrates fast, cleans and degreases, removes dust and dust buildup without leaving a noticeable film or oil residue. Both penetrate and dry quickly. Ideal for air and ground, electrical and avionics, and sensitive mechanisms. Non-flammable. P/N 13-02958



AVL FAST ACTING CLEANER/DEGREASER II



AVL Fast Acting Cleaner/Degreaser II is a highly concentrated solvent designed to remove dirt, grease, oil and grime from metallic and non-metallic surfaces. Cleaning is quick and simple without the danger of injury to working parts. Ideally suited for use on electronic motors even while running, electronic equipment, ignition systems, generators, power tools, etc. It is non-flammable and non-conductive so it can be used while motors and equipment are operating. Cleans & degreases very fast and dries quickly leaving little residue. P/N 13-02960

MACH #1 DEGREASER/CLEANER

A citrus scented degreaser and cleaner designed for the aircraft industry. This surface degreaser is non-irritating but will remove heavy encrustations. Mach #1 (formally known as Big Orange Plus) combines solvent power with an emulsifier system that removes hydraulic fluids, fuel stains, and exhaust soot. P/N 13-00031



AVL AIRCRAFT GLASS CLEANER



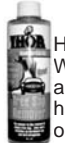
AVL glass cleaner is safe on all plastics and glass. It contains no ammonia. This foaming glass cleaner cleans and leaves a shiny finish with no residue. It easily removes bugs and grime from windshields and all surfaces. 15 oz. P/N 13-02959

CRAZY CLEAN ALL PURPOSE CLEANER

Crazy Clean is an all purpose cleaner which is excellent for removing fuel stains, exhaust stains, an dgrease and grime from your aircraft. Ideal fro removing bugs from leading edges. Crazy Clean produces a cinging foam which cleans and deodorizes and leaves a clean, not waxy surface. Keep a can in the airplane to use when travelling. Recommended by Aviation Consumer. 15 oz. aerosol can. P/N 09-00563



THOR TREE SAP REMOVER



Having a problem with those pine trees & Nasty bird droppings? Well we have the product for you Thor Tree Sap Remover is the answer to remove that sticky tree sap. Even more effective on hardened sap and Bird droppings. Very easy to apply, just pour it on a soft cloth towel apply it to the tree sap or bird droppings and watch it be removed with ease! P/N 09-01958



THOR AERO BRUSH

This a 10" foam block that is completely filled with a one threaded green nylon. This brush will effectively remove oil, grease, exhaust fumes, and other oily residues. 60" length metal handle not included, order separately.

Thor Aero Brush P/N 09-00897
Handle For Brush P/N 09-02097

EXTREME SIMPLE GREEN AIRCRAFT CLEANER



Unique cleaning & anti-corrosion chemistry delivers superior performance and materials-safety all in one. Cuts through tough, built up grease, oil, dirt, pollution, insect residue & impact soils. Gets its superior cleaning from a unique "triple play" cleaning formula. 2 high performance surfactants and new generation grease lifter/cutter combine to get the soil away from the aircraft surface quickly and keep it away so it can be cleanly rinsed away. Also able to go into oil/water separators and have oil break from solution. Extreme Simple Green's safety upon aircraft materials and precision cleaning surfaces comes from a combination of proven anti-corrosion agents. Time tested coupling agent allows these to work together to battle corrosion & hydrogen embrittlement. This makes it safe to put through pressure washing equipment, rack wash systems, dip tanks & parts washers, without any equipment damage.

32 oz..... P/N 09-00809 Gallon..... P/N 09-00810
5Gal..... P/N 09-01236 Spray..... P/N 09-01241
55 Gallon Drum P/N 09-01606



SIMPLE GREEN SAFETY TOWELS - Non-toxic and Biodegradable. Pre-moistened, quick and versatile with no color and no added scent. Non-abrasive and abrasive sides.09-01297

CRYSTAL SIMPLE GREEN INDUSTRIAL CLEANER/DEGREASER

- Use for equipment and machinery degreasing, parts washers and dip tanks, mechanized applicators. Non-toxic & biodegradable, non-abrasive & non-flammable.

24 oz. (Trigger Spray)..... P/N 09-01298
1 Gallon P/N 09-01299

SIMPLE GREEN HAND CLEANER GEL -

5 oz..... P/N 09-01301
1 Gallon (pump)..... P/N 09-01302



SIMPLE GREEN 30 GAL. PARTS WASHER - 15" depth soak basin at deepest point). Stainless steel workshelf, flex spigot & nylon flow-thru brushClean out plug for easy draining, includes filter kit and circulating pump. Overall dims: 36"L x 24"W x 39"H..... P/N 09-01303

SIMPLE GREEN 4-WAY PROPORTIONER -

SIMPLE GREEN FOAMING CRYSTAL INDUSTRIAL CLEANER/DEGREASER - Fragrance-free and color-free solution. P/N 09-01305

SIMPLE GREEN CONCENTRATED CLEANER/DEGREASER DEODORIZER

- Clean & deodorize grease filters/traps. 24 oz. (Trigger Spray) P/N 09-01306
1 Gallon P/N 09-01307



SIMPLE GREEN LIME SCALE REMOVER INDUSTRIAL/ INSTITUTIONAL DESCALER - Dissolves soap scum & mineral deposits. Deodorizes-contains no bleach, ammonia or phosphorus. Non-abrasive & non-flammable. Spray..... P/N 09-01308
Bottle..... P/N 09-01309

THOR AIRCRAFT CONCENTRATE



Thor Aircraft Concentrate is specifically formulated to dissolve the residue of exhaust, grease, dirt and oil. It is safe on all surfaces such as ferrous metals, aluminum, plastic, rubber, painted and unpainted surfaces. Also a non toxic, non-corrosive, non hazardous product. Use 1 to 2 quarts of product per 5 gal. of water, depending on how heavily soiled the aircraft is. P/N 09-02122

THOR BUG SPONGE



This product is designed to be used when wet, this foam like material will safely scrub away bugs, bird droppings and any other contaminants. It can be used on Plexi-glass and all painted surfaces. P/N 09-00898

THOR AERO DRY WASH



When you do not have access to water, this is the product for you. Simply spray it on and wipe it off. This unique product also has a polish in it to protect the painted surface. It also contains a corrosion inhibitor which protects the painted surface. Thor Aero Dry Wash is especially safe on plexiglass.

8oz..... P/N 09-01325
32oz..... P/N 09-01326

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CRC AVIATION MAINTENANCE PRODUCTS



CRC 3-36® MULTI PURPOSE LUBRICANT



A multi purpose lubricant and corrosion inhibitor specifically designed for use around modern plastics. Applications Include: • Seat and cargo tracks • Landing Gear • Lower fuselage interior • Faying surface and crevices • Wing interior surfaces • Entry door horizontal stabilizers • Ground support equipment. Not for use on energized equipment.
16 oz.P/N 09-39600



CRC ULTRA-LITE LUBE

CRC ULTRA-LITE LUBE is an ultra-thin, non-staining dry film lubricant that resists oil dust and dirt buildup. It penetrates into the most minute openings, sealing out moisture and preventing corrosion. Applications include: • Specially formulated for use around modern plastics, polycarbonates, ABS and NORYL • Insulators • Enclosures • Delicate components • Penetrates through rust and scale • Loosens seized mechanisms and frozen parts. Not for use on energized equipment.
16 oz.P/N 09-39602



CRC POWER LUBE®

A unique lubricant that incorporates a sophisticated additive package with Teflon® to provide long lasting protection against friction and wear. Applications include: • Hinges • Motors • Bearings • Cables • Chains • Rollers • Locks • Guide Bars • Pulleys • Sliding surfaces • Valves • Gears • Ball & socket joints • Linkages • Taps and dies • Air power tools • Cutting tools • Precision tools • Chain drives • Sliding mechanisms • Sprockets. Not for use on energized equipment.
10 oz.P/N 09-39605



CRC PRECISION CONTACT CLEANER

A Revolutionary new precision cleaning solvent designed to meet today's environmental challenges. This high-purity solvent is a chemically stable HCFC and does not exhibit the same ozone depleting properties as conventional solvents. It evaporates rapidly and has no flash point and leaves no residue. Applications include: • Computers • Delicate avionics • Oxygen & other pressurized gas systems • PC boards • Radios • Radar equipment • Contacts and switches. Do not use on polycarbonate or Noryl type plastics. Not for use on energized equipment.
16 oz.P/N 09-39617



CRC QUICK DRY CONTACT CLEANER

An alcohol-based precision cleaner that is 100% free of CFCs. Ideal for applications where lower flashpoint solvents may be used. It evaporates rapidly and completely and is harmless to most plastics. Applications include: • Switchgears • Circuit breakers • Telecommunication equipment • Fusible connecting devices • Motors • Generators • Relays • Terminals • Rheostats • Instrumentation • Communications equipment. Not for use on energized equipment.
16 oz.P/N 09-39620



CRC PAINT & DECAL REMOVER

A solvent-based, high strength cleaner that effectively loosens and helps remove paint, adhesives and sealants. It helps protect equipment surfaces by eliminating damage caused by excessive scraping. Applications include: • Dissolves and aids removal of paints, lacquers, adhesives and varnish • Removes graffiti from metal and stone • Removes conventional and formed-in-place gaskets on motors, pumps & flanges. Not for use on energized equipment.
16 oz.P/N 09-39622



CRC AVIATION WINDOW CLEANER

A modern blend of detergents and corrosion inhibitors designed to safely clean aircraft glass, plexiglass and other surfaces (pH 10.6±0.5). Applications include: • Windows • Interior surfaces • Galley areas • Overhead compartments. Not for use on energized equipment.
16 oz.P/N 09-39630



AVIATION DEGREASER

Aviation degreaser is a halogenated solvent-based cleaner/degreaser that is chemically stable and extremely effective in heavy duty cleaning applications. It is fast-acting, non-flammable, and evaporates quickly leaving no residue. Extremely effective solvent for cleaning and removing corrosion inhibiting compounds. Contains no HAPs. Removes carbon buildup. High dielectric strength of 26,800 volts. Degreases and cleans aviation surfaces to allow for east visual inspection. Cleans and prepares metal surfaces for painting on adhesive bonding. Evaporates fast leaving no residue. Non-flammable, non-staining and non-corrosive. Applicatons: Fuselage • Wheel wells • Electric motors • Firewalls • Nocelles • Generators • Nosegear • Ground support equipment • airframe exterior surface
20 oz. aerosol.P/N 09-39690



CRC SUPER DEGREASER

A revolutionary alternative to 1,1,1 Trichloroethane and other chlorinated solvents. Now you can give up chlorinated solvents without giving up cleaning power. A unique, scientifically formulated cleaner and degreaser that effectively removes grease, oil, dirt and other contaminants from motors, parts and equipment. Applications include: • Exhaust trails • Hinges • Antenna mounts • Static tubes • Wheel wells • Struts & tubes • Galleys • Seat tracks • Cargo doors • Cargo tracks. Not for use on energized equipment.
20 oz.P/N 09-39642



CRC CORROSION SHIELD

A long-term corrosion inhibitor that provides extended protection for all metal parts and assemblies, both in storage and during shipment. Its thin, nondrying film protects better than many thicker, waxy films, and is easily removed with solvent cleaners. The unique overlapping plating action provides unequalled protection for planed surfaces and sharp edges. Applications include: • Seat and cargo tracks • Landing gear, wheel wells & keel beam • Fuselage structure • Wing to body fairing • Pins • Hinges • Wing front & rear spar • Lower fuselage interior • Wing interior structure • Horizontal stabilizer • Ground support equipment • Chains and cables • Air conditioning ducts • Lap joints • Skin panel edges • Emergency escape hatches • Bulkheads • Entry and cargo doors. Not for use on energized equipment.
20 oz.P/N 09-39655



CRC CORROSION SHELL

A long-term indoor and outdoor corrosion inhibitor for machined surfaces and assemblies subjected to long periods of storage or adverse conditions during shipment. Its firm, waxy film is highly resistant to humidity and salt spray and never becomes brittle. Petroleum solvents may be used to dilute the product to vary the film thickness or to remove it after application. Applications include: • Completed assemblies • Seat tracks • Chains and cables • Landing gear • Wheel wells • Faying surfaces • Air conditioning ducts • Lap joints • Skin panel edges • Fuselage • Landing gear and bilges • Emergency escape hatches • Bulkheads • Entry & cargo doors. Not for use on energized equipment.
16 oz.P/N 09-39657

CS

LUBRICANTS

LOCTITE THREADLOCKER



Loctite Threadlocker used on a standard fastener can eliminate expensive locking devices while you increase the reliability and quality of your assembly. One drop prevents loosening. 2 removable strengths for large & small applications and permanent strength for locking parts you never want to take apart.

- #222 Threadlocker (permanent, for small screws)
10 ml..... P/N 09-42605..... 50 ml..... P/N 09-42610.....
- #242 Threadlocker (removable, for large screws)
10 ml..... P/N 09-42615..... 50 ml..... P/N 09-42620.....
- #262 Threadlocker (permanent, for large screws)
10 ml..... P/N 09-42625..... 50 ml..... P/N 09-42630.....

PARKER-O-LUBE



Excellent for use on exposed valve plungers, cylinder rods, and other o-rings. It lubricates without causing deterioration of rubber and is water resistant. Good for low pressure vacuum and pneumatic systems.

- 4 oz. tube..... P/N 05-00773.....

SEALUBE



Anti-seize sealer for threaded aluminum alloy parts exposed to gasoline, oil, water, air or vacuum. Good lubricating qualities. Will not harden or set. Will not freeze joints at low temperatures. Non-corrosive, insoluble in gasoline, oil or water.

- 1 Lb. Can P/N 09-25200.....

BAKERSEAL



Thread sealing and lubricating compound. Contains Teflon. Prevents thread leaks with fluids and gases up to 600°F. Recommended for gasoline and aircraft oils. Superior to Teflon tape and much easier to use. 8 oz. jar.

- P/N 09-00346.....

LUBRIPLATE NO. 630AA



Multi-purpose lubricant. Forms a wearing film on working surfaces. Excellent protection against rust and corrosion. Recommended for controllable pitch props, wheel and magneto bearings, general greasing.

- 14 oz. Can..... P/N 09-25400.....
- 6 Lb.. Can..... P/N 09-25500.....

EZ TURN LUBRICANT (FUELUBE)



EZ Turn is a specialty lubricant/sealant used for fuel and oil line valves and is resistant to high temperatures. It is especially effective where high octane fuels and aromatics are present. EZ Turn is also extremely efficient as a gasket paste and anti-seize agent. EZ Turn will not gum, crack or dry out. Each shipment is independently tested. Excellent for tapered plug valves, aircraft engine manufacturing, and marine applications. EZ Turn is the functional equivalent of fuel lube.

- 5 oz. tube..... P/N 09-00306.....
- 1 Lb. can..... P/N 09-00180.....

PERMATEX ANTI-SEIZE LUBRICANT



Prevents galling, seizing and corrosion of metal parts from 65°F to 2000°F. Acts as a low speed lubricant and maintains a corrosion-resistant coating at high temperatures. Makes aluminum and stainless steel joints disassemble quickly, easily. Excellent lubricant for press fit assembly. Works on industrial engine parts, boilers, outdoor motors, cables and internal combustion engines. Conforms to MIL-A-907D. Improves reliability at high temperatures. Saves time, labor.

- 1 oz. tube P/N 09-28410.....

MICROLON PRECISION OILER



This oiler has the famous Microlon resin suspended in a light-weight oil to lubricate, penetrate and prevent rust. It is excellent for lubricating bearings, threaded parts, hinges, pocket knives, chains, rollers, fishing gear, chain saws, guns, garage doors..... just about anywhere that friction causes noise and resistance. Furnished in a handy pen size oiler with a pocket clip. .25 Fluid Ounces.

- P/N 09-00756.....

WD-40 PENETRANT/LUBRICANT



Displaces moisture on any metal surface, preventing rust, corrosion or oxidation of the surface. Used on switches pulleys, wheel housings, seam areas. Non-gumming, non-conductive—safe for all electrical systems. Conforms to specification C-234

- 11. 12 oz. Spray P/N 09-00347.....

DRY GRAPHITE SPRAY NO. 5200



Provides a uniform dry lubricant film of non-abrasive graphite for any metal surface. Can be used alone or with fluid lubricants. Used in engine overhaul, on struts, gears, tracks. Meets MIL-G-26548. DGF-123

- 11 oz. Spray..... P/N 09-25600.....

TRI-FLO TEFLON LUBRICANT



Penetrating lubricant with Teflon, corrosion inhibitors, moisture displacers and solvents to soften and remove dirt and corrosion. Will not cause corrosion. Use on aircraft cabin door hinges, landing gear hinges and struts. Loosens rusted bolts and other fasteners. 12oz. aerosol can

- P/N 09-42540.....

FOAMING SUPERIOR LUBRICANT



Tri-Flow is revolutionizing the way you clean, protect and lubricate all of your moving parts with the introduction of Foaming Superior Lubricant and Foaming Citrus Cleaner Degreaser. Tri-Flow's powerful foaming action clings to both horizontal and vertical surfaces to allow for deep penetration and accurate application. Tri-Flow Foaming products are ideal for use on bicycles, firearms, sporting equipment, manufacturing equipment, and more!

- P/N 09-02082.....

LIQUID WRENCH



A powerful blend of quick acting solvents to free parts frozen by rust, corrosion or paint. Harmless to metals. 11 oz. Aerosol

- Spray..... P/N 09-25800.....

F-900 "TORQUE SEAL"



Inspection Lacquer is used in production on compression fittings, studs, nuts, parts, and assemblies after they are in proper torque or position. Widely used as "Anti-Sabotage Lacquer". Inspectors can visually detect any movement or tampering; Torque Seal becomes brittle and will crack. Excellent adhesion to all metals and to most other surfaces. Dries fast. Torque Seal is packaged in convenient 1/2 oz. poly squeeze tubes. Available in 4 high visibility.

- Yellow P/N 09-25807.....
- Blue P/N 09-25809.....
- Green P/N 09-25808.....
- Orange..... P/N 09-25810.....
- Red P/N 09-02033.....

F-1000 SENTRY SEAL



Used on compression fittings, studs, nuts, parts and assemblies after they have been set to proper tension or position. Service personnel or inspectors can quickly spot any changes or tampering with equipment. Sentry Seal has excellent adhesion to metals, including aluminum, magnesium, titanium, stainless and copper, and is non-corrosive to these metals. It is packaged in handy metal tubes. Squeeze the tube to extrude the Sentry Seal through the small hole to form a bead (narrow stripe) across the parts. The surface dries in about one minute, then it will start to polymerize and become brittle as it dries completely. Available in blue.

- P/N 09-28512.....

LOGO DECALS

AUTHENTIC AIRCRAFT LOGO DECALS

Our full line of authentic aircraft logos are produced on state-of-the-art long lasting UV coated pressure sensitive adhesive vinyl. They are precision cut by a specially programmed computer and have no clear background. Other brands of decals can be produced cheaply but the clear background tends to yellow, rendering unsightly over time. With our custom cut decals, only the letters themselves go on the aircraft giving the lettering a truly professional look which will last as long as the aircraft paint. Please order by part number shown. Many other logos and styles are available, as well as other colors. Call for quotation or send \$2.00 for our complete logo and decal catalog. For quote on custom logo decals, send sketch and details. **FOR OTHER LOGOS AVAILABLE. Send \$. FOR COMPLETE LOGO AND DECAL CATALOG P/N 09-43736**



5.75" h x 13.25" w
Black...09-43502
White...09-43504

DECATHLON

1-5/8" h x 10-3/4" w
Black...09-43506
White...09-43508



Black, Gold, White
6" h x 8.75" w
09-43509 pr.

Citabria

2" h x 9-1/2" w
Black.....09-43516
White.....09-43518
..... ea



Black.....09-43519
White.....09-43522
Red.....09-43524
Blue.....09-43526
6" h x 10.5" w /pr



Black.....09-43528
White.....09-43529
Red.....09-43532
Blue.....09-43534
6" h x 10.5" w pr

Cessna

Black.....09-43536
White.....09-43538
2" h x 10.5" w ea

CESSNA

Black.....09-43540
White.....09-43542
Gold.....09-43544
2" h x 8.25" w ea.



Black.....09-43546
White.....09-43548
4-1/4" h x 10" w ea.

SKYLANE

Black.....09-43550
White.....09-43552
1.75" h x 10" w ea.

SKYLANE

Black.....09-43554
White.....09-43556
2.25" h x 8.5" w ea

SKYWAGON 130

Black.....09-43558
Silver.....09-43560
1.25" h x 14.5" w ea

CENTURION

Black.....09-43562
White.....09-43564
1.5" h x 15.5" w ea



Gold.....09-43566
6.25" Diameter pr

Turbo CENTURION II

2.937" h x 18.75" w
Black.....09-43568
White.....09-43570
..... ea

SKYHAWK

Black.....09-43572
White.....09-43574
1.5" h x 13" w ea



Black.....09-43576
White.....09-43578
4.5" h x 9.5" w ea



17.5" h x 8.875" w
Gold Bkgrnd, Black Border
P/N 09-43580 pr.



Black.....09-43582
White.....09-43584
5" h x 8.75" w ea.

Mooney

Black.....09-43586
White.....09-43588
1.75" h x 8" w ea.



Small Black.....09-43587
Small White.....09-43589
4" h x 10" w pr.

Large Black.....09-43591
Large White.....09-43593
7.75" h x 19" w pr.



Full Color.....09-43598
8.5" h x 7.75" w ea



Full Color
09-43500 ea
1-Color
09-43602 ea
2-1/2" h x 5-1/4" w

PIPER

Black.....09-43604
White.....09-43606
2" h x 8.75" w ea



Black.....09-43608
White.....09-43609
2.5" h x 11.25" w ea

CHEROKEE 140

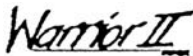
Black.....09-43612
White.....09-43614
1.5" h x 11-3/8" w ea

CHEROKEE 140 D

Black.....09-43616
White.....09-43618
1.5" h x 12.5" w ea



Black.....09-43619
White.....09-43622
2.75" h x 10" w ea



Black.....09-43624
White.....09-43626
3" h x 11" w ea



Black.....09-43628
White.....09-43629
2.75" h x 6-1/8" w ea

CHEROKEE SIX E

Black.....09-43632
Silver.....09-43634
1.5" h x 13" w ea

Comanche C

Black.....09-43636
White.....09-43638
1.25" h x 12.75" w ea



Red&Black w/Silver Bkgrnd
09-43640
2-1/8" x 6 1/2" ea

Super Cub

Black.....09-43642
White.....09-43644
1.5" h x 7.75" w ea

Beechcraft

Black
09-43646 ea
White
09-43648 ea
Gold
09-43650 ea
4-1/8" h x 13-1/2" w

Baron

Black.....09-43652
White.....09-43654
3" h x 7" w ea

Bonanza

Black.....09-43656
White.....09-43658
3" h x 9" w ea



Black.....09-43660
White.....09-43662
2.5" h x 8.5" w ea



Blue on Silver.....09-43664
2.5" h x 7" w ea

MAULE

Black.....09-43666
White.....09-43668
2-7/8" h x 17" w ea

TURBO

Black.....09-43670
White.....09-43672
2.5" h x 17-3/8" w ea

Black.....09-43674
White.....09-43676
1" h x 10-7/8" w ea



Black.....09-43678
White.....09-43680
4" h x 12" w ea

SPECIAL

Black.....09-43682
White.....09-43684
1" h x 5" w ea



Black.....09-43686
White.....09-43688
2.5" h x 18-5/8" w ea.

GLASAIR III

Black.....09-43690
White.....09-43692
2.25" h x 17" w ea

GLASAIR

Black.....09-43694
White.....09-43696
2.75" h x 15.75" w ea



Black.....09-43698
White.....09-43700
2.5" h x 8.75" ea

PULSAR

Black.....09-43702
White.....09-43704
3" h x 14.5" w ea

RANS

Black.....09-43706
White.....09-43708
2" h x 9.5" w ea



Black.....09-43709
White.....09-43712
3.25" h x 8.75" w ea

Stearman

Black.....09-43718
White.....09-43719
4" h x 19" w ea



Black.....09-43722
White.....09-43724
Gold outline on both.
3" h x 5.5" w ea



09-43728
(Black, Red, Gold)
2-3/8" h x 14.25" w ea



Small: 4" H x 8" W
Left.....09-43732-1.....
Right..09-43732-2.....

Large: 6" H x 12" W
Left.....09-43734.....
Right..09-01955.....

CS

LOGO DECALS



3" 09-43740 ea
 4.5" 09-43741 ea
 Not available in lefts and rights only
 available as shown.



Full Color 09-43748
 2" h x 6.75" w ea



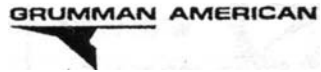
Black & Silver 09-43751
 1.25" h x 8-3/8" w ea



Black 09-43752
 4-7/8" h x 12-7/8" w ea



09-43755(White) ea.



Black 09-43756
 White 09-43757
 3.5" h x 16-5/8" w ea



Black 09-43758
 White 09-43759
 5/8" h x 8.25" w ea



Black 09-43742
 White 09-43743
 1" h x 4.25" w ea



Black 09-43744
 White 09-43745
 5" h x 12" w ea



Full Color-screened 09-43764
 8.25" h x 9" w ea



Black, Grey, White, Red. 09-02103
 6" h x 1.5" w ea



Black 09-43746
 2.25" h x 6.75" w ea



Black 09-43780
 White 09-43781
 9.25" h x 23.5" w ea



Black 09-43782
 3.25" h x 3.25" w ea



Left, Black 09-43784
 Right, Black 09-43785
 5.25" h x 5-3/8" w ea



Black 09-43788
 8" h x 16" w ea



White 09-43791
 2-1/8" h x 8.25" w ea



Black 09-43792
 9-7/8" h x 46.75" w ea



Black 09-43796
 White 09-43797
 3-3/8" h x 11.5" w ea



Black & Silver 09-43798
 2.5" h x 12" w ea



Black 09-43800
 White 09-43801
 1" h x 9-1/8" w ea



Black 09-43802
 1.5" h x 13" w ea



Black 09-43806
 5.75" h x 13.25" w ea



Black 09-43808
 White 09-43809
 2.5" h x 12.75" w ea



Black 09-43811
 1" h x 10" w ea



Left, Black 09-43813
 Right, Black 09-43814
 Left, White 09-43816
 3" h x 3.5" w ea



Black 09-43774
 4-3/8" h x 10" w ea



Black 09-43778
 White 09-43779
 4-3/8" h x 10" w ea



Black 09-43822
 White 09-43823
 1.75" h x 8.75" w ea



Left, Black 09-43824
 Right, Black 09-43826
 Left, White 09-43827
 Right, White 09-43828
 4-3/8" h x 5-7/8" w ea



Black 09-43829
 White 09-43831
 2.75" h x 19" w ea

Left, Black 09-43832
 Right, Black 09-43833



1.5" h x 11.75" w ea.



Left, Black 09-43837
 Right, Black 09-43838
 1.5" h x 7.5" w ea



Black 09-43841
 White 09-43842
 1.5" h x 7.5" w ea



Black 09-43843
 2" h x 12.5" w ea



Black & Gold 09-43845
 2.5" h x 10.5" w ea



Black 09-43749
 White 09-43750
 3.5" h x 7.5" w ea



Black 09-43848
 White 09-43849
 1.25" h x 8.5" w ea



Black 09-43850
 White 09-43851
 5" h x 20" w ea



Black 09-43852
 White 09-43853
 1" h x 14.25" w ea



Black 09-43765
 White 09-43766
 3" h x 6.75" w ea

CS

LOGO DECALS

CENTURION

CL-311-1-3/16" h x 10-3/4" w
P/N 09-43981 (Blk)
P/N 09-43982 (Wh)
. ea.

stationair

CL-137 - 1-1/2" h x 14-1/2" w
P/N 09-43983 (Blk)
. ea.

SKYMASTER

CL-359 - 1-1/2" h x 11-1/2" w
P/N 09-43985 (Blk)
P/N 09-43986 (Wh)
. ea.

SKYMASTER 337

CL-179 - 1-1/2" h x 15-1/8" w
P/N 09-43987 (Blk)
. ea.

Golden Eagle

CL-126 - 2-1/2" h x 13-5/8" w
P/N 09-43989 (Blk),
. ea.

421 GOLDEN EAGLE

CL-299L&R - 1-5/8" h x 24" w
09-43992 (Blk)
09-43994 (Gd)
. ea.

CHRISTEN HUSKY

CH-060 - 3/4" h x 7-1/4" w
P/N 09-43997 (Blk)
P/N 09-43998 (Wh)
. ea.



CR-031 - 6-3/8" h x 12" w
P/N 09-43999 (Blk)
P/N 09-44001 (Wh)
(up to 15" w)
. ea.

EXTRA 200

ET-001 - 1-3/4" h x 15-1/2" w
P/N 09-44002 (Blk)
P/N 09-44003 (Wh)
. ea.

EXTRA 300

ET-002 - 1-3/4" h x 15-1/2" w
P/N 09-44004 (Blk)
P/N 09-44006 (Wh)
. ea.



FU-002 - 4-3/4" h x 16-1/2" w
P/N 09-44007 (Blk)
P/N 09-44008 (Wh)
. ea.



GL-002L&R - 4-1/2" h x 15" w
(Full Color on Tail)
P/N 09-44009
. ea.

GULFSTREAM

GL-016 - 3/4" h x 5-1/2" w
P/N 09-44011 (Blk)
. ea.

Learjet

LE-001 - 3-1/8" h x 10-1/4" w
P/N 09-44013 (Blk)
P/N 09-44014 (Wh)
. ea.

Meyers 200

MR-001 - 1" h x 5-1/2" w
P/N 09-44016 (Blk)
P/N 09-44017 (Wh)
. ea.



ML-053L&R - 1-1/2" h x 9" w
P/N 09-44018 (Blk)
. ea.

Mooney 201

ML-037 - 1-1/4" h x 8-3/4" w
(Black, White or OPT. Wing Tip)
P/N 09-44021 (Blk)
P/N 09-44022 (Wh)
. ea.

Turbo Mooney 231

ML-017 - 1-3/4" h x 18" w
P/N 09-44023 (Blk)
. ea.



ML-012 - 1-1/2" h x 4-1/4" w
P/N 09-44026 (Blk)
P/N 09-44027 (Wh)
. ea.



NL-004 - 3-1/4" h x 12" w
P/N 09-44028 (Blk)
P/N 09-44029 (Wh)
. ea.

Tal Pacer

PL-128 - 2-1/4" h x 18-1/2" w
P/N 09-44031 (Blk)
P/N 09-44032 (Wh)
. ea.

LANCE

PL-248 - 1-1/2" h x 10" w
P/N 09-44033 (Blk)
. ea.

LANCE II

PL-073 - 1-5/8" h x 14-1/4" w
P/N 09-44036 (Blk)
P/N 09-44037 (Wh)
. ea.

APACHE

PL-116 - 2-3/8" h x 10-7/8" w
P/N 09-44038 (Blk)
P/N 09-44039 (Wh)
. ea.

aztec

PL-058 - 1-3/4" h x 3-1/2" w
P/N 09-44041 (Blk)
P/N 09-44042 (Wh)
. ea.

DAKOTA

PL-0191 - 1/8" h x 9-1/2" w
P/N 09-44043 (Blk)
. ea.

SEMINOLE

PL-020 - 1-1/2" h x 15" w
P/N 09-44046 (Blk)
. ea.

NAVAJO

PL-091 - 3" h x 23-1/2" w
P/N 09-44048 (Blk)
. ea.

CHIEFTAIN

PL-083 - 2" h x 20-5/8" w
P/N 09-44051 (Blk)
. ea.



RL-018 - 6-1/2" h x 7" w
P/N 09-44053 (Blk)
. ea.

Commander 112

RL-027 - 3" h x 21-1/2" w
P/N 09-44056 (B/W)
. ea.

Commander 112B

RL-016 - 3" h x 16-1/2" w
P/N 09-44058 (B/G)
. ea.

Commander 112TC

RL-025 - 2-7/8" h x 22-1/2" w
P/N 09-44061 (B/W)
. ea.

VELOCITY

VL-005 - 3" h x 13" w
P/N 09-44063 (Blk)
P/N 09-44064 (Wh)
. ea.



WL-004 - 3-1/4" h x 15-1/4" w
P/N 09-44066
(Black, Gold, & Red)
. ea.

Barracuda

HB-017 - 2" h x 2-1/2" w
P/N 09-44069 (Blk)
. ea.

COYOTE

HB-038 - 2-1/4" h x 12" w
(Wing Tip) 09-44072 (Blk),
. ea.



HB-139 - 3-3/4" h x 19" w
P/N 09-44076 (Wh)
. ea.



HB-124 4- 1/2" h x 16-1/2" w
P/N 09-44077 (Blk)
P/N 09-44078 (Wh)
. ea.



HB-126 - 8" h x 24-1/4" w
P/N 09-44079 (Blk)
P/N 09-44080 (Wh)
. ea.

KITFOX

HB-023 - 1" h x 4-1/4" w
P/N 09-44082 (Blk)
. ea.



HB-027 - 2-1/2" h x 12" w
P/N 09-44084 (Blk)
. ea.



HB-102 - 2-1/2" h x 14-3/4" w
P/N 09-44087 (Blk)
P/N 09-44088 (Wh)
. ea.



HB-046 - 3-1/8" h x 10-7/8" w
P/N 09-44089 (Blk)
. ea.



HB-090 - 3-1/4" h x 12-1/2" w
P/N 09-44091 (Blk)
. ea.



HB-125 - 2-1/2" h x 8-1/2" w
P/N 09-44093 (Blk)
P/N 09-44094 (Wh)
. ea.



HB-104 - 5-1/2" h x 28" w
P/N 09-44097 (Multi-color)
. ea.

RANS S7

HB-057 - 3-1/4" h x 25-1/4" w
P/N 09-44101 (Blk)
. ea.

RANS S10

HB-057 - 3-1/4" h x 25-1/4" w
P/N 09-44103 (Blk)
. ea.



HB-098L&R - 5-1/4" h x 13" w
P/N 09-44106 (Blk)
P/N 09-44107 (Wh)
. /pr



HB-097L&R - 5-1/4" h x 13" w
P/N 09-44108 (Blk)
P/N 09-44109 (Wh)
. ea.



HB-096L&R - 5-1/4" h x 13" w
P/N 09-44111 (Blk)
P/N 09-44112 (Wh)
. ea.



HB-015 - 3" h x 6-1/2" w
P/N 09-44113 (Blk)
. ea.



HB-016 - 2" h x 12" w
P/N 09-44116 (Blk)
. ea.



HB-035 - 1-1/4" h x 6-7/8" w
P/N 09-44118 (Blk)
. ea.

ZENAIR

HB-065 - 1-1/4" h x 8-1/2" w
P/N 09-44121 (Blk)
P/N 09-44122 (Wh)
. ea.

ROBERTSON/STOL

MS-070 - 2-1/2" h x 20" w
P/N 09-44126 (Blk)
. ea.



MS-050 - 3-1/2" h x 3-1/2" w
09-44128 (Blk)
. ea.





MS-061 - 3" h x 3-1/2" w
P/N 09-44131
White lettering on red.
. ea.



MS-061 - 3" h x 3-1/2" w
P/N 09-44133 (Rd)
P/N 09-44134 (Wh)
. ea.

LOGO DECALS

 AC-001 - 7" h x 8" w
P/N 09-01967
White, Blue, & Yellow
. ea

 AC-002 - 7" h x 8" w
P/N 09-43221
White, Red, & Black
. ea

CHAMP

AL-007 - 1" h x 8-1/8" w
. ea

P/N 09-43922 (Blk), 09-43923 (Wh), 09-43926 (Silver)

Sundowner

BE-021- 1/2" h x 12" w
. ea

P/N 09-43927 (Blk), 09-43928 (Wh)

Sierra

BE-030- 4.75" h x 14.5" w
. ea

P/N 09-43929 (Blk)

Decathlon

BL-065 - 2" h x 10-7/8" w
. ea

P/N 09-43932 (Blk), 09-43933 (Wh)

BELLANCA SUPERVIKING

BE-005 - 1.5" h x 18" w
White Left & Right (pair)

P/N 09-43936

(Gold Wing Black type) Right side

P/N 09-43934


8" h x 7-3/4" w
P/N 09-43939
(Black, Red, Blue)


. ea


P/N 09-43940 (Black)

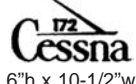
. ea


 CL-089
2" h x 3-3/4" w
P/N 09-43941
(Full Color)
. ea


 CL-225 - L & R
P/N 09-43942 (Blk)
P/N 09-43943 (Wh)
6" h x 10-1/2" w
. /pr


 CL-071 - L & R
P/N 09-43944 (Blk)
P/N 09-43945 (Wh)
6" h x 10-1/2" w
. /pr


 CL-071 - L & R
P/N 09-43946 (Blk)
P/N 09-43947 (Wh)
6" h x 10-1/2" w
. /pr


 CL-257L & R
P/N 09-43948 (Blk)
P/N 09-43949 (Wh)
6" h x 10-1/2" w
. /pr

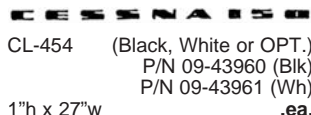
 CL-112L & R
P/N 09-43950 (Blk)
P/N 09-43951 (Wh)
6" h x 10-1/2" w
. /pr

 CL-340 - L & R
P/N 09-43952 (Blk)
P/N 09-43953 (Wh)
6" h x 10-1/2" w
. pr.

 CL-214 - L & R
P/N 09-43954 (Blk)
P/N 09-43955 (Wh)
6" h x 10-1/2" w
. pr.

 CL-487 - L & R
P/N 09-43956 (Blk)
. pr.

 CL-032L & R
P/N 09-43958 (Blk)
P/N 09-43959 (Wh)
6" h x 10-1/2" w
. pr.

 CL-454 (Black, White or OPT.)
P/N 09-43960 (Blk)
P/N 09-43961 (Wh)
1" h x 27" w
. ea.

CESSNA 206

CL-164 (Black, White or OPT.)
P/N 09-43962 (Blk)
P/N 09-43963 (Wh)
1-1/2" h x 15-1/2" w
. ea.

CESSNA 310

CL-297 (Black, White or OPT.)
P/N 09-43964 (Blk)
1-1/2" h x 10-1/4" w
. ea.

CESSNA 340

CL-327 P/N 09-43966 (Blk/Wh)
P/N 09-43967 (Blk/Gd)
2" h x 3-3/4" w
. ea.

 CL-178 P/N 09-43968 (Black)
P/N 09-43969 (Silver)
1-1/8" h x 9" w
. ea.

SKYHAWK II

CL-102 (Black, White or OPT.)
P/N 09-43972 (Blk), P/N
09-43973 (Wh)
1/3/4" h x 11-1/2" w
. ea.

Superhawk

P/N 09-43977 (Blk),
P/N 09-43978 (Wh)
4" h x 12.5" w
. ea

AMERICAN FLAG DECALS

Sold In Pairs Only



STRAIGHT
P/N 09-429--



SLANTED
P/N 09-430--

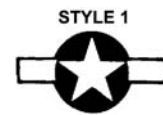


WAVY
P/N 09-431--

| HGT. | STRAIGHT | | SLANTED | | WAVY | |
|------|----------|-------|---------|-------|-------|-------|
| | WIDTH | PRICE | WIDTH | PRICE | WIDTH | PRICE |
| 4" | 7.5" | . | 7-1/2" | . | 4" | . |
| 6" | 10.5" | . | 10-3/4" | . | 6" | . |
| 8" | 14" | . | 14-1/2" | . | 8" | . |
| 10" | 17.5" | . | 18-1/4" | . | 10" | . |
| 12" | 20.5" | . | 21-1/4" | . | 12" | . |

Please order by part number. Use basic part number at top of chart, and complete part number with height of decal. Example: Wavy flag, 8" high is P/N 09-43108. Prices per pair (left & Right).

STARS & BARS



STYLE 1

1943

Between 29 June and 14 August, the official national insignia incorporated white sidebars and an overall red surrounding.



STYLE 2

1943-1947

The red surround of the official insignia was quickly changed to a blue surround. During its 4 years use this insignia appeared on more aircraft than all its predecessors combined.



STYLE 3

1947-Present

With the reorganization of the Defense Department and the creation of the USAF, red bars were added to the official national insignia. A variation of this insignia appears officially without the blue surround on F-15 aircraft.

P/N 09-432--

P/N 09-433--

P/N 09-434--

STYLE 4A STYLE 6A



1917, 1921-1941 1942-1943
Some aircraft in the American entry into World War I and officially adopted after the war.

PRICING

| SIZE | Style 1 | Style 2 | Style 3 | Style 4A | Style 6A |
|------|---------|---------|---------|----------|----------|
| 10" | . | . | . | . | . |
| 15" | . | . | . | . | . |
| 20" | . | . | . | . | . |
| 25" | . | . | . | . | . |
| 30" | . | . | . | . | . |
| 35" | . | . | . | . | . |

Please order by part no. Use basic part no. under each style number and complete part no. with size of decal. Example: Style 3 decal in 25" size is P/N 09-43425

CESSNA Piper

Size 2-1/2" x 15" Size 2-1/2" x 11"

Distinctive aircraft identification names, either stencils for painting or black vinyl lettering for easy press-on application.

| Aircraft | Vinyl | | Stencils | |
|----------|----------|-----------|----------|-----------|
| | Part No. | Price/Set | Part No. | Price/Set |
| Cessna | 09-33800 | . | 09-33900 | . |
| Piper | 09-34000 | . | 09-34100 | . |

PROPELLER DECALS

Sold In Pairs Only



09-42830 pr.



09-42832 pr.



09-42834 pr.



09-42836 pr.



09-42838 pr.



09-42840 pr.

CS

DECALS - PLACARDS



U.S. FLAG DECALS

Proudly display the Red, White, & Blue. Colorful vinyl pressure-sensitive U.S. Flag decals in right & left hand pattern.

- 2.5" x 4".....P/N 13-01485
- 4" x 6.5".....P/N 09-35400
- 6" x 10.5".....P/N 09-35500

AIRCRAFT SPRUCE LOGO DECALS



These royal blue on white self-adhesive oval shaped decals of the Aircraft Spruce & Specialty Company logo look great on your airplane, bumper, reference

books, etc. Available in 3 sizes.

- 4" wide P/N 09-40400FREE
- 8" wide P/N 09-40410FREE
- 18" wide P/N 09-40420FREE



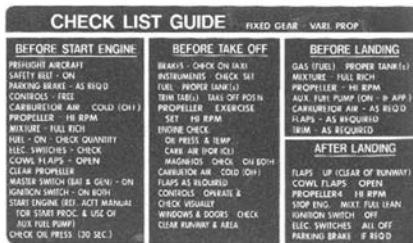
AIRCRAFT SPRUCE PATCH

This is an embroidered patch, oval in shape, and approximately 3-1/2", colors are Red/White/Blue.....P/N 13-02703.....

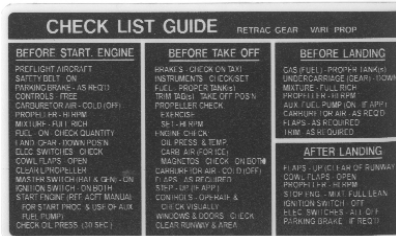
CHECKLIST PLACARDS



Fixed gear, Fixed prop
P/N 09-42816.....



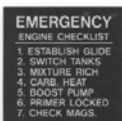
Fixed gear, Variable prop
P/N 09-42818.....



Retractable gear, variable prop
P/N 09-42820.....



Flight Plan Sequence
09-42822.....



Emergency
09-42826.....



VFR minimums
09-42824.....



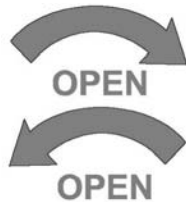
Transponder Codes
09-42828.....

INSTRUCTIONAL USE ONLY

INSTRUCTIONAL USE ONLY PLACARD - Used on Part 103 exempted 2-seat ultralights. Available in pre-spaced vinyl lettering in your choice of colors. Size 3" x 10"
Vinyl Lettering..... P/N 09-43901.....

CAUTION HOT EXHAUST

HOT EXHAUST - Black & red on white decal. Measures 1.5" x 4". A must where muffler can be accidentally touched or brushed up against during aircraft servicing or entry.
P/N 09-43902.....



OPEN ARROWS - Custom computer cut decals to indicate operation of door handles. Specify arrow CW or arrow CCW. Arrow and "OPEN" can be separated and individually positioned. Color: Red. Call for quote on custom size and colors. Standard size: 2" x 3-1/2".

- Clockwise..... P/N 09-43903.....
- Counter clockwise.. P/N 09-43904.....
- Custom Color..... add \$1.00

SOLO FROM FRONT SEAT ONLY

SOLO SEATING PLACARDS - Silkscreened in red ink on white all weather vinyl. Placards for solo from front or rear seat (specify). Size: 1" x 3".

SOLO FROM REAR SEAT ONLY

- Front Seat Solo..... P/N 09-43906.....
- Rear Seat Solo..... P/N 09-43907.....

| RECOMMENDED AIRSPEEDS | |
|-----------------------|---------------------|
| CLIMB/DESCENT | SHALLOWEST GLIDE |
| POWER OFF | MOST MILES PER GAL. |
| MOST FLIGHT TIME | STEERABLE CLIMB |
| CRUISE/CLIMB | ECONOMY CRUISE |
| BEST RATE OF CLIMB | NORMAL CRUISE |
| CRUISE CLIMB | |

RECOMMENDED AIRSPEEDS - Black on white vinyl. May be written on with a fine point indelible marker. Provides space for all your most important airspeeds. Size: 3.5" x 4.5"
P/N 09-43908.....

OPEN WINDOW TO HERE ONLY

WINDOW PLACARD - Black on white vinyl. Specify left arrow or right arrow. Size: 3/4" x 3".
Left P/N 09-43909.....
Right..... P/N 09-43911.....

STATIC AIR VENT KEEP CLEAN

STATIC AIR - Black on white vinyl. U-V coated, fuel resistant. Used to mark location of static air ents. Size: 3/4" x 1".
P/N 09-43912.....

CANOPY RELEASE DO NOT OPEN IN FLIGHT UNLESS YOU ARE LEAVING!

CANOPY RELEASE - Black on white vinyl. Marks location of emergency release mechanisms for doors or canopies. Size: 7/8" x 3-1/8".
Canopy..... P/N 09-43913.....
Door..... P/N 09-43914.....

OIL INJECTION CHECK OIL RES. BEFORE FLIGHT 2-Cycle oil ONLY

OIL INJECTION PLACARD - Black on white vinyl. Used on oil injected Two-Stroke engines. U-V and Fuel resistant. Size: 1" x 2-1/3".
P/N 09-43916.....

DRAIN ALL FUEL SUMPS BEFORE FIRST FLIGHT

DRAIN SUMPS - Black on white vinyl. U-V and Fuel resistant. Size: 1" x 2".
P/N 09-00348.....

FUEL DRAIN LOCATOR

FUEL DRAIN LOCATOR - Black on white vinyl. Used to locate fuel drain petcocks on aircraft. U-V & Fuel resistant. Size: 1/2" x 2".
P/N 09-43917.....

EMERGENCY FIRE EXTINGUISHER

FIRE EXTINGUISHER - Black & Red on white vinyl. Used to locate extinguisher in emergency. Size: 2" x 3.5"
P/N 09-43918.....

EMERGENCY BALLISTIC CHUTE

BALLISTIC CHUTE - Black & red on white vinyl. Used to locate Ballistic Chute Handle in emergency. Size: 2" x 3.5".
P/N 09-43919.....

NO STEP

NO STEP DECAL - No Step, 1"x5" Decal-black letters
P/N 1040.....

DECALS - PLACARDS



STAINLESS STEEL ID TAG

Suitable for all aircraft. Made of .0014 acid-etched stainless steel. Size: 3"x 2".
P/N 09-00761.....ea

NAMEPLATE

All amateur-built aircraft must have a nameplate. Etch or stamp required data on this indestructible stainless steel nameplate. Conforms to FAA requirements. Size: 3"x 4-1/4".
P/N 09-01997.....ea



EXPERIMENTAL Single-piece decal with adhesive back. No need to line up 12 individual letters. One-step operation. Just remove protective backing and apply to any clean surface. 2" black letters on clear Mylar base. Decal Size: 2-1/4" x 19".
Set of 2..... P/N 09-33400.....

LIGHT-SPORT LIGHT-SPORT DECALS - Similar to our EXPERIMENTAL Decals, complies with marking requirements for LSA. Available in: 2"x14-1/4"
Black on Clear..... P/N 09-00762.....
Black on White..... P/N 09-00782.....
White on Clear..... P/N 09-00783.....

NO STEP Bright red on white vinyl. Letters are 1" high.
Decal size: 1-3/8" x 4-3/8".
P/N 09-33500.....ea

NO STEP 1"x5" Decal-black letters.
P/N 1040.....

PANEL MARKING SETS

ACTUAL TYPE SIZES:

THROTTLE
THROTTLE



DRY TRANSFER TYPE - Over 200 pressure sensitive labels and words conveniently grouped for ease of transfer to airplane controls or instrument panel. Available in two type sizes (see illustration) and in black or white lettering (specify).
Large Black..... P/N 09-34600 Large White..... P/N 09-34700
Small Black..... P/N 09-34800 Small White..... P/N 09-34900
. Set



MFG BY AIRCRAFT SPRUCE

SELF-ADHESIVE VINYL TYPE - White lettering on black background. Just cut, peel and press in place. Includes 349 of the most commonly used cockpit identifications and symbols (avionics, electrical, engine and aircraft controls) plus 248 numbers & letters. The most complete selection available.
P/N 09-35000..... Set



HOMEBUILDERS TYPE - Self-adhesive vinyl markings for the Long-EZ but applicable to many other aircraft. P/N 01-37800..... Set



P/N 09-34200

P/N 09-34300

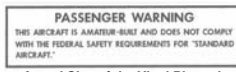


P/N 09-34400

P/N 09-34500

SOFT ALUMINUM DECALS -

Soft Aluminum Decals Letters are 1-1/4"H X 3-3/4"L with black lettering.
. ea.



Actual Size of the Vinyl Placards: 4.25" w x 1.125" h

PASSENGER WARNING!

THIS AIRCRAFT IS AMATEUR BUILT AND DOES NOT COMPLY WITH THE FEDERAL SAFETY REGULATIONS FOR STANDARD CATEGORY AIRCRAFT.

Actual Size of the Dry Transfer Placards: 3.25" w x .75" h

The vinyl placard has brilliant red lettering on a white background. Simply remove the paper backing and apply.

| Lettering | Background | Type | Part No. | Price |
|-----------|------------|----------------------|----------|-------|
| Red | White | Vinyl Placard | 09-33300 | . |
| Black | Clear | Dry Transfer Placard | 09-33310 | . |
| White | Clear | Dry Transfer Placard | 09-33320 | . |

PASSENGER WARNING PLACARDS

These Passenger Warnings must be displayed in the cockpit of all amateur-built aircraft.

The dry transfer passenger warning placards available in black, & white lettering. Simply remove the protective backing and rub on the desired area.

PASSENGER WARNING

THIS AIRCRAFT IS AN EXPERIMENTAL LIGHT-SPORT AIRCRAFT AND DOES NOT COMPLY WITH THE FEDERAL SAFETY REGULATIONS FOR STANDARD AIRCRAFT

S-SLA -

P/N 09-01968.....

PASSENGER WARNING DECALS

E-LSA-

P/N 09-01966.....

PASSENGER WARNING

THIS AIRCRAFT IS A SPECIAL LIGHT-SPORT AIRCRAFT AND DOES NOT COMPLY WITH THE FEDERAL REGULATIONS FOR STANDARD AIRCRAFT

FUEL OCTANE DECALS

MIN. FUEL OCT.
80/87

MIN. FUEL OCT.
100/130

Handsome vinyl placards have brilliant red lettering on a white background. Simply remove paper backing and apply. Size: 1" x 2-7/8".

80/87 red on white..... P/N 09-33610..... pr.
80/87 green on clear..... P/N 09-33615..... pr.
100/130 red on white..... P/N 09-33700..... pr.
100/130 red on clear..... P/N 09-33710..... pr.

AIRCRAFT IDENTIFICATION DATA PLATES

AIRCRAFT IDENTIFICATION

N NUMBER

BUILDER

MODEL

SERIAL NUMBER

We offer the Aircraft I.D. Plates required by the FAA for all aircraft. This 1"x3" plate is thin aluminum, black anodized. Comes engraved with your aircraft model & serial numbers and ready to install on the aircraft. Specify Builder, Model, Serial No., & "N" numbers.

Experimental..... P/N 09-40000.....
Factory Built..... P/N 09-00447.....

FUEL PLACARDS



09-42803



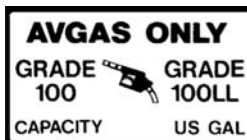
09-42802



80 Octane-half red/blue, round.
P/N 09-42804.....

100 Octane, Low Lead Only Blue
P/N 09-42806.....

100 Octane Only
P/N 09-42808.....



09-42801..... pr.

USE 100/130 OCTANE FUEL ONLY

09-42810..... ea.

FUEL
80/87 MIN. GRADE AVIATION GASOLINE
or
UNLEADED AUTO GASOLINE
87 MIN. ANTIKNOCK INDEX
PER ASTM SPEC D-439



Yellow on Black. Size: 1-1/4"x5"
P/N 09-01141...../pair

09-42814..... ea

CS

PLACARDS – STENCILS – VINYL LETTERS

PLACARDS

| | |
|---|---|
| SPINS PROHIBITED 5/8"x 3-1/4" P/N 09-42842 1"x 5" ...P/N 09-42844 ea | FASTEN SEAT BELT 1"x 5" P/N 09-42850 5/8"x 3-1/4" ...P/N 09-42848 ea |
| NO LIFT 1"x 3" 09-42858..... | NO STEP 1"x 3" 09-42852..... |
| NO PUSH 1"x 3" 09-42854..... | |
| EXPERIMENTAL 1"x 5" 09-42856 ea | INOPERATIVE 1/4"x1-3/4" ...09-42862 ea |
| NO SMOKING 1"x 4" 09-42846..... ea | LIFT HERE 1"x 3" .....09-42860 ea |

All the placards & decals on this page are produced on long lasting UV coated pressure sensitive adhesive vinyl. They are computer cut using no clear background so they won't yellow. These are all top quality decals which will enhance your aircrafts looks for years to come. Do not settle for "cheap" imitations.

12-INCH STENCIL NUMBER STRIP

Highly recommended as the easiest and most effective way to apply painted 12" stenciled "N" numbers on any aircraft. These come pre-spaced and aligned horizontally or vertically and assure a professional looking job. Shipped factory-direct to you within 48 hours. Provide exact "N" number when ordering. Special order - Non-returnable. Please specify horizontal or vertical. 6 Characters on each strip or less. Made of Vinyl.

12" Strip (straight) (right/left).....P/N 09-00287 set
12" Strip (slanted) (right/left).....P/N 09-00288 set

3-INCH STENCIL STRIP

Vertical or horizontal lettering individually spaced and aligned. Advise number. Stencils will be made-to-order and shipped in about two weeks.

Straight Set of 2 (Right/Left).....P/N 09-00289 set
Slanted Set of 2 (Right/Left).....P/N 09-00290 set

INDIVIDUAL FIGURE STENCILS

N4804K N2510T N6979N
N425WT N100MD N51ER

Precut sticky paper masks for spraying registration numbers. Used by Piper and other aircraft manufacturers. Order two of each character for vertical stencils. Slanted stencils are furnished in pairs (R/L), so order one pair of each character. Order by part number. For last digit, put in number or letter needed.

3 Inch Vertical Figures.....P/N 09-3280x Ea
12 Inch Vertical Figures.....P/N 09-3290x Ea
12 Inch Slanted Figures.....P/N 09-3300x Pr

Painting Options: These stencils offer you two methods of spraying lettering incorporated in a single stencil.

You can: (1) Letter after the body color has been applied or (2) Letter before the body color has been painted. This second method provides recessed, protected lettering and eliminates masking.

LETTERING & NUMBERS

For any use. Available in over 40 type styles. Most colors available.

| Cap Size(In.) | In Stock Colors | Slanted or Reversed | Reflective & Metallic |
|---------------|-----------------|---------------------|-----------------------|
| 3/4 | .40 | .45 | N/A |
| 1 | .75 | .80 | .80 |
| 1-1/2 | .75 | .80 | .80 |
| 2 | 1.00 | 1.05 | 1.05 |
| 2-1/2 | 1.00 | 1.05 | 1.05 |
| 3 | 1.35 | 1.40 | 1.40 |
| 4 | 1.35 | 1.40 | 1.40 |
| 4-1/2 | 1.50 | 1.55 | 1.55 |
| 5 | 1.50 | 1.55 | 1.55 |
| 6 | 1.80 | 1.85 | 1.85 |
| 7 | 2.25 | 2.30 | 2.30 |
| 8 | 2.50 | 3.00 | 3.00 |
| 9 | 4.00 | 4.50 | 4.50 |
| 10 | 5.00 | 5.50 | 5.50 |
| 12* | 6.75 | 7.05 | 7.05 |

*Numbers excluded

12-INCH VINYL N NUMBER STRIP

The fastest and easiest way to apply registration numbers. These numbers come pre-spaced and aligned and are ready to apply in one simple operation. These are top quality numbers which are shipped factory direct to you within 48 hours. Provide exact "N" number when ordering. 6 Characters max. on each) Color choices are black, white, red, blue, or gold. Standard type style is helvetica. Military block, drop shadow, or outline styles are also available. Please specify your N number, color, orientation, and print style in the special instructions of the online order form. Colors Available: * Black * White * Tomato Red (Light Red) * Cardinal Red (Dark Red) * Olympic Blue (Sky Blue) * Bright Blue * Sapphire Blue * Light Navy * Metallic Gold * Metallic Silver * Green * Brown

Note: Drop Shadow style is double the cost due to it being two colors. Straight 12" Strip (6 Characters max. on each)

P/N 09-41910..... pr.

Slanted 12" Strip (6 Characters max. on each)

P/N 09-41922 pr.

12-INCH INDIVIDUAL VINYL NUMBERS

We now offer new 12" vinyl "N" numbers as now required for return flight to the U.S. from foreign countries. Available in black, gold, red, white or blue. Numbers are slightly slanted. Basic part number is 09-387xx. Second to last digit is for color. 1 - Black, 6 - Gold, 7 - Red, 8 - White, 9 -Blue. For last digit, put in number or letter needed.

See our website for a complete listing of Part Numbers

Slanted 12" Individual #'s.....\$10.25 / pair

3-INCH VINYL INDIVIDUAL NUMBERS & LETTERS

Individual vertical numbers and letters. Pressure sensitive vinyl for easy application. Black only. No slanted numbers available. Basic part no. is 09-3310x. For last digit, put in number or letter needed. ea. Helvetica Straight\$4.50/letter Helvetica Slanted..... \$5.25/letter Monument Block.....\$9.00/ letter Monument Block Slant.. \$9.00/ letter

3" VINYL NUMBER STRIP

"N" Number Strips assure handsome registration numbering in minutes. Complete made-to-order 3" registration number on adhesive application strip individually spaced and aligned (NOT A FILM). Lay strip on aircraft and remove backing. Permanent number remains bonded to aircraft. A real time saver. Will outlast paint - look better. Available in black, white or gold. Vertical or horizontal lettering. 2-week delivery. Specify vertical or horizontal lettering and color. Colors Available: * Black * White * Tomato Red (Light Red) * Cardinal Red (Dark Red) * Olympic Blue (Sky Blue) * Bright Blue * Sapphire Blue * Light Navy * Metallic Gold * Metallic Silver * Green * Brown

3"Straight..... Right & Left..... P/N 09-00294 set

3"Slanted..... Right & Left..... P/N 09-00302 set

Letter styles available for your aircraft. 3" and 12" vinyl strips.

| | | | |
|-----------------|---------------|-----------------------|---------------|
| Monument Block | N6428L | Monument Block Slant | N6428L |
| Helvetica Block | N6428L | Helvetica Block Slant | N6428L |
| Military Block | N6428L | Military Block Slant | N6428L |

CARDBOARD DIE-CUT ONE-PIECE STENCILS

| | Size | Part No. | Price Each |
|--------------|---------------|----------|------------|
| EXPERIMENTAL | 2"H x 18"L | 09-32400 | . |
| NO STEP | 2"H x 4-3/4"L | 09-32500 | . |
| NO PUSH | 1"H x 4-3/4"L | 09-32600 | . |
| NO STEP | 1"H x 4-3/4"L | 09-32700 | . |



TRACE-IT STENCIL SETS

Allows for stenciling of every letter and number. NOTE: Illustration is portrayal of item you actually receive - each kit contains 3", 12" and 24" sizes.

P/N 09-42831

AIRCRAFT PLACARD KITS

INTERIOR PLACARD KITS

These quality decal sets are designed to provide all the necessary placards for the interior of various production and homebuilt aircraft. These interior kits are color coordinated to match factory originals. Just cut the decals you want to use from the card and apply to the aircraft interior.

Standard colors for these kits are white letters on black background. With exception to the Grumman kits marked with *. Also, most kits are available special order in black on clear or white on clear

| DESCRIPTION | P/N | PRICE |
|------------------------|----------|-------|
| AVIONICS | 09-00981 | . |
| BEECHCRAFT | | |
| MUSKATEER 19, 23 | 13-03954 | . |
| 24, 24R, SIERRA | 13-03950 | . |
| 33, 35, 36 SERIES | 13-03951 | . |
| TWIN BONANZA | 13-03953 | . |
| BELLANCA | | |
| CITABRIA/DECATHLON | 13-03949 | . |
| CESSNA | | |
| 120/140/150/152 | 09-44055 | . |
| 170/172/175 | 09-44060 | . |
| 177/177RG | 13-03955 | . |
| 180/182/185 | 13-03956 | . |
| 190/195 | 09-01158 | . |
| 205/206/207 | 09-01963 | . |
| 210/210P | 09-01010 | . |
| 310 H M P Q | 09-01084 | . |
| 310 P-Q | 09-01160 | . |
| 310 -D | 09-01162 | . |
| 336/337 | 09-01191 | . |
| ERCOUPE | 09-01165 | . |
| GROB | | |
| SEAPLANE | 09-01021 | . |
| GRUMMAN | | |
| AA1/AA1A | 09-01168 | . |
| AA1B/AA1C | 09-01169 | . |
| AA5/AA5A, AA5B | 09-01170 | . |
| COUGAR | 09-01171 | . |
| BARON | 13-03952 | . |
| PIPER | | |
| PA-18 SUPER CUB | 09-01176 | . |
| PA-23 AZTEC SERIES | 09-01184 | . |
| PA-24 COMANCHE | 09-01181 | . |
| PA-28 140-181 CHEROKEE | 09-01179 | . |
| PA-28 235-236 | 09-01180 | . |
| PA-28 R ARROW SERIES | 09-00441 | . |
| PA-30 TWIN COMANCHE | 09-01183 | . |
| PA-32 CHEROKEE-LANCE | 09-01182 | . |
| SARATOGA | | |
| PA-34 SENECA SERIES | 09-01185 | . |
| PA-38 112 TOMAHAWK | 09-01178 | . |
| PA-44 SEMINOLE SERIES | 09-01186 | . |
| TRI-PACER | 09-01177 | . |
| WESTWIND | 09-01046 | . |
| UNIVERSAL INTERIOR | 09-01197 | . |
| | 09-00634 | . |

80/87 OCT. MIN. STC AUTO GAS
 1-1/4" x 5-1/4"
 09-42812
 . ea.

ENGINE OIL
 OIL CHANGED: _____ DATE: _____
 OIL USED: _____
 09-42809 . ea.
 or 10 for \$3.57

80 100 OCTANE ONLY
 09-42604 .ea

80/87 OCTANE ONLY
 09-42817 .ea

100 OCTANE ONLY
 09-42608 .ea

JET FUEL ONLY
 09-42821 .ea

AVGAS ONLY
 GRADE 100LL GRADE 100
 1-1/4" x 5-1/4"
 09-42813
 . ea.

CAUTION DO NOT INSERT FUEL NOZZLE MORE THAN 3" INTO TANK
 1-1/2" x 2-1/4"
 for Beechcraft
 09-42811 . ea.

EXTERNAL POWER 12 VOLT DC
 1-5/16" x 2-11/16"
 09-42827 . ea.

EXTERNAL POWER 24 VOLT DC
 1-5/16" x 2-11/16"
 09-42829 . ea.

WARNING ONLY THE PILOT OF THIS AIRCRAFT IS PERMITTED TO OPEN - CLOSE - LOCK THIS DOOR
 09-42823 .ea

EXTERIOR PLACARD KITS

NO STEP NO STEP NO STEP NO STEP NO STEP NO STEP NO STEP NO STEP

AERO D-CALS
 FIG. NO. 1376 - 1387
 LAKELAND AIRPORT, FL BONANZA 33-36-38

STATIC AIR KEEP CLEAN

NOTICE
 WING BOLTS ARE LUBRICATED SEE MAINTENANCE MANUAL FOR CORRECT TORQUE VALUES

NOTICE
 WING BOLTS ARE LUBRICATED SEE MAINTENANCE MANUAL FOR CORRECT TORQUE VALUES

NOTICE
 WING BOLTS ARE LUBRICATED SEE MAINTENANCE MANUAL FOR CORRECT TORQUE VALUES

NOTICE
 WING BOLTS ARE LUBRICATED SEE MAINTENANCE MANUAL FOR CORRECT TORQUE VALUES

PULL TO CHECK LATCH **TURN TO OPEN**

PULL TO CHECK LATCH **JACK ATTACH POINT**

PULL TO OPEN **JACK PAD** **JACK PAD**

TIE DOWN **PUSH TO OPEN**

TIE DOWN **PUSH IN TO OPEN**

TIE DOWN **PUSH IN TO OPEN**

TIE DOWN **PUSH IN TO OPEN**

TIE DOWN **PUSH IN TO OPEN**

TIE DOWN **PUSH IN TO OPEN**

STATIC AIR KEEP CLEAN

HAND HOLD

LOCKED

OPEN

Beechcraft

AIR CONDITIONED

RAJAR EQUIPPED

LEVEL POINT **LEVEL POINT**

HEAT TREATED ASSEMBLY

HEAT TREATED ASSEMBLY

AVGAS ONLY
 GRADE 100LL GRADE 100 CAPACITY
 WITH WINGS LEVEL
 CAP TO THE BOTTOM
 FOR ALTERNATE FUELS SEE PILOTS OPERATING HANDBOOK

AERO D-CALS
 FIG. NO. 1376 - 1387
 LAKELAND AIRPORT, FL BONANZA 33-36-38

EXTERNAL POWER 24 VOLT DC

CAUTION DO NOT INSERT FUEL NOZZLE MORE THAN 3 INCHES INTO TANK

CAUTION DO NOT INSERT FUEL NOZZLE MORE THAN 3 INCHES INTO TANK

NO HANDLE NO HANDLE

FUEL CELL SUMP DRAIN DAILY

FUEL CELL SUMP DRAIN DAILY

EXTERNAL POWER 12 VOLT DC

AVGAS ONLY
 GRADE 100LL GRADE 100 CAPACITY
 WITH WINGS LEVEL
 CAP TO THE BOTTOM
 FOR ALTERNATE FUELS SEE PILOTS OPERATING HANDBOOK

54 US GAL (51 USEABLE) **54 US GAL (51 USEABLE)**

40 US GAL (37 USEABLE) **40 US GAL (37 USEABLE)**

35 US GAL (32 USEABLE) **35 US GAL (32 USEABLE)**

30 US GAL (27 USEABLE) **30 US GAL (27 USEABLE)**

20 US GAL **20 US GAL**

SECURE PRIOR TO FLIGHT

FUEL STRAINER DRAIN DAILY

Beechcraft

| Aircraft Model | P/N | Price |
|-----------------------------------|----------|-------|
| Helicopter (Universal) | 09-44201 | . |
| Single Engine (Universal) | 09-44202 | . |
| Mooney M20/21 | 09-44203 | . |
| Piper PA28 Cher/Warrior/Archer II | 09-44204 | . |
| Piper PA32 Cher/Lance/Saratoga | 09-44206 | . |
| Piper PA32 Apache/Aztec | 09-44207 | . |
| Piper PA34 Seneca I/II/III | 09-44209 | . |
| Piper PA30/39 Twin Comanche | 09-44211 | . |
| Piper PA31T/42T Cheyenne | 09-44205 | . |
| Cessna 100/200 | 09-44213 | . |
| Cessna 300 Series | 09-44210 | . |
| Cessna 400 Series | 09-44220 | . |
| Cessna 425/441 | 09-44235 | . |
| Cessna Jet 500 Series | 09-44245 | . |
| Beech Bonanza V35 | 09-44216 | . |
| Beech Baron 55/58 | 09-44251 | . |
| Beech Duke 60 | 09-44217 | . |
| Beech Queen Air 65/88 | 09-44218 | . |
| Beech King Air 200/300 | 09-44250 | . |
| Beech Jet 400 Series | 09-44255 | . |
| Exterior Kit Beech King Air | 09-01956 | . |
| Saber Jet 40/60 | 09-44219 | . |
| Hawker Jet 500 | 09-44280 | . |
| Westwind Jet 1100 | 09-44223 | . |
| Gulfstream 690-1000 | 09-44224 | . |
| Challenger Jet 600 | 09-44227 | . |
| Falcon Jet 10/20 | 09-44228 | . |
| Lear Jet 20 Series | 09-44260 | . |
| Lear Jet 30 Series | 09-44265 | . |
| Lear Jet 50 Series | 09-44231 | . |
| Rockwell 112/114 | 09-44232 | . |
| Rockwell Gulf Stream 690 | 09-44233 | . |

Die cut decal kits are available on request. Call for quotation.



GYROS

SIGMA-TEK ATTITUDE GYROS (VACUUM)



An air operated instrument which indicates aircraft attitude through 360° in roll & 360° in pitch. The pictorial airplane remains fixed during gyro operation but may be adjusted by the pilot for changing conditions. The upper half of the horizon bar and the mask are light blue color. Sky is blue and ground is brown. Zero pointer and airplane wings are yellow. Numerals and markings are white on dull black background. Vacuum port and air inlet ports 1/4" NPT. Gauge port 1/8" NPT. Size: 3-3/8" x 3-3/8" x 6-3/8". Wt: 1.9lbs. Standard equipment in production Cessna & Piper aircraft. If instrument panel is tilted, special order gyro is required. *Lighting tray must be purchased to attach to the bezel for lighting.

| | |
|--|--------------|
| Model 5000B | P/N 5000B |
| Model 5000B-20 (Black/Blue) | P/N 10-00389 |
| Model 5000B Lighted (tray sold separately) | P/N 10-01071 |
| Model 5000B with 8° panel tilt | P/N 5000B-42 |
| Model 5000B-F w/Vacuum Failure Flag | P/N 5000B-F |
| Model 5000B w/Fail. Flag | P/N 10-00132 |
| 5000B Light Tray 14V | P/N 10-00111 |
| 5000B Light Tray 28V | P/N 10-00112 |

RC ALLEN VACUUM HORIZON GYRO



The RCA22 Series of vacuum artificial horizon are controlled by air driven precision gyros to present the pilot with pitch and roll information. The attractive color scheme of blue sky and brown ground presents a realistic spherical display of flight. Unless otherwise indicated all instruments have a dark blue/brown display, fixed pointer and are unlighted. This is the "standard" display. Instruments equipped with a warning flag will let you know when vacuum has dropped below 3.8 inch Hg. Flag retracts from view at 4.3 inch. Hg. Instrument fits in a standard 3 1/8" panel cutout. Meets or exceeds all requirements of FAA TSO C4c and Aeronautical Standard AS396B.

| Model No. | Description | Part No. | Price |
|-----------|---|----------|-------|
| RCA22-7 | Standard display, tilt must be specified at time of order. | 10-01371 | . |
| RCA22-7-8 | Standard Display, with 8° Tilt. | 11-03607 | . |
| RCA22-7F | Standard Display with a warning flag. | 10-00504 | . |
| RCA22-11 | Standard display, lighted 14V, Tilt must be specified at time of order. | 10-00502 | . |
| RCA22-11 | Standard display, lighted 28V, Tilt must be specified at time of order. | 10-01391 | . |
| RCA22-11 | Standard display, lighted 28V, 8° tilt | 10-03635 | . |
| RCA22-11F | Standard display, lighted, with a warning flag. (14V) | 10-00094 | . |
| RCA22-11F | Standard display, lighted, with a warning flag. (28V) | 10-03574 | . |
| RCA22-15 | Display is blue over black Tilt must be specified at time of order. | 10-01109 | . |

RC ALLEN ATTITUDE GYROS (ELECTRIC)



The RCA26 Series is the top of the line and has been designed for precision and reliability. The RCS26EK Series is a 12-30VDC instrument. You have a choice of a fixed or moveable pointer, and a 14 or 28 volt lighting. Performance characteristics include roll indication of 360°. Pitch ± 30°. Pitch trim range ± 7°. Slip Indicator can be added upon request. Mating connector (MS3116E8-4S) is also available. Pictured is the RCA26EK-11

| Model No. | Description | Part No. | Price |
|-------------|---|----------|-------|
| RCA26EK-6 | 12-30 VDC. Fixed Pointer. Unlighted | 10-01328 | . |
| RCA26EK-7 | 12-30 VDC. Lighted | 10-01329 | . |
| RCA26EK-11 | Fixed Pointer, unlit. Tilt must be specified at the time of order. | 10-02524 | . |
| RCA26EK-12 | Fixed Pointer, lighted. Voltage and tilt must be specified at time of order. | 10-02526 | . |
| RCA26EK-13 | Moveable pointer, unlit. Tilt must be specified at time of order. | 10-02527 | . |
| RCA26EK-14 | Moveable pointer, lighted. Voltage and tilt must be specified at time of order. | 10-02528 | . |
| RCA26AK-1 | Standard look, 14 VDC, Lighted, Moveable pointer, Stationary roll dial. | 10-00608 | . |
| RCA26AK-2 | Standard look, 14 VDC, Lighted, fixed pointer, moveable roll dial. | 10-01683 | . |
| RCA26AK-2-8 | Standard look, 8° Tilt, 14 VDC, Lighted, fixed pointer, moveable roll dial. | 10-00392 | . |
| RCA26AK-3 | Standard look, 14 VDC, Moveable pointer, stationary roll dial. | 10-01118 | . |
| RCA26AK-4 | Standard look, 14 VDC, Fixed Pointer, Moveable roll dial. | 10-01392 | . |
| RCA26AK-4-8 | Standard look, 8° Tilt, 14 VDC, Fixed Pointer, Moveable roll dial. | 10-00391 | . |
| RCA26BK-2 | Standard look, 28 VDC, Lighted, Moveable pointer, Stationary Roll Dial. | 10-01119 | . |
| RCA26BK-6 | Standard look, 28 VDC, Fixed Pointer, Moveable Roll Dial. | 10-01393 | . |
| RCA26BK-8 | Standard look, 28 VDC, Moveable pointer, Stationary Roll Dial. | 10-01120 | . |
| RCA26BK-9 | Standard look, 28 VDC, Lighted, Fixed pointer, Moveable Roll Dial. | 10-00466 | . |
| RCA26BK-12 | 5° Tilt, 28 VDC, Lighted, Moveable pointer, fixed roll dial | 10-01122 | . |
| MS3116E8-4S | Connector | 10-00791 | . |
| 44-0007-01 | A slip indicator/inclinometer for all the RCA26 series & RC Allen vacuum horizons | 10-02586 | . |

SIGMA-TEK DIRECTIONAL GYRO VERTICAL CARD (VACUUM)



An air operated instrument which indicates compass headings through 360°. The gyro is functional during dives, climbs or banks up to 55 degrees displacement from level flight. Dial has matte white numerals and markings on a dull black background. Vacuum port and air inlet ports 1/4" NPT. Gauge port 1/8" NPT. Size: 3.25" x 3.25" x 6.5; Wt. 2.6 lbs. Standard equipment in production Cessna and Piper aircraft. New manufacture.

| | |
|---|--------------|
| Model 4000B (Unlighted) | P/N 4000B |
| Model 4000B-31 (Lighted - Tray sold separately) | P/N 10-00588 |
| Model 4000B w/ Heading Bug | P/N 10-00469 |
| 4000HR-3 w/Bug (Tray sold separately) | P/N 10-00095 |
| Model 4000C Autopilot DG | P/N 4000C |

SIGMA-TEK 4000D-6 DIRECTIONAL GYRO

Lighted gyro is compatible with S-Tec autopilots (S-Tec Model 6406)
 Gyro Only P/N 10-00587
 14 Volt Light Tray P/N 10-00111
 28 Volt Light Tray P/M 10-00112

SIGMA-TEK FACTORY OVERHAULED GYROS

Factory-overhauled gyros that are like new and carry the same warranty as a new units. Installation must be within 6 months of factory ship date, full replacement warranty is 12 months from date of installation. Exchange core must be a like core* and the core must be returned no later than 45 days from the invoice date to receive core credit. *Like cores include: any 4000B series Sigma Tek/EDO-Aire core as exchange for a 4000B-30 any 5000B series Sigma Tek/EDO-Aire core as exchange for a 5000B-36

| Description | Sigma-Tek Model No. | Our PN | Core | Price |
|------------------|---------------------|----------|----------|-------|
| Attitude Gyro | 5000B-36 | 10-03360 | \$275.00 | . |
| Directional Gyro | 4000B-30 | 10-03359 | \$275.00 | . |



INSIGHT GYRO 4000

Replace Troublesome Learjet DN-101 or DN-104 Gyros with Dependable 10,000 Hour Sperry/Honeywell Gyros The Insight Gyro 4000 is based on the best heading system in the industry, the Sperry/Honeywell C-14A.

The C-14A rotors are equipped with long life ceramic bearings rated for 10,000 hours. Combining the C-14A with special interface circuitry in a compatible package, the Gyro 4000 is a plug-in replacement for the old JET DN-101 or DN-104. STC'd for Learjet: 23, 24, 25, 28, 29, 31, 35 and 55 DN-101,104 equipped Learjets as a direct replacement.

P/N 11-05199



RC ALLEN DIRECTIONAL GYROS VERTICAL CARD (VACUUM)

The vertical rotating azimuth card is controlled by a precision air-driven gyroscope. This D.G. will give correct heading information through 85° of aircraft attitude in roll and pitch, 360° in yaw. Full-freedom design allows accurate indication, even after extreme maneuvers. Size: 3-3/8" x 3-3/8" x 7". Wt. 2.9 lbs. Fits standard 3-1/8" dia. panel cutout. Factory new.

| Model No. | Description | Part No. | Price |
|------------|--|----------|-------|
| RCA11A-8 | Standard Display | 10-01370 | . |
| RCA11A-8F | Standard Display with Flag | 10-01680 | . |
| RCA11A-15 | Cardinal Heading markers N., S., E., & W. (Piper/Cessna display) | 10-00390 | . |
| RCA11A-15F | Cardinal Heading markers N., S., E., & W. (Piper/Cessna display) With Flag | 11-01116 | . |
| RCA11A-16B | Standard Display, Lighted, 14 Volt. | 10-01369 | . |
| RCA11A-17B | Standard Display, Lighted, 28 Volt | 10-01389 | . |
| RCA11D-4 | Single Pointer, 400hz Autopilot with heading bug. | 10-01117 | . |
| RCA11D-5 | Dual Auto Pilot with Heading Bug | 10-03430 | . |
| RCA11D-7 | With Heading bug Only | 10-02931 | . |

RC ALLEN DIRECTIONAL GYROS (ELECTRIC)



The RCA15 Series electric directional gyro employs and electrically driven gyro motor and is a direct reading, azimuth indicator. Rotor run up time is 3 min. They have a built in inverter which converts aircraft DC power to the required AC voltage and frequency. May be used in both fixed wing and rotor wing aircraft and is easily installed in standard 3 1/8" panel cut out. Power failure flag drops into view when supply voltage is lost or has dropped below a level for proper operation of the gyro. Azimuth indication range 360°. Altitude operation -1,000 to 40,000 feet. Meets or exceeds all requirements of FAA TSO C5c, and Aeronautical Standard AS397. Mating connector MS3116E8-4S

| Model | Description | Part No. | Price |
|-------------|----------------------------|----------|-------|
| RCA15AK-1 | 14 VDC, Lighted | 10-01681 | . |
| RCA15AK-2 | 14 VDC | 10-01390 | . |
| RCA15BK-1 | 28 VDC, Lighted | 10-01682 | . |
| RCA15BK-2 | 28 VDC | 10-00501 | . |
| RCA15AK-16 | 14 Volt, 400HZ, 5K. | 10-02530 | . |
| RCA15AK-17 | 14 Volt, Heading Bug only. | 10-02529 | . |
| RCA15BK-16 | 28 Volt, 400HZ, 5K. | 10-02533 | . |
| RCA15BK-17 | 28 Volt, Heading Bug only. | 10-02532 | . |
| MS3116E8-4S | Mating Connector | 10-00791 | . |

GYROS



SIGMA-TEK 500EG ELECTRIC GYRO ATTITUDE INDICATOR

Lighted bezels have anti-reflective glass. Lighted gyros do not include lamp trays. All gyros calibrated for zero degree panel tilt. Mating Connector not included with gyro. FAA Certified as a primary or standby gyro (FAA advisory circular AC20-41A) Approved to Replace you turn coordinator (FAA advisory circular AC91-75) **Optional Features:** * Panel Tilt Inclinometer: 0 to 10 degrees, Standard tilts 0°, 5°, 7-1/2°, 8°, & 10° * Lighting L 5, 14, 28 Vdc external lamp tray, 12-inch leads. * Inclinometer: Slip Indicator, ball type, bezel mounted. * Mating Connector: Part No. 10-02756 **Specifications:** * Panel mount: Standard 3-1/8 inch round cutout, rear mount * Length: 8.1 inches maximum * Weight: 2.6 lbs. maximum, C/G 3.25 inches from mounting face * Input Power: 14Vdc input-1500 mA starting & 1400 mA running; 28Vdc input-600 mA starting & 550 mA running. * Dial Presentation: Fixed pointer, rotating dial, with symbolic airplane. * Operating Temperature Range: -30°C to +50°C, -22°F to +122°F * Certification: FAA TSO-C4c * Limited Warranty: 12 Months from date installed / 6 months shelf life. **All lighted gyros must order tray separately.**

(Shown with optional slip indicator installed)

| | |
|---|--------------------|
| Standard 28 Vdc, Lighted Bezel, and Slip Indicator..... | P/N 10-02748 |
| Standard 14 Vdc, Lighted Bezel, and Slip Indicator..... | P/N 10-02749 |
| Standard 28 Vdc, Lighted Bezel..... | P/N 10-02750 |
| Standard 14 Vdc, Lighted Bezel..... | P/N 10-02751 |
| Standard 28 Vdc, and Slip Indicator..... | P/N 10-02752 |
| Standard 14 Vdc, and Slip Indicator..... | P/N 10-02754 |
| Standard 28 Vdc..... | P/N 10-02753 |
| Standard 14 Vdc..... | P/N 10-02755 |
| Mating Connector..... | P/N 10-02756 |
| Lamp Tray, 14 Vdc, 12-inch leads..... | P/N 10-02757 |
| Lamp Tray, 28 Vdc, 12-inch leads..... | P/N 10-02758 |

THE "LIFESAVER" ELECTRIC GYRO



The only attitude indicator with a self-contained battery backup, the Lifesaver® provides one hour of emergency attitude reference in the event of power failure. With 7,500 hours MTBF – more than double the competition – it is an exceptional value. TSO approved. Added safety, ease of installation and cost-benefit make this an ideal primary or standby artificial horizon. Custom versions available to match existing instrument/EFIS displays. Anti-reflective glass and long-life lighting are standard on all Mid-Continent indicators.

| | |
|----------------------------------|--------------------|
| 14V Gyro With Battery..... | P/N 10-00750 |
| 28V Gyro With Battery..... | P/N 10-00841 |
| Slip Indicator..... | P/N 10-00764 |
| Remote Battery Mounting Kit..... | P/N 10-00763 |
| Replacement Battery Pack..... | P/N 10-01054 |
| 3/32" Front Mount Adapter..... | P/N 10-00765 |
| 1/2" Front Mount Adapter..... | P/N 10-00766 |
| Emergency Power Supply..... | P/N 11-05540 |

MID-CONTINENT STANDARD ELECTRIC GYRO



The only attitude indicator with a self-contained battery backup, the Lifesaver® provides one hour of emergency attitude reference in the event of power failure. With 7,500 hours MTBF – more than double the competition – it is an exceptional value. TSO approved. Added safety, ease of installation and cost-benefit make this an ideal primary or standby artificial horizon. Custom versions available to match existing instrument/EFIS displays. Anti-reflective glass and long-life lighting are standard on all Mid-Continent indicators.

| | |
|-------------------------------|--------------------|
| 14V Gyro Without Battery..... | P/N 10-00751 |
|-------------------------------|--------------------|

FALCON ATTITUDE GYRO (VACUUM)



This Gyro Horizon is controlled by an air driven precision gyroscope to present the pilot with pitch and roll information, through the full 360° "pictorial" presentation leads to faster interpretation of airplane attitude. A zero pitch adjustment knob is provided. Dims: 3-1/8 x 3-1/8 x 8 max. Similar to Air Italia Gyros. Non-TSO'd for Experimental Aircraft Only P/N 10-22955

FALCON ATTITUDE GYRO (ELECTRIC)



This factory new electric attitude gyro fits the standard gyro instrument cut-out. Features push-to-cage knob, low power/power failure flag, longer life & reliability due to lower operating temp.; Black case, black adjustment knob, & bright yellow/green airplane marker with sky blue/brown ground dial. Roll & loop without worry. Size: 6.4", Wt: 2.4 lbs., Power: 14VDC req. MS3116E8 connector (included). Non-TSO'd for Experimental Aircraft Only.

| | |
|----------------------------|--------------------|
| 14V, Unlighted..... | P/N 10-00013 |
| 14V, Lighted..... | P/N 10-00099 |
| 14V, 8° panel tilt..... | P/N 10-00101 |
| 28V, Unlighted..... | P/N 10-00102 |
| 28V, Lighted..... | P/N 10-00103 |
| MS3116E8-4S connector..... | P/N 10-00791 |

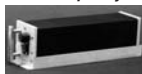


CASTLEBERRY ELECTRIC ATTITUDE INDICATOR

The high quality electric attitude indicator replaces the turn and bank and may be installed in the same panel location, freeing up crowded panel space. Installation of these units is straightforward. It has an inclinometer for use in standard rate turns and a failure warning flag to indicate loss of gyro RPM. When used together with the Castleberry Emergency Power Unit, Model EPU 28-24RMT, this instrument provides the pilot with a welcome margin of insurance in case of aircraft electrical power failure. **Features:** • Inclinometer • Power failure flag • Pull to cage knob • Backlit • Standard 3 1/8 in. diameter

| Model No. | Description | Part No. | Price |
|-----------|------------------------------------|----------|-------|
| 300-14EL | 14V Gyro | 10-02823 | . |
| 300-14EL | 28V Gyro | 10-02824 | . |
| 300-14EL | 14V Gyro With 8° Tilt | 10-02828 | . |
| 300-14EL | 28V Gyro With 8° Tilt | 10-02829 | . |
| 300-14ELP | 300-14EL With Auto Pilot outputs.* | 10-02826 | . |

*Please Specify at time of order 14 or 28V or tilt if desired.



CASTLEBERRY EMERGENCY POWER BACK-UP EPU-2

TSO'd emergency power supply, Model EPU 28-24RMT that can replace some older non TSO'd units made by Terra and AIM that are no longer in production. This unit provides a 24 VDC output up to 5 Amps for 30 minutes for emergency buss power to operate the standby attitude gyro with extra capacity of up to 4 amps for other critical instrument or avionics. This is economical insurance in a 7.5 pound package for aircraft frequently involved in IFR operations.

| | |
|---|--------------------|
| Emergency Power Supply EPU-2..... | P/N 11-05822 |
| EPU Connector..... | P/N 11-07713 |
| Rack Mount and Connector for EPU-2..... | P/N 11-05823 |
| Component Maintenance Manual..... | P/N 11-00187 |

MID-CONTINENT 3300-10

ELECTRIC DIRECTIONAL GYRO



FEATURES: • Weighs just 1.9 lbs. – One pound less than most electric directional gyros • Multi-voltage 10–32 volt DC, remains valid until the aircraft main battery discharges to 10VDC • Direct replacement for many AIM205 and RC Allen RC15A units • Designed specifically for use in high vibration applications • Warning flag monitors rotor speed and power input • Anti-reflective glass enhances visibility and reduces fatigue • Approved to FAA TSO-C5e and RTCA DO-160E • Requires less than half the power of standard DG units • Long-life LED lighting, user selectable to 5, 14 or 28 volt input • One year limited warranty **SPECIFICATIONS:** Power Input: 10–32 VDC, Current Rating: At 14 VDC Start: 1.4A Max., Run: 0.44A nominal, At 28 VDC Start: 0.6A Max., Run: 0.22A nominal, Lighting: Internal LED lighting switchable to 5, 14 or 28 VDC input; wired through main connector, Weight: 1.9 lbs., Length: 4.7 inches, MTBF: 2,500 hours, Mating Connector: MS3116F8-4S, Mounting: Rear panel mount in standard 31/8" round panel cutout P/N 10-02821



RCA 2600 SERIES DIGITAL ATTITUDE GYROS

FAA TSO-C4c certified and is designed to be a direct replacement for any Electric Attitude indicator. Contains no mechanical gyro. Ideal for light sport and home built applications. The precision and stability qualities of these instruments also make them suitable for larger aviation applications such as business aircraft and rotorcraft. Capable of aerobatic type maneuvers with a full 360 degrees of pitch and roll without the typical "tumbling" of mechanical gyros and without any harm to the instrument.

| | |
|-------------------------------|--------------------|
| RCA2600-2 (2 Inch Gyro)..... | P/N 11-07324 |
| RCA2600-3 (3 Inch Gyro)..... | P/N 11-07325 |
| 2600 Inclinometer Option..... | P/N 10-03862 |

FALCON DIRECTIONAL GYRO (VACUUM)



The vertical rotating azimuth card is controlled by a precision gyroscope air-driven. The directional gyro will give correct heading information through ±60° of aircraft attitude in roll and pitch, 360° in yaw. A caging knob is provided to reset the gyro to the magnetic compass. Similar to Air Italia Gyros. Non-TSO'd for Experimental Aircraft Only. P/N 10-22950

FALCON DIRECTIONAL GYRO (ELECTRIC)



The Directional Gyro is a gyroscopic navigation instrument designed to provide the pilot with a constant directional reference that is not subject to characteristics of a magnetic compass that cause errors. The vacuum type is operated by the air flow generated by the aircraft's vacuum system while the electrical type is operated by the aircraft's power supply. Non-TSO'd for Experimental Aircraft Only.

| | |
|-------------------|--------------------|
| 28V Heading..... | P/N 10-01799 |
| 14V Electric..... | P/N 10-01798 |

Falcon gyros can tolerate some aerobatic flight, but aerobatics can reduce the life of the gyro. It is recommended that the gyros be removed when the aircraft will be performing extensive aerobatic maneuvers. The Falcon electric gyros have caging knobs, but the vacuum gyros do not.

GYROS – STANDBY VACUUM SYSTEMS



MINI 2-INCH ELECTRIC ATTITUDE INDICATORS

The Mini Gyro offers big features in a compact package. At half the cost of the competition, the Mini Gyro not only saves panel space, but also time and money. An ideal standby instrument, this TSO-approved indicator has 10-32 volt DC operation and is an attractive alternative to vacuum systems.

It features unique LED lighting selectable to 5, 14 or 28 volts. Remote emergency power supply available for this indicator (P/N 11-05540).

- Standard airplane displayP/N 10-01721
- Delta airplane displayP/N 10-01722
- Emergency Power SupplyP/N 11-05540



VOLT & VAC ALERT

A gyro instrument can start giving false information in less than one minute, and it is important that the pilot become instantly aware of a vacuum loss. The Volt & Vac Alert monitors instrument vacuum and electrical voltage. Should either fall below set values, the system will provide an instantly recognizable voice warning directly in the pilots headset, and then flash a light positioned within the normal gyro scan area, providing him with instant recognition of a problem. The Volt & Vac Alert is STC - PMA approved P/N 10-00393

RAPCO STANDBY PNEUMATIC CLUTCH REPLACEMENTS



400 Series replacement clutches for Rapco standby pneumatic systems are available in 12 volt or 24 volt. They can be purchased either new or as an overhauled exchange. A core charge will be added to the purchase price of exchange units and refunded with the return of a repairable 400 series core.

| Description | Description | Price |
|-------------------------|-------------|-------|
| 400 NEW clutch, 12V | 10-02656 | . |
| 400 NEW clutch, 24V | 10-02656-1 | . |
| 400 EXC Clutch, 12V | 10-23949 | . |
| Remanufactured exchange | | |
| 400 EXC Clutch, 24V | 10-23949-1 | . |
| Remanufactured exchange | | |

VACUUM WARNING INDICATOR



The Precise Flight Vacuum Warning Indicator will provide the pilot with immediate warning of failure of the vacuum system, providing valuable time prior to gyro failure. An inexpensive system that can alert the IFR pilot immediately in the event of vacuum failure. P/N 11-02205

VENTURI

2" VENTURI - This small aluminum venturi provides 2" Hg vacuum for operating turn/bank indicator. Has 1/8" NPT port. Use 1/4" tubing for hookup. Wt. 3.5 oz. P/N 15045



4" VENTURI - This venturi develops 4" Hg suction from double-throat venturi and 10" long horn. Used to operate a directional gyro or gyro horizon. When operating a directional gyro there is sufficient capacity to also operate a turn/bank. All aluminum construction. May require a suction regulator. Wt. 0.9 lb. P/N 15050



9" VENTURI - This "super venturi" is similar in appearance to the 4" venturi but with redesigned air passages and a recontoured, long (11-1/4") horn. It pulls enough vacuum to operate a gyro horizon, directional gyro and a turn/bank. Must be used with a suction regulator. P/N15052



SIGMA TEK CAGEABLE ATTITUDE GYROS



Short stops (engine off less than twelve minutes) and some aerobatic maneuvers may cause your attitude gyro to tumble or precess from its vertical reference. When the rotor is spinning, the gyros normal erection system is slow and can take several minutes to correct a large erection error. This non-locking caging feature allows the pilot to quickly align the gyro display and rotor to gyro case reference. The attitude gyro should only be caged for quick alignment during straight and level VFR flight using well defined earth horizon for reference or prior to take off. **All lighted gyros must order tray separately.**

| P/N | DESCRIPTION | PRICE |
|----------|--|-------|
| 5000B | Standard Gyro, Unlighted (non-cageable) | . |
| 5000B-F | Standard Gyro w/Vacuum Failure Flag (non-cageable) | . |
| 5000M-1 | With Caging Knob, 0° Panel Tilt | . |
| 5000M | With Caging Knob, 0° Panel Tilt, Lighted | . |
| 5000M-2 | With Caging Knob, 8° Panel Tilt | . |
| 5000M-5 | With Caging Knob, 8° Panel Tilt, Lighted | . |
| 5000B-46 | With Inclinator, 0° Panel Tilt | . |
| 5000B-45 | With Inclinator, 0° Panel Tilt, Lighted | . |
| 5000B-51 | With Inclinator, 8° Panel Tilt | . |
| 5000B-53 | With Inclinator, 8° Panel Tilt, Lighted | . |
| 5000M-3 | With Caging & Inclinator, 0° Panel Tilt | . |
| 5000M-6 | With Caging & Inclinator, 0° Panel Tilt, Lighted | . |
| 5000M-4 | With Caging & Inclinator, 8° Panel Tilt | . |
| 5000M-7 | With Caging & Inclinator, 8° Panel Tilt, Lighted | . |



VAC-2 VACUUM PUMP ADAPTER

The revolutionary VAC-2 adapter provides a direct replacement for the Lycoming vacuum pump pad adapter casting. The VAC-2 design provides a standard vacuum pump pad with provision for inverted oil pick-ups. Normally there is a T fitting mounted on the firewall that supplies the inverted oil. For many engines when this T fitting is used, the oil pressure will drop down into the yellow on the oil pressure gauge for three to five seconds when inverted. On some aircraft this drop in oil pressure will cause the prop to cycle

because of lack of oil pressure. With the VAC-2 adapter installed you do not have this drop in oil pressure. By using the VAC-2 adapter you have (1) the best inverted oil pickup, (2) a stock vacuum pump pad adapter. Used in place of Christen "T" fitting.

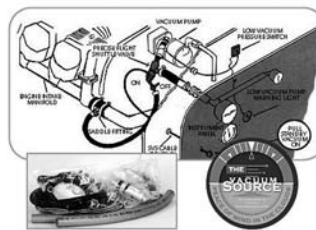
The VAC-2 comes complete with oil seal installed, gaskets, and MS 20822-10D fitting. Just slip vacuum pump gear assembly and washer into VAC-2 and install on engine. The standard Lycoming vacuum pump gear assembly and washer will fit into the B & C adapter. (Gear and washer shown are not included.)

VAC-2-4 for 4 Cylinder EnginesP/N 07-06790

VAC-2-6 for 6 Cylinder EnginesP/N 07-06795



STANDBY VACUUM SYSTEM SVS V



Manufactured by Precise Flight, Inc., this Standby Vacuum System, SVS V, is a new solution to the old problem of in-flight vacuum pump failures. It operates on a differential between manifold pressure and ambient pressure which is directed through a shuttle valve system to drive the flight instruments. When the vacuum pump fails, the pilot simply turns on the SVS system and adjusts

engine power settings while observing the instrument suction gauge to obtain adequate differential to operate the instruments. Kit includes low vacuum light and installs in 2-4 hours. STC'd for most aircraft. This kit can provide peace of mind on all flights and, if that pump ever fails, can be a real life saver. P/N 10-00400

AERO SAFE GUARDIAN I STANDBY VACUUM/PRESSURE SYSTEMS



The Aero Safe Guardian I Standby/ Pressure system is designed to provide the pilot with the most reliable standby source of instrument air available for single engine aircraft. STC'd for most Bellanca, Beech, Cessna, and Piper single engine aircraft. Specify aircraft make, model, year, and serial number when ordering.

- Vacuum systemP/N 10-00267
- Pressure systemP/N 10-00268

TURN COORDINATORS – TURN & BANKS



RCA TURN COORDINATOR 3 INCH. INDICATORS

Used in many production aircraft. Incorporates an electrical Gyro Turn Indicator with an inclinometer. The inclinometer, by movement of a ball in relation to the lubber lines, indicates the slip angle of aircraft while in a turn. The airplane on the dial rotates with reference to the indices. A power failure flag drops into view whenever the supply voltage is lost or when voltage has dropped below a level acceptable for proper operation of the gyro. Operates on 14 to 28V DC. New manufacture. First installation requires electrical connector and clamp. **DIMENSIONS:** Length: 6 1/5 in. Max, Width: 3 3/8 in Max, Height: 3 3/8 in Max, Weight: 1.9 lbs. Meets or exceeds requirements of FAA TSO C3b

| Description | Model | Part No. | Price |
|--|-----------------|----------|-------|
| Unlighted - Mating Connector: MS3106A-10SL-3S | RCA82A-11 | 10-01372 | . |
| Lighted (14V) - Mating Connector: MS3106A-10SL-3S | RCA83A-11-14 | 10-00485 | . |
| Lighted (28V) - Mating Connector: MS3106A-10SL-3S | RCA83A-11-28 | 10-01685 | . |
| Mating Connector | MS3106A-10SL-3S | 10-00789 | . |
| Cable Clamp | MS3057-4A | 10-00959 | . |



MID-CONTINENT TURN COORDINATOR (ELECTRIC)

Engineered for a long service life, the new "B" model turn coordinator features a proven AC rotor powered by a solid-state inverter. This creates less heat behind the panel. By utilizing a brushless rotor design, this instrument has one of the top ratings in the industry – 4800 hours MTBF. A direct replacement for most 3-pin turn coordinators, it is perfect for use in high-performance aircraft and cold-climate applications. The well-known "Z" models are an industry standard. Value priced and reliable they are in more aircraft than any other brand. All 3-inch turn coordinators operate from 10 to 32 volts DC for convenience and reliability.

1394T100-7Z 12-32v, UNLIT P/N 1394T100
1394T100-3Z 14v, LIT P/N 10-22514
1394T100-10RB (Cessna Autopilot) P/N 10-02311
MS3106A-10SL-3S Electrical Plug Connector. P/N 10-00789
MS3057-4A Cable Clamp P/N 10-00959
Note: 3A & 8A models have brushless rotors to reduce air noise

MID-CONTINENT TURN COORDINATORS (ELECTRIC) -B MODELS

Certified to FAA TSO C3b. OEM standard - proven reliability. Includes power warning indicator. Features: •4500 hours MTBF, more than double the original "Z" design • Brushless AC rotor operates on 14 or 28 VDC. • Proven reliability through HALT (Highly Accelerated Life Testing) requirements and OEM usage since 1999. • Improved "Off" warning flag pulls out of view when rotor is up to speed. • Is a direct replacement for the popular 1394T100-7Z and most standard 3-pin turn coordinators.

1394T100-7B Unlighted 12-32V P/N 10-02108
28V unit- 14V Bezel Lighting P/N 10-01024
Unlighted G300A Autopilot, ARC P/N 10-02653

FALCON TURN COORDINATOR (ELECTRIC)

3-1/8" cut out, 3-3/4" long. Small and lightweight, excellent for homebuilt aircraft. For 14V or 28V systems. Features power out warning flag. Unlighted. Includes electrical plug connector and cable clamp.

UNLIT 0° PANEL P/N 10-22510
UNLIT 8° PANEL P/N 10-02261
LIT 0° PANEL P/N 10-02262
LIT 8° PANEL P/N 10-02263
Connector MS3106A-10SL-3S P/N 11-04968
Cable Clamp MS3057-4A P/N 11-04969



BANK INDICATORS (BALL TYPE)

Bank indicators show the lateral inclination relative to the horizon. In turning, instantly register slightest departure from the correct banking angle. Bank scale has white markings on black background. New manufacture. Available in 2 models: 10°-10° Scale, 2.25" between mounting holes. P/N 10-00600
20° - 20° Scale, 5" between mounting holes... P/N 10-00700



WINTER SLIP INDICATORS

The basic flight instrument for co-ordinated turns. Available in two styles: Rectangular model fits easily in cramped panel space. Square model matches a 2-1/4" instrument hole, fits on either side of the panel. Both feature finely crafted metal cases and precision ball and tube assemblies.

Square P/N 10-03812
Rectangle P/N 10-03857

MID-CONTINENT TURN & BANK (ELECTRIC)



Built-in voltage regulator allows it to be used in either 14V or 28V systems. Small, compact unit and weighs only 1.2 lbs. Incorporates a small "power out" warning window which is black when normal current is being supplied but turns red in the case of electrical power failure. This turn and bank is now being used in many production aircraft. New installation requires electrical connector and cable clamp. New manufacture by Electrical Gyro Corp. Size: 3-3/8" x 3-3/8" x 3-3/4" long.

Unlighted P/N 1234T100
14V Bezel-Lit P/N 10-22614
28V Bezel-Lit P/N 10-22628
MS3106A-10SL-3S Electrical Plug Connector
MS3057-4A Cable Clamp

FALCON TURN & BANK (ELECTRIC)



The unit is an electrically-driven gyroscope. The inclinometer, by movement of a ball in relation to the lubber lines, indicates the slip angle of the aircraft while in a turn. A power flag drops into view whenever the voltage drops below a level which is required for proper operation of the gyro. It incorporates a built-in voltage regulator so it can be used with either 14VDC or 28VDC power supply system. It has a DC-AC-DC converter. Power Supply: 10-30VDC, Electrical Consumption:

Max. 1.0A at 11-26VDC Max. 0.35A at 26 to 30VDC, Operating Range: 2 min. Turn, Weight: 18 oz./0.5 kg, Length: approx. 5 inches Unlit
P/N 10-22515



RCA TURN & BANK (ELECTRIC)

Instrument is powered by an electrically driven DC precision gyro with an inclinometer. It gives the pilot turn and bank information. The RCA56 series is an all volt instrument, with a power warning flag, a black or white ball inclinometer and either lighted or non-lighted. DIMENSIONS: Length: 6 1/4 in. Max Width: 3 3/8 in. Max Height: 3 3/8 in. Max Weight: 1.9 lbs.

Meets or exceeds requirements of FAA TSO C3b New manufacture by A.I.D. RC Allen. New installation requires plug connector & cable clamp.
RCA56-3B, UNLIT P/N 10-01684
RCA56-3BL, LIT P/N 10-02138
Plug Connector P/N MS3106A-10SL-3S
Cable Clamp P/N MS3057-4A



RCA MINIATURE TURN/BANK (ELECTRIC)

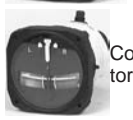
Similar to the air driven model but the gyroscope is electrically driven. Connection is by electrical plug. Power: 14 or 28V DC. New manufacture.

28V, 4 Min Turn Yellow markings P/N 10-03429
14V, 2 Minute Turn P/N 10-00499
14V, 2 Minute Turn 14/28 V Lit P/N 10-02587
Plug Connector P/N MS3106A-10SL-3S
Cable Clamp P/N MS3057-4A

AN5820-1 TURN & BANK (VACUUM)



AN5820-1 Turn & Bank indicator completely overhauled and certified to FAA requirements. Fresh matte-white dial markings with "doghouses". Power: 1.8" to 2.2" Hg vacuum produced by a 2" venturi or vacuum pump. Size: 3.25"x 3.25"x 4.75" long. Weight: 1.5 lbs. 1 year warranty.
P/N AN5820-1



TURN & BANK KIT

Consists of an overhauled and certified Turn & Bank indicator, 2" venturi, hoses, fittings and instrument screws.
P/N 10-00300

MINIATURE 2-1/4" TURN & SLIP INDICATOR



Widely used in the turbo-prop market as standard equipment, this dependable instrument fits into the tightest panel space. The AC brushless rotor offers great reliability. Internal lighting options of 5, 14 and 28 volt offer greater flexibility. These were factory installed on the DeHavilland Dash 8 and Boeing Chinook CH47

14V Turn & Slip P/N 10-00305
28V Turn & Slip P/N 10-00310
Plug Connector P/N MS3106A-10SL-3S
Cable Clamp P/N MS3057-4A



2-1/4" INCLINOMETER

This in-dash mounted inclinometer is lightweight and fits a standard 2-1/4" instrument hole. Used on Kitfox aircraft & ideal for virtually any homebuilt. P/N 10-00705

IN

TEMPEST DRY AIR PUMPS



TEMPEST TORNADO 3000 DRY AIR PUMPS

New revolutionary LRT oil drain, patent pending feature is designed to drain oil, caused by a leaking Garlock Seal, before it reaches the drive coupler. Provides a tell tale leak path. Closed front ends, designed to eliminate oil and oil residues from entering into the pump. Helps prevent pump failures

caused by oil entering into the drive mechanism or rotor and vanes.
 Tempest Tornado 3000 Model AA3215CC P/N 10-00609.....
 Tempest Tornado 3000 Model AA3216CW P/N 10-00610.....
 Tempest Tornado 3000 Model AA3215CC-9 ... P/N 10-00611.....

TEMPEST VACUUM PUMP COOLING SHROUDS



Cooling shrouds have been proven to reduce pump operating temperature and therefore extend service life. Testing has proven reduction in operating temperature by as much as 15%. Saves money - extends service life of dry air pumps. AA20T fits all 200/240 series pumps. AA40T fits all 400 series pumps. Sigma - Tek® pumps are not eligible.

AA207.....P/N 10-02796.....
 AA40TP/N 10-02797.....

TEMPEST ELECTRIC AUX. DRY AIR PUMPS



Electric auxiliary dry air pumps are recommended for single engine aircraft flown in IFR conditions as a back-up in the event the primary vacuum pump fails. These pumps are FAA-PMA approved as direct replacements for Airborne pumps previously installed under STC eligibility and STC approval for these pumps for many additional aircraft is pending. Add \$200 core charge on both models. Electric Auxiliary Dry Air Pump Model AA4A2-1 P/N 10-00585.....
 Electric Auxiliary Dry Air Pump Model AA4A3-1 P/N 10-00584.....

TEMPEST DRY AIR PUMPS



Tempest dry air pumps, from Aero Accessories, are 100% new production and use all new components. They are FAA-PMA approved replacements for like and similar models on many installations. These pumps are available in the 200, 240, and 400 series.
 The AA211CC series come with a 1-year, unlimited hour warranty and the AA241CC, AA242CW, and the AA441CC and AA442CW series come with a 1-year, 500 hour warranty. Warranties expire 2-years from date of manufacture. \$100.00 Core Charge applied to Overhauled Pumps



***Core Rebate available for new pumps.**

TEMPEST DRY AIR PUMPS - OVERHAULED

| MODEL | DESCRIPTION | PART NO. | PRICE |
|-----------|-------------------------------|------------|-------|
| 215CCWIP | Overhauled Dry Air Pump w/WIP | 10-24000-1 | . |
| 216CWWIP | Overhauled Dry Air Pump w/WIP | 10-24600-1 | . |
| 241CC | Overhauled Dry Air Pump | 10-24700-1 | . |
| 241CC-13 | Overhauled Dry Air Pump | 10-01969 | . |
| 241CC-15 | Overhauled Dry Air Pump | 10-01968 | . |
| 242CW | Overhauled Dry Air Pump | 10-24800-1 | . |
| 242CW-4 | Overhauled Dry Air Pump | 10-01971 | . |
| 242CW-10 | Overhauled Dry Air Pump | 10-01972 | . |
| 441CC | Overhauled Dry Air Pump | 10-01976 | . |
| 441CC-3 | Overhauled Dry Air Pump | 10-01974 | . |
| 441CC-7 | Overhauled Dry Air Pump | 10-01975 | . |
| 441CC-7A | Overhauled Dry Air Pump | 10-01976 | . |
| 441CC-9 | Overhauled Dry Air Pump | 10-01977 | . |
| 441CC-11 | Overhauled Dry Air Pump | 10-01978 | . |
| 441CC-17 | Overhauled Dry Air Pump | 10-01979 | . |
| 441CC-23 | Overhauled Dry Air Pump | 10-01980 | . |
| 442CW | Overhauled Dry Air Pump | 10-23600-1 | . |
| 442CW-4 | Overhauled Dry Air Pump | 10-01981 | . |
| 442CW-6 | Overhauled Dry Air Pump | 10-01982 | . |
| 442CW-8 | Overhauled Dry Air Pump | 10-01983 | . |
| 442CW-10 | Overhauled Dry Air Pump | 10-01984 | . |
| 442CW-12 | Overhauled Dry Air Pump | 10-01146 | . |
| 442CW-14 | Overhauled Dry Air Pump | 10-01985 | . |
| 442CW-20 | Overhauled Dry Air Pump | 10-01986 | . |
| AA215CWHK | Overhauled Dry Air Pump | 10-01554 | . |
| AA216CCHK | Overhauled Dry Air Pump | 10-01155 | . |

TEMPEST DRY AIR PUMPS - NEW

| MODEL | DESCRIPTION | PART NO. | PRICE |
|------------|------------------|----------|-------|
| AA241CC | New Dry Air Pump | 10-24700 | . |
| AA241CC-13 | New Dry Air Pump | 10-01987 | . |
| AA241CC-15 | New Dry Air Pump | 10-01988 | . |
| AA242CW | New Dry Air Pump | 10-24800 | . |
| AA242CW-4 | New Dry Air Pump | 10-01989 | . |
| AA242CW-10 | New Dry Air Pump | 10-01990 | . |
| AA3215CC | New Dry Air Pump | 10-00609 | . |
| AA3216CW | New Dry Air Pump | 10-00610 | . |
| AA215CC-9 | New Dry Air Pump | 10-00611 | . |
| AA441CC | New Dry Air Pump | 10-23500 | . |
| AA441CC-3 | New Dry Air Pump | 10-01991 | . |
| AA441CC-7 | New Dry Air Pump | 10-01992 | . |
| AA441CC-9 | New Dry Air Pump | 10-01993 | . |
| AA441CC-11 | New Dry Air Pump | 10-01994 | . |
| AA441CC-17 | New Dry Air Pump | 10-01995 | . |
| AA442CW | New Dry Air Pump | 10-23600 | . |
| AA442CW-4 | New Dry Air Pump | 10-01996 | . |
| AA442CW-6 | New Dry Air Pump | 10-01997 | . |
| AA442CW-8 | New Dry Air Pump | 10-01998 | . |
| AA442CW-10 | New Dry Air Pump | 10-01999 | . |
| AA442CW-12 | New Dry Air Pump | 10-02001 | . |
| AA442CW-14 | New Dry Air Pump | 10-02002 | . |
| AA442CW-20 | New Dry Air Pump | 10-02003 | . |
| | | | |
| | | | |
| | | | |

IN

TEMPEST PNEUMATIC COMPONENTS

PNEUMATIC FITTINGS

| MODEL | DESCRIPTION | PART NO. | PRICE |
|----------------|-------------------------------------|----------|-------|
| AA1K1-4-6 | Fitting -1/4 NPT x 3/8 Hose | 10-00914 | . |
| AA1K1-4-8 | Fitting -1/4 NPT x 1/2 Hose | 10-01923 | . |
| AA1K1-6-6 | Fitting -3/8 NPT x 3/8 Hose | 10-01924 | . |
| AA1K1-6-8 | Fitting -3/8 NPT x 1/2 Hose | 10-00915 | . |
| AA1K1-6-10 | Fitting -3/8 NPT x 5/8 Hose | 10-00916 | . |
| AA1K1-8-10 | Fitting -1/2 NPT x 5/8 Hose | 10-00917 | . |
| AA1K1-8-12 | Fitting -1/2 NPT x 3/4 Hose | 10-01925 | . |
| AA1K8-6-8 | Fitting -3/8 NPT x 1/2 Hose | 10-01926 | . |
| AA1K8-6-10 | Fitting -3/8 NPT x 5/8 Hose | 10-01147 | . |
| AA1K9-4-6 | Fitting -1/4 NPT x 3/8 Hose (A-450) | 10-01927 | . |
| AA1K9-6-10 | Fitting -3/8 NPT x 5/8 Hose (A-450) | 10-01928 | . |
| AA1K10-2-4 | Fitting -1/8 NPT x 1/4 Hose | 10-01929 | . |
| AA1K10-4-4 | Fitting -1/4 NPT x 1/4 Hose | 10-01930 | . |
| AA1K10-4-6 | Fitting -1/4 NPT x 3/8 Hose | 10-00918 | . |
| AA1K10-4-8 | Fitting -1/4 NPT x 1/2 Hose | 10-01932 | . |
| AA1K10-6-10 | Fitting -3/8 NPT x 5/8 Hose | 10-01933 | . |
| AA1K10-6-12 | Fitting -3/8 NPT x 3/4 Hose | 10-01934 | . |
| AA1K10-8-12 | Fitting -1/2 NPT x 3/4 Hose | 10-01935 | . |
| AA1K14-6-6-6 | Fitting -3/8 NPT x 3/8 x 3/8 Hose | 10-01936 | . |
| AA1K14-10-10 | Fitting -5/8 NPT x 5/8 x 5/8 Hose | 10-01937 | . |
| AA1K17-4-8-6-4 | Fitting -1/4 NPTx1/2x3/8x1/4Hose | 10-01938 | . |
| AA1K22-10-10 | Fitting -5/8 NPT x 5/8 Hose | 10-01148 | . |
| AA1K24-2 | Fitting -3/4 Hose Flange | 10-01939 | . |
| AA1K30-6-6-4 | Fitting -3/8 x 3/8 x 1/4 Hose | 10-01940 | . |
| AA1K30-10-6-6 | Fitting -5/8 x 3/8 x 3/8 Hose | 10-01942 | . |
| AA1K31-4-6-4 | Fitting -1/4 NPTx1/2x3/8x1/4 Hose | 10-01943 | . |
| AA1K43-10-10 | Fitting -5/8 x 5/8 Hose | 10-01949 | . |
| AA1K43-12-12 | Fitting -3/4 x 3/4 Hose | 10-01944 | . |

PNEUMATIC FILTERS

| MODEL | DESCRIPTION | PART NO. | PRICE |
|-----------|----------------------|----------|-------|
| AAD9-14-3 | Filter | 10-00923 | . |
| AAD9-14-5 | Filter | 10-00924 | . |
| AAD9-18-1 | Filter | 10-01354 | . |
| AA2J4-4 | Filter | 10-02677 | . |
| AA2J4-6 | Line Mounted Filter | 10-01946 | . |
| AA2J4-7 | Line Mounted Filter | 10-01947 | . |
| AA1J7-1 | Gyro Filter Assembly | 10-01948 | . |
| AA1J7-2 | Gyro Filter Assembly | 10-01949 | . |
| ARB3-5-1 | Garter Filter | 10-01333 | . |

MISCELLANEOUS PARTS

| MODEL | DESCRIPTION | PART NO. | PRICE |
|------------|------------------------------------|----------|-------|
| 82-06768 | Coupling | 10-01951 | . |
| 82-50130B | Flange Gasket | 10-01952 | . |
| 82-50130BP | Flange Gasket-Package of 10 | 10-01953 | . |
| 82-50195 | WIP Plug-New Pumps Only | 10-01954 | . |
| 82-50195P | WIP Plug-New Pumps Only-Pkg. of 10 | 10-01955 | . |
| 82-50195A | WIP Plug-O/H Pumps Only | 10-01958 | . |
| 82-50195AP | WIP Plug-O/H Pumps Only-Pkg. of 10 | 10-01959 | . |
| 82-50155DP | LRT Diverter Kit | 10-01961 | . |
| AA9144 | Prop Governor Gasket | 10-01962 | . |
| AA5-77-1 | WIP Plug-O/H Pumps Only-Pkg. of 10 | 10-01963 | . |
| AAF7-236-1 | Aux. Switch 14 Volt DC | 10-01964 | . |
| AAF7-236-2 | Aux. Switch 28 Volt DC | 10-01965 | . |

VACUUM REGULATORS

| MODEL | DESCRIPTION | PART NO. | PRICE |
|------------|-----------------------------|----------|-------|
| AA1H5-25A | Regulating Valve | 10-03457 | . |
| AA2H3-2 | Regulating Valve | 10-03458 | . |
| AA2H3-5 | Regulating Valve | 10-03459 | . |
| AA2H3-6 | Regulating Valve | 10-03460 | . |
| AA2H3-12 | Regulating Valve | 10-03461 | . |
| AA2H3-23 | Regulating Valve | 10-03462 | . |
| AA2H3-48 | Regulating Valve | 10-03463 | . |
| O/H 2H3-20 | Overhauled Regulating Valve | 10-03399 | . |

OVERHAULED AIRBORNE SOLENOIDS

| MODEL | DESCRIPTION | PART NO. | PRICE |
|--------|-------------|----------|-------|
| 1H15-6 | Solenoid | 10-01860 | . |

OVERHAULED AIRBORNE VACUUM MANIFOLDS

| MODEL | DESCRIPTION | PART NO. | PRICE |
|---------|-----------------|----------|-------|
| 1H5-1 | Vacuum Manifold | 10-01861 | . |
| 1H5-2 | Vacuum Manifold | 10-01862 | . |
| 1H5-3 | Vacuum Manifold | 10-01863 | . |
| 1H5-4 | Vacuum Manifold | 10-01864 | . |
| 1H5-6 | Vacuum Manifold | 10-01865 | . |
| 1H5-8 | Vacuum Manifold | 10-01866 | . |
| 1H5-9 | Vacuum Manifold | 10-01867 | . |
| 1H5-10 | Vacuum Manifold | 10-01868 | . |
| 1H5-13 | Vacuum Manifold | 10-01869 | . |
| 1H5-14 | Vacuum Manifold | 10-01870 | . |
| 1H5-18 | Vacuum Manifold | 10-01871 | . |
| 1H5-19 | Vacuum Manifold | 10-01872 | . |
| 1H5-20 | Vacuum Manifold | 10-01873 | . |
| 1H5-21 | Vacuum Manifold | 10-01874 | . |
| 1H5-22 | Vacuum Manifold | 10-01875 | . |
| 1H5-23 | Vacuum Manifold | 10-01876 | . |
| 1H5-24 | Vacuum Manifold | 10-01877 | . |
| 1H5-25A | Vacuum Manifold | 10-03457 | . |

OVERHAULED AIRBORNE PRESSURE MANIFOLDS

| MODEL | DESCRIPTION | PART NO. | PRICE |
|---------|-------------------|----------|-------|
| 1H24-3 | Pressure Manifold | 10-01879 | . |
| 1H24-6 | Pressure Manifold | 10-01880 | . |
| 1H24-7 | Pressure Manifold | 10-01881 | . |
| 1H24-8 | Pressure Manifold | 10-01882 | . |
| 1H24-10 | Pressure Manifold | 10-01883 | . |
| 1H24-11 | Pressure Manifold | 10-01884 | . |
| 1H24-12 | Pressure Manifold | 10-01885 | . |
| 1H24-18 | Pressure Manifold | 10-01886 | . |
| 1H24-20 | Pressure Manifold | 10-01887 | . |

\$200 CORE CHARGE

OVERHAULED AIRBORNE CHECK VALVES

| MODEL | DESCRIPTION | PART NO. | PRICE |
|--------|--------------|----------|-------|
| 1H37-1 | De-Ice Valve | 10-01888 | . |
| 1H37-3 | De-Ice Valve | 10-01889 | . |
| 1H37-4 | De-Ice Valve | 10-01890 | . |

\$200 CORE CHARGE

OVERHAULED AIRBORNE CHECK VALVES

| MODEL | DESCRIPTION | PART NO. | PRICE |
|---------|--------------|----------|-------|
| 1H43-11 | De-Ice Valve | 10-01891 | . |
| 1H43-12 | De-Ice Valve | 10-01892 | . |
| 1H43-13 | De-Ice Valve | 10-01893 | . |
| 1H43-14 | De-Ice Valve | 10-01894 | . |
| 1H43-15 | De-Ice Valve | 10-01895 | . |
| 1H43-16 | De-Ice Valve | 10-01896 | . |
| 1H43-20 | De-Ice Valve | 10-01897 | . |
| 1H43-21 | De-Ice Valve | 10-01898 | . |
| 1H44-12 | De-Ice Valve | 10-01899 | . |
| 1H44-16 | De-Ice Valve | 10-01906 | . |
| 1H44-17 | De-Ice Valve | 10-01907 | . |
| 1H44-18 | De-Ice Valve | 10-01908 | . |
| 2H22-11 | De-Ice Valve | 10-01909 | . |
| 2H22-16 | De-Ice Valve | 10-01910 | . |
| 2H48-14 | De-Ice Valve | 10-01911 | . |
| 2H48-22 | De-Ice Valve | 10-01913 | . |
| 2H48-23 | De-Ice Valve | 10-01914 | . |
| 2H48-24 | De-Ice Valve | 10-01916 | . |
| 2H59-3 | De-Ice Valve | 10-01917 | . |
| 2H59-4 | De-Ice Valve | 10-01919 | . |
| 2H59-8 | De-Ice Valve | 10-01920 | . |
| 2H59-16 | De-Ice Valve | 10-01921 | . |

\$200 CORE CHARGE

IN

TEMPEST PNEUMATIC COMPONENTS

TEMPEST OVERHAULED AIRBORNE VACUUM REGULATORS

| Model | Description | Superseded by |
|---------|---------------------------------------|---------------|
| 133A2 | Overhauled Airborne Vacuum Regulators | 2H3-1 |
| 133A3 | Overhauled Airborne Vacuum Regulators | 2H3-2 |
| 133A4 | Overhauled Airborne Vacuum Regulators | 2H3-12 |
| 133A6 | Overhauled Airborne Vacuum Regulators | 2H3-4 |
| 133A7 | Overhauled Airborne Vacuum Regulators | 2H3-7 |
| 133A8 | Overhauled Airborne Vacuum Regulators | 2H3-25 |
| 133A13 | Overhauled Airborne Vacuum Regulators | 2H3-11 |
| 133A16 | Overhauled Airborne Vacuum Regulators | 2H3-16 |
| 133A17 | Overhauled Airborne Vacuum Regulators | 2H3-13 |
| 133A18 | Overhauled Airborne Vacuum Regulators | 2H3-14 |
| 133B3 | Overhauled Airborne Vacuum Regulators | 2H3-6 |
| 133B4 | Overhauled Airborne Vacuum Regulators | 2H3-22 |
| 133B5-1 | Overhauled Airborne Vacuum Regulators | 2H3-8 |
| 133B5-2 | Overhauled Airborne Vacuum Regulators | 2H3-9 |
| 133C1 | Overhauled Airborne Vacuum Regulators | 2H3-5 |
| 133C3 | Overhauled Airborne Vacuum Regulators | 2H3-10 |

TEMPEST VACUUM MANIFOLD

| Model | Description | Part No. | Price |
|--------------------------|-----------------|----------|-------|
| 2H3-1 | Vacuum Manifold | 10-02970 | . |
| 2H3-4 | Vacuum Manifold | 10-02972 | . |
| 2H3-5 | Vacuum Manifold | 10-02973 | . |
| 2H3-6 | Vacuum Manifold | 10-02974 | . |
| \$200 CORE CHARGE | | | |

TEMPEST PRESSURE MANIFOLD

| Model | Description | Part No. | Price |
|--------------------------|-------------------|----------|-------|
| 2H3-7 | Pressure Manifold | 10-02976 | . |
| 2H3-8 | Pressure Manifold | 10-02977 | . |
| 2H3-9 | Pressure Manifold | 10-02978 | . |
| 2H3-10 | Pressure Manifold | 10-02979 | . |
| 2H3-11 | Pressure Manifold | 10-02980 | . |
| 2H3-12 | Pressure Manifold | 10-02981 | . |
| 2H3-13 | Pressure Manifold | 10-02982 | . |
| 2H3-14 | Pressure Manifold | 10-02983 | . |
| 2H3-15 | Pressure Manifold | 10-02984 | . |
| \$200 CORE CHARGE | | | |

TEMPEST CHECK VALVE

| Model | Description | Part No. | Price |
|--------------------------|-------------|----------|-------|
| 2H3-16 | Check Valve | 10-03004 | . |
| 2H3-19 | Check Valve | 10-03006 | . |
| 2H3-22 | Check Valve | 10-03007 | . |
| \$200 CORE CHARGE | | | |

TEMPEST DE-ICE VALVE

| Model | Description | Part No. | Price |
|--------------------------|--------------|----------|-------|
| 2H3-25 | De-Ice Valve | 10-03013 | . |
| 2H3-27 | De-Ice Valve | 10-03015 | . |
| 2H3-32 | De-Ice Valve | 10-03017 | . |
| 2H3-35 | De-Ice Valve | 10-03018 | . |
| 2H3-38 | De-Ice Valve | 10-03019 | . |
| 2H3-44 | De-Ice Valve | 10-03022 | . |
| 2H3-45 | De-Ice Valve | 10-03023 | . |
| 2H3-46 | De-Ice Valve | 10-03024 | . |
| 2H3-48 | De-Ice Valve | 10-03025 | . |
| \$200 CORE CHARGE | | | |

Due to a shortage of cores Vacuum / Pressure regulators may not be in stock. Customer may need to ship their unit to Aircraft Spruce for overhaul.

TEMPEST OVERHAULED AIRBORNE CROSS-REFERENCE

| Model | Description | Superseded by |
|---------|---|---------------|
| 1H30-1 | Overhauled Airborne Pressure Regulators | 2H30-1 |
| 1H30-2 | Overhauled Airborne Pressure Regulators | 2H30-2 |
| 1H30-3 | Overhauled Airborne Pressure Regulators | 2H30-3 |
| 1H30-6 | Overhauled Airborne Pressure Regulators | 2H30-6 |
| 1H30-8 | Overhauled Airborne Pressure Regulators | 2H30-8 |
| 1H30-9 | Overhauled Airborne Pressure Regulators | 2H30-9 |
| 1H30-11 | Overhauled Airborne Pressure Regulators | 2H30-11 |
| 1H30-13 | Overhauled Airborne Pressure Regulators | 2H30-13 |
| 1H30-14 | Overhauled Airborne Pressure Regulators | 2H30-14 |

TEMPEST PRESSURE REGULATORS

| Model | Description | Part No. | Price |
|--------------------------|---------------------|----------|-------|
| 2H30-1 | Pressure Regulators | 10-03029 | . |
| 2H30-2 | Pressure Regulators | 10-03037 | . |
| 2H30-3 | Pressure Regulators | 10-03039 | . |
| 2H30-6 | Pressure Regulators | 10-03042 | . |
| 2H30-8 | Pressure Regulators | 10-03043 | . |
| 2H30-9 | Pressure Regulators | 10-03045 | . |
| 2H30-11 | Pressure Regulators | 10-03047 | . |
| 2H30-13 | Pressure Regulators | 10-03053 | . |
| 2H30-14 | Pressure Regulators | 10-03054 | . |
| 2H30-17 | Pressure Regulators | 10-03056 | . |
| 2H30-27 | Pressure Regulators | 10-03057 | . |
| 2H30-28 | Pressure Regulators | 10-03060 | . |
| 2H30-32 | Pressure Regulators | 10-03066 | . |
| \$200 CORE CHARGE | | | |

Due to a shortage of cores Vacuum / Pressure regulators may not be in stock. Customer may need to ship their unit to Aircraft Spruce for overhaul.

IN

VACUUM PUMP FITTINGS – VACUUM PUMPS

AIRBORNE VACUUM PUMP REPAIR KITS



Basic Kits – These FAA/PMA kits include rotor, vanes, gasket, and drive coupling.

For Airborne 211/212 Pumps
P/N 10-00901

For Airborne 200 cc/cw Pumps
P/N 10-00902

For Airborne 241/242 Pumps P/N 10-00903

For Airborne 441/442 Pumps P/N 10-01001

Deluxe Kits – These FAA/PMA kits include rotor, coupler, external spline, bushing, blades, nut, cushion washer and band gaskets. Washer and gaskets not included on 200CC kits. Installation instructions included.

For Airborne 211/212 pumps P/N 10-01901

For Airborne 241/242 pumps P/N 10-01903

For Airborne 441/442 pumps P/N 10-01904

RAPCO FAA APPROVED FITTINGS



RA1K1-6-10 - This 90° fitting with 5/8" hose and 3/8" NPT is used in most inlet threaded ports of 200 series vacuum pumps and is a FAA PMA direct replacement for the Airborne Model 1K1-6-10. This 90° fitting has superior flow and low pressure loss.
P/N 10-00395

RA1K8-6-10 - This 152° fitting with 5/8" hose and 3/8" NPT is used in most outlet threaded ports of 200 series vacuum pumps and is a FAA PMA direct replacement for the Airborne. P/N 10-00396



RA1K31-4-6-4 - This 3/8" and 1/4" hose, 1/4" NPT, "T" fitting is used in most threaded ports of the flight instruments and is a FAA PMA direct replacement for the Airborne Model 1K31-4-6-4.
P/N 10-00397

RA1K10-4-6 - This 3/8" and 1/4" hose, 1/4" NPT fitting is used in most inlet threaded ports of the flight instruments and is a direct replacement for the Airborne Model 1K10-4-6.
P/N 10-00398



RA1K10-6-10 - This fitting with 5/8" hose and 3/8" NPT is used in most inlet and outlet threaded ports of the 200 series vacuum pump. The fitting is 5/8" hose out with 3/8" NPT threads. The Rapco, Inc. fitting is a FAA PMA direct replacement for the Airborne Model 1K10-6-10..
P/N 10-01849

RA1K1-4-6 - This 90° fitting with 3/8" hose, 1/4" NPT is used in most threaded ports of the flight instruments and is a FAA PMA direct replacement for the Airborne. P/N 10-01130



PUMP STATOR HOUSINGS

215/216 Pump Stator Housing 82-50122A
P/N 10-00919

\$15.00 Core Charge

241/242 Pump Stator Housing 82-50122-1
P/N 10-00920

\$35.00 Core Charge

441/442 Pump Stator Housing 82-50122-2
P/N 10-00921

\$15.00 Core Charge

RAPCO RA-1H5-1 MANIFOLD CHECK VALVE



This valve is used in many Multi-Engine General Aviation applications. The Rapco, Inc. FAA PMA Multi-Engine manifold check valve is a direct replacement for the Airborne Model 1H5-1.

P/N 10-01131

RAPCO VACUUM SYSTEM KIT



This Vacuum System Kit is ideal for use on experimental aircraft, allowing the kit builder to obtain all of the necessary components of their vacuum system in one convenient kit. The price of this kit reflects a substantial discount over the individual prices of the components if purchased separately.

rately.

This Kit Includes:

- 1 RA215CC Vacuum Pump w/Gasket
- 1 RA2H3-12 Vac. Regulator w/Garter Filter
- 1 RA-IJ7-1 Filter Assembly
- 1 RA1K1-6-10 90° 5/8" Fitting
- 1 RA1K8-6-10 152° 5/8" Fitting
- 2 RA1K31-4-6-4 3/8" and 1/4" T-Fitting
- 2 RA1K10-4-6 3/8" Fitting
- 1 - 5/8" x 3' Hose
- 1 - 3/8" x 5' Hose
- 1 - 1/4" x 6' Hose
- 10 - 04 5/8" Hose Clamp
- 4 - 06 7/8" Hose Clamp
- 1 Installation Diagram
- 1 Suction Gauge

Kit with RA215CC Pump - For engines with **COUNTER CLOCKWISE** turning accessory drives. P/N 11-00099

Kit with RA216CW Pump - For engines with **CLOCKWISE** turning accessory drives. P/N RA-VAC-K2

Kit Without Pump P/N 10-02010

AIRWOLF VACUUM REGULATOR & FIREWALL ADAPTER

Fully adjustable, cleanable, and rebuildable. (2) 1/2" NPT ports make it fully adaptable to all aircraft.

Vacuum Regulator/Firewall Adapter P/N 10-00769

Adapter, 5/8" x 1/2" hose P/N 10-00770

Adapter, 5/8" x (2) 1/2" hoses P/N 10-00771

Adapter, 5/8" x (2) 3/8" hoses P/N 10-00772



GARWIN / PESCO REMANUFACTURED WET PUMPS

Our supplier remanufactures run-out Pesco and Garwin wet pumps to factory specifications. FAA Approved. These wet pumps do not include the pump drives. Order separately.

Note: Pump Drive is included.

Pesco 194 pump P/N 10-00028

Pesco 207 pump P/N 10-00029

Garwin G455 pump P/N 10-00027

Garwin G450 pump P/N 10-00026

Add . core charge to purchase price. Like cores in repairable condition may be returned to Aircraft Spruce West for full core credit. Return cores via UPS and reference invoice number.

AIRWOLF 3P194-AFC WET VACUUM PUMP



The Airwolf 3P194-F pump incorporates new manufacturing techniques, employs superior bearings to those found in dry pumps, an dis machine to extremely tight tolerances. Replaces all 211/212, 215/216, 242/244 Series Airborne / Champion / Rapco / Tempest / Dry Vacuum Pumps, Pesco 3P194-F Garwin G-455 Wet Vacuum Pumps & Sigma Tek 1U128-006 Dry Vacuum Pumps, regardless of direction of pump rotation. This pump works on ALL aircraft that do not have deice boots. Comes with a 2,000 hr, 10 year warranty Airwolf Factory Warranty. \$200 Core charge

P/N 10-00707

IN

VACUUM PUMPS



RAPCO DRY AIR/VACUUM PUMPS

Rapco dry air pumps are FAA approved and available new or overhauled. Committed to quality and customer satisfaction Rapco offers new improved design features backed by an outstanding warranty.

NEW RAPCO DRY AIR PUMPS are FAA – PMA approved. All models come with cooling fins and an inspection port to help determine replacement time. The warranty is for or two years with unlimited hours. No Core Charge on New pumps.

| Rapco New Dry Air Vacuum Pumps | | | |
|--------------------------------|-------------------|-----------------|-------|
| Description | Rapco Part Number | Our Part Number | Price |
| RA215CC New Rapco Pump | RA215CC | 10-23925 | . |
| RA215CC-9 New Rapco Pump | RA215CC-9 | 10-03401 | . |
| RA216CW New Rapco Pump | RA216CW | 10-23935 | . |
| RA241CC New Rapco Pump | RA241CC | 10-23950-1 | . |
| RA241CC-13 New Rapco Pump | RA241CC-13 | 10-03447 | . |
| RA241CC-15 New Rapco Pump | RA241CC-15 | 10-03448 | . |
| RA242CW New Rapco Pump | RA242CW | 10-23960-1 | . |
| RA242CW-4 New Rapco Pump | RA242CW-4 | 10-03449 | . |
| RA242CW-10 New Rapco Pump | RA242CW-10 | 10-03450 | . |
| RA441CC New Rapco Pump | RA441CC | 10-01126 | . |
| RA441CC-3 New Rapco Pump | RA441CC-3 | 10-03074 | . |
| RA441CC-7 New Rapco Pump | RA441CC-7 | 10-03075 | . |
| RA441CC-9 New Rapco Pump | RA441CC-9 | 10-03076 | . |
| RA441CC-17 New Rapco Pump | RA441CC-17 | 10-03077 | . |
| RA441CC-23 New Rapco Pump | RA441CC-23 | 10-03078 | . |
| RA442CW New Rapco Pump | RA442CW | 10-01127 | . |
| RA442CW-4 New Rapco Pump | RA442CW-4 | 10-03079 | . |
| RA442CW-6 New Rapco Pump | RA442CW-6 | 10-03080 | . |
| RA442CW-8 New Rapco Pump | RA442CW-8 | 10-03081 | . |
| RA442CW-12 New Rapco Pump | RA442CW-12 | 10-01128 | . |
| RA442CW-14 New Rapco Pump | RA442CW-14 | 10-03082 | . |
| RA442CW-20 New Rapco Pump | RA442CW-20 | 10-03083 | . |

OVERHAULED DRY AIR PUMPS are FAA approved and come with an FAA 8130-3 form. The warranty is for 1000 hours or one year, which ever comes first on 200 series pumps, and 400 hours or one year which ever comes first on 240 or 400 series pumps.

| Rapco Overhauled Dry Air Vacuum Pumps | | | |
|---------------------------------------|-------------------|-----------------|-------|
| Description | Rapco Part Number | Our Part Number | Price |
| 211CC Overhauled Pump | 211CC | 10-23930 | . |
| 211CC-9 Overhauled Pump | 211CC-9 | 10-23931 | . |
| 212CW Overhauled Pump | 212CW | 10-23940 | . |
| 215CC Overhauled Pump | 215CC | 10-03084 | . |
| 216CW Overhauled Pump | 216CW | 10-03085 | . |
| 241CC Overhauled Pump | 241CC | 10-23950 | . |
| 241CC-13 Overhauled Pump | 241CC-13 | 10-03086 | . |
| 241CC-15 Overhauled Pump | 241CC-15 | 10-03087 | . |
| 242CW Overhauled Pump | 242CW | 10-23960 | . |
| 242CW-4 Overhauled Pump | 242CW-4 | 10-03088 | . |
| 242CW-10 Overhauled Pump | 242CW-10 | 10-03089 | . |
| 441CC Overhauled Pump | 441CC | 10-02349 | . |
| 441CC-3 Overhauled Pump | 441CC-3 | 10-03090 | . |
| 441CC-7 Overhauled Pump | 441CC-7 | 10-03091 | . |
| 441CC-9 Overhauled Pump | 441CC-9 | 10-03092 | . |
| 441CC-11 Overhauled Pump | 441CC-11 | 10-03093 | . |
| 441CC-13 Overhauled Pump | 441CC-13 | 10-03094 | . |
| 441CC-17 Overhauled Pump | 441CC-17 | 10-03095 | . |
| 441CC-23 Overhauled Pump | 441CC-23 | 10-03096 | . |
| 442CW Overhauled Pump | 442CW | 10-02350 | . |
| 442CW-4 Overhauled Pump | 442CW-4 | 10-03097 | . |
| 442CW-6 Overhauled Pump | 442CW-6 | 10-03098 | . |
| 442CW-8 Overhauled Pump | 442CW-8 | 10-03099 | . |
| 442CW-10 Overhauled Pump | 442CW-10 | 10-03101 | . |
| 442CW-12 Overhauled Pump | 442CW-12 | 10-02351 | . |
| 442CW-14 Overhauled Pump | 442CW-14 | 10-03102 | . |
| 442CW-16 Overhauled Pump | 442CW-16 | 10-03103 | . |
| 442CW-18 Overhauled Pump | 442CW-18 | 10-03104 | . |
| 442CW-20 Overhauled Pump | 442CW-20 | 10-03105 | . |

Add Core Charge on Overhauled Pumps to purchase price. 200 Series \$100.00 400 Series \$200.00 Return Cores must be Rapco or Airborne aluminum cores, no cast iron cores accepted. Cores must be returned in repairable condition to receive full credit. Return cores via UPS and reference Aircraft Spruce Invoice Number. Add Core Charge On Overhauled Pumps to purchase price. 200 Series . 400 Series . Return Cores must be Rapco or Airborne aluminum cores, no cast iron cores accepted. Cores must be returned in repairable condition to receive full credit. Return cores via UPS and reference Aircraft Spruce Invoice No. No core with all new Rapco Pumps.



RAPCO VACUUM PUMP REMOVAL & INSTALLATION TOOL

The RA716 Pump Wrench provides superior access to the vacuum pump flange nuts. This new tool is made from quality hardened steel with corrosion resistant nickel plating. The shank is shaped to provide easy access to tight areas between the pump and accessories. The open end head is laser cut providing a close tolerance fit on the nut. Plastic coating on the handle provides a firm grip .P/N 10-13911



SIGMA-TEK DRY AIR PUMP

The Sigma-Tek 1U128-006 is a pump which carries a warranty of 2-years or 1000 hours. It uses an aluminum rotor and rotor housing, making the pump very resistant to damage from ingestion of foreign objects, excessive loads or engine oil. It provides clean, dry air for operation of air driven instruments in aircraft operating at medium altitudes. Pump rotates clockwise or counterclockwise in vacuum or pressure mode. May be mounted in either a vertical or horizontal position. FAA approved as a direct replacement for all instrument pumps but is not intended for supplying air to deicing boots. Mounting gasket furnished. Install suction regulator in line to instruments. Delivers 6 In. Hg vacuum (2.9-8.5 minimum CEM) or 6 In. Hg pressure (3.7-8.5 minimum CEM) from 1500 to 4000 RPM. No core charge. P/N 10-02778



SIGMA-TEK AEON DRY AIR PUMP

The Sigma Tek 1U478-003 piston air pump's unique design features give virtually maintenance free operation with unprecedented long life and is backed by a full 5 year/2,000 hours warranty. Will replace 200 series and 1U128 series instrument vacuum pumps. Contains no brittle carbon rotor and vanes to shatter, making this pump highly resistant to damage from foreign objects or excessive loading. This pump operates either clockwise or counterclockwise engine pad rotation in the vacuum or pressure mode. Each port is clearly marked. May be mounted in any orientation. Mounting gasket furnished. Sigma Tek recommends using our high flow fittings, always use P/N 58B423-003 (90 degree long) and 58B423-004 (90 degree short) fittings where applicable. FAA-PMA approved. PN 10-01133

AAA REMANUFACTURED DRY AIR PUMP



Arizona Aircraft Accessories is an FAA Approved overhaul facility which remanufactures run-out Airborne vacuum pumps to factory specifications. Warranty on 211/212 series pumps is 1-year/1000 hours and on 240/440 series pumps warranty is 1-year/400 hours. Weight: 211/212/240 series= 3 lbs.; 441/442 series = 4 lbs.

| | |
|------------------|--------------------|
| 215cc pump | P/N 10-00068 |
| 216cw pump | P/N 10-00069 |
| 241cc pump | P/N 10-00070 |
| 242cw pump | P/N 10-00071 |
| 441cc pump | P/N 10-00072 |
| 442cw pump | P/N 10-00073 |

Call for PMA before sending pump to Aircraft Spruce West for overhaul.



RAPCO DRY AIR PUMP COOLING SHROUD/FLANGE KITS

These kits are easy to install onto Airborne, Edo-Aire, & Sigma-Tek dry air pumps. Keeping the air pump cool can extend pump life and help prevent premature

pump failure.
Model RA20A, For 200/240 series pump..... P/N 10-23955

Model RA40A, For 400 series pumps

Model RA30E, For EDO Aire/Sigma-tek pump.. P/N 10-23975

VACUUM PUMP SHEAR COUPLINGS

These parts fit Airborne 200 & 400 series pumps.
Shear Coupling

Standard Bushing..... P/N 82-20095

VACUUM PUMP RETAINING NUT TOOL



This tool efficiently places the retaining nuts on the vacuum pump mounting studs on Lycoming engines, saving time and frustration for the aircraft mechanic. Use this tool to start the nuts on the studs, and complete the operation using the Rapco wrench (10-13911). Made in the U.S.A. P/N 10-01052

TEMPEST VACUUM FILTERS

FAA-PMA Approved

ARB3-5-1..... P/N 10-00922

AAD9-14-3..... P/N 10-00923

AAD9-14-5..... P/N 10-00924

AAD9-18-1..... P/N 10-00937

TEMPEST VACUUM PUMP WRENCH



Case hardened steel, with nickel-chrome plating for corrosion resistance. Slip resistant vinyl grip. Rare earth magnet allows efficient and easy installation of hard-to-get-to install nuts. Eligibility: Fits all 200, 240, 400 and 3200 series vacuum pumps. P/N 10-02654

SUCTION REGULATORS – PNEUMATIC FILTERS

PARKER SUCTION REGULATOR



Constructed of lightweight aluminum. Large air passages minimize the pressure drop through the valve. Valve chatter is virtually eliminated by pneumatically balancing the regulating diaphragm. The simple but effective polyurethane garter filter protects the air pump and may be easily replaced.

Beaded hose fittings simplify installation and eliminate expensive AN fittings which unnecessarily restrict air flow.

- Has 5/8" & 5/8" Ports (Straight).....P/N 10-02105.....
- Has 5/8" x 3/8" Ports (45° elbow).....P/N 10-02102.....
- Has 5/8" x 3/8" Ports (Straight).....P/N 10-03423.....
- Replace. Filter (replace after 100 hrs operation). P/N B3-5-1.....

TEMPEST VACUUM REGULATORS

FAA/PMA Approved



- AA 2H3-2P/N 10-03458.....
- AA 2H3-6P/N 10-03460.....
- AA 2H3-12P/N 10-03461.....
- AA 2H3-23P/N 10-03462.....

RAPCO VACUUM REGULATORS



P/N 10-00289

P/N 10-03009

P/N 10-03147

RAPCO RA2H3-12 VACUUM REGULATOR (PN 10-00289)

This FAA Approved Rapco vacuum regulator is designed to maintain a constant suction at various altitudes and is used in various General Aviation applications. It is a direct replacement for the Airborne Model 2H3-12, and supersedes the 133A16 or 2H3-16. It is adjustable and come preset to 5.0 inches of mercury (HG). This model has two 3/8" hose inlet ports at a 45 degree angle to each other and one 5/8" hose outlet port.

RAPCO RA2H3-23 VACUUM REGULATOR (PN 10-03009)

This FAA Approved Rapco vacuum regulator is designed to maintain a constant suction at various altitudes and is used in various General Aviation applications. It is a direct replacement for the Airborne Model 2H3-23, and supersedes the 133A4. It is adjustable and comes preset to 5.0 inches of mercury (HG). This model has two 3/8" hose inlet ports parallel to each other and one 5/8" hose outlet port.

RAPCO RA2H30-9 PRESSURE REGULATOR (PN 10-03147)

This FAA Approved Rapco pressure regulator is designed to maintain a constant pressure at various altitudes and is used in aircraft with pressure instrument systems such as newer Beechcraft Bonanza. It is a direct replacement for the Airborne Model 2H30-9, and supersedes the 1H30-9. It is adjustable and come preset to 5.0 inches of mercury (HG). This model has a 5/8" hose inlet port and a 5/8" hose outlet port.

| Description | Rapco Model No. | Part No. | Price |
|------------------------|-----------------|----------|-------|
| RAPCO Vacuum Regulator | RA2H3-12 | 10-00289 | . |
| RAPCO Vacuum Regulator | RA2H3-23 | 10-03009 | . |
| RAPCO Vacuum Regulator | RA2H30-9 | 10-03147 | . |

VACUUM RESTRICTOR VALVE



AN5829-2 manually adjustable needle valve complete with locking collar and mounting flange. For reducing vacuum to 2" Hg for operation of turn/bank. Manufactured by ACS Products Co.....P/N AN5829-2.....



Aircraft Spruce offers RAPCO FAA-PMA approved filter replacements for Airborne assemblies. Destructive contamination abounds within an aircraft environment. Without proper filtration, system dirt and dust from the

cabin as well as cigarette smoke will take its toll. This results in the replacement of expensive gyro instruments and other components. Your operating costs can be significantly reduced when filters are changed on a scheduled basis. RAPCO in-line and central filters are constructed to the highest industry standards. They utilize a 0.3 micron filtration media which provides superior filtration without undue air flow restriction. As a RAPCO distributor, Aircraft Spruce offers these replacement filters at exceptionally low prices.

CLEAR VIEW INLINE AIR FILTER



Constructed of high temperature, high impact material, the CV1J4 transparent housing allows the aircraft mechanic, pilot or owner to visually monitor filter contamination when referenced with an internal "Change Indicator" decal. This revolutionary new design will aid in identifying malfunctioning or inoperative system components that cause premature air pump wear and avoid replacement of clean filters usually replaced annually or based on aircraft operating hours. When installed in a "Vacuum" gyro system between the air pump and gyro instruments, the CV1J4 "Clear View" air filter will prevent contamination of gyro instruments from carbon dust created by air pump failure. The CV1J4 filter is a direct replacement for Airborne 1J4-6 and 1J4-7 filters. FAA/PMA approved for Beechcraft Singles & Twins, Piper PA31, 31P, -300, -310, -325, -350, PA-31P-350, PA31T2, PA-34-200T, Grumman GA-7, Rockwell 700, standard equipment on all Mooney aircraft. P/N 10-00450.....

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INLINE AIR FILTER KIT FOR CESSNAS



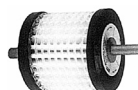
This FAA-PMA approved kit includes a CV1J4 clear view filter, necessary hardware, a copy of the STC and detailed instructions for smooth installations. An adhesive backed label is provided for recording kit installation data in aircraft log books.

P/N 10-00451.....

INLINE AIR FILTER KIT FOR PIPERS

Similar to kit for Cessnas above. FAA approved for most PA-28 and all PA-38. P/N 10-00452.....

| Model | Year | A/C Serial No. |
|-------------------------|-----------|------------------------|
| 150K, L, M | 1970-1977 | 15071129 to 15079405 |
| A150K, L, M | 1970-1977 | A1500001 to A1500734 |
| 152 | 1978-1985 | 15279046 to 15286033 |
| A152 | 1978-1985 | A1520735 to A1521049 |
| 172 L, K, L, M, N, P, Q | 1968-1985 | 17256513 to 17276516 |
| R172K | 1977-1961 | R1722000 to R1723454 |
| 172RG | 1980-1985 | 172RG0001 to 172RG1191 |
| 177, A, B | 1968-1978 | 17700001 to 17702752 |
| 177RG | 1971-1978 | 177RG0001 to 177RG1366 |
| 182R | 1985-1986 | 18268435 to 18268615 |
| T182 | 1981-1985 | 18267716 to 18268541 |
| R182 | 1983-1986 | R18201929 to R18202041 |
| TR182 | 1983-1986 | R18201929 to R18202041 |



AIRBORNE CENTRAL AIR FILTERS

Increase gyro life with Airborne gyro air filter. Incorporates a 0.3 micron filter element that protects gyro instruments by filtering out tobacco smoke and cabin dust.

Small, lightweight, easily installed. Fits most planes. Dual 3/8" beaded tubes simplify 2-gyro installations.

| Part No. | Description | Price |
|----------|---|-------|
| 1J7-1 | Vacuum Instrument Central Gyro Air Filter: 0.3 micron pleated paper element with two 3/8" installation tubes. | . |
| B3-5-1 | Vacuum relief & pump inlet foam garter filter: Foam Garter filter. Fits Airborne 133 & 2H3 Regulating Valves. | . |
| D9-14-5 | Replacement element used in Airborne 1J2 Series Inlet filter (except 1J2-2) | . |
| D9-14-3 | Replacement element used in Airborne 1J2-2. | . |
| D9-18-1 | Replacement Filter for Airborne 1J7-1 Gyro filter Assy. | . |
| 1J10-1 | Line mounted Filter 3/8"x3/8" non-beaded tube 5-3/4" long. | . |

RAPCO REPLACEMENT PNEUMATIC FILTERS

| Description | Airborne Number | RAPCO Number | Part No. | Recommended Replacement | Price |
|---|-----------------|--------------|----------|-------------------------|-------|
| Line Mounted Filter, 1/2"x1/2" Tube | 1J4-4 | RA 1J4-4 | 10-23810 | 500 hrs/1yr | . |
| Line Mounted Filter, 5/8"x5/8" Tube | 1J4-6 | RA 1J4-6 | 10-23820 | 100 hrs | . |
| Line Mounted Filter, 5/8"x5/8" Tube Overall length 5-1/2" | 1J4-7 | RA 1J4-7 | 10-23830 | 500 hrs/1yr | . |
| Vacuum Central Gyro Air Filter Assy | 1J7-1 | RA 1J7-1 | 10-23840 | 500 hrs/1yr | . |
| Vacuum Pump Inlet Garter Filter | B3-5-1 | RA B3-5-1 | 10-23850 | 500 hrs/1yr | . |
| Replacement Element, 1J2-2 filter | D9-14-3 | RA D9-14-3 | 10-23860 | 500 hrs | . |
| Rep. Element for 1J2 series (except 1J2-2) | D9-14-5 | RA D9-14-5 | 10-23870 | 500 hrs | . |
| Replacement Element, 1J7-1 Filter | D9-18-1 | RA D9-18-1 | 10-23880 | 500 hrs | . |
| Bellanca filter-Vacuum Autopilot | | RA51A-5 | 10-02118 | | . |
| Line Mounted Filter - 3/8" x 3/8" | 1510-1 | RA1J10-1 | 10-00287 | | . |

GYRO SUCTION - PRESSURE GAUGES



UMA 1" GYRO SUCTION GAUGES

Case: Molded ABS Plastic. Weight: 1.4 oz.

| PART NO. | RANGE | DIAL MARKINGS | PRICE |
|----------|-----------|--------------------------|-------|
| 10-02361 | 3-7 IN.HG | B & W | . |
| 10-00311 | 3-7 IN.HG | GA 4.5-5.4 | . |
| 10-02464 | 3-7 IN.HG | GA 3.5-5.0, RR 3.5 & 5.0 | . |



UMA 1-1/4" GYRO SUCTION GAUGES

Case: Molded ABS Plastic. Weight: 1.4 oz.

| PART NO. | RANGE | DIAL MARKINGS | PRICE |
|----------|--------------|--------------------------------|-------|
| 10-01010 | 3-7 IN. HG. | GA 4.5-5.2, RR 4.5 & 5.2 | . |
| 10-02465 | 3-7 IN. HG. | GA 4.75-5.25, RR 4.75 & 5.25 | . |
| 10-02466 | 3-7 IN. HG. | GA 4.5-5.0 | . |
| 10-02467 | 2-6 IN. HG. | GA 3.8-4.4, RR 3.8 & 4.4 | . |
| 10-02358 | 3-7 IN. HG. | B & W | . |
| 10-02468 | 2-6 IN. HG. | GA 4.0-5.0 | . |
| 10-02469 | 2-6 IN. HG. | GA 4.5-5.4, YA 2.0-4.5, RR 6.0 | . |
| 10-02470 | 2-6 IN. HG. | GA 3.5-5.0, RR3.5 | . |
| 10-02471 | 0-10 IN. HG. | B & W | . |



UMA 2-1/4" UMA GYRO SUCTION

Case: Cast Aluminum. Weight: 4.7 oz.

| PART NO. | RANGE | DIAL MARKINGS | PRICE |
|----------|--------------|--------------------------|-------|
| 10-00090 | 2-8 IN. HG. | GA 4.6-5.4 | . |
| 10-01000 | 0-10 IN. HG. | B & W | . |
| 10-02359 | 0-10 IN. HG. | GA 4-5, RR 5 | . |
| 10-02360 | 0-10 IN. HG. | GA 4.2-4.4, RR 4.2 & 5.3 | . |



UMA 1-1/4" PNEUMATIC PRESSURE

Case: Molded ABS Plastic. Weight: 1.4 oz.

| PART NO. | RANGE | DIAL MARKINGS | PRICE |
|----------|----------|-----------------------------|-------|
| 10-02364 | 0-25 PSI | GA 5.0-10, YA 10-21 | . |
| 10-02365 | 0-25 PSI | GA 15-21, YA 21-25, RR 14.9 | . |
| 10-12305 | 0-25 PSI | GA 15-21, RR 24 | . |
| 10-02366 | 0-25 PSI | GA 2.5-7.5, YA 7.5-21 | . |



VARGA 1" INCH ROUND SUCTION GAUGE

Miniature 1" round case instrument. Used in many production aircraft. A real space saver.
P/N 10-01100

**FOR EXPERIMENTAL AIRCRAFT ONLY.
NOT FAA APPROVED**



1-1/4 INCH GYRO PRESSURE GAUGE

These units are designed to save space in cockpit panels. These gauges utilize an internal diaphragm for accuracy and reliability. Miniature 1-1/4" instrument. Case: Molded ABS Plastic. Weight: 1.4 oz.

| PART NO. | RANGE | DIAL MARKINGS | PRICE |
|----------|-------------|--------------------------------------|-------|
| 10-01105 | 3-7 IN. HG. | GA 4.25-6.25 | . |
| 10-02462 | 3-7 IN. HG. | GA 4.25-5.2, RR 4.25 & 5.2 | . |
| 10-02463 | 3-7 IN. HG. | GA 4.5-5.2, YA 3.8-4.5, RR 3.8 & 5.2 | . |



UMA 2-1/4" GYRO PRESSURE GAUGES

These units are designed to save space in cockpit panels. These gauges utilize an internal diaphragm for accuracy and reliability. Case: Cast Aluminum. Weight: 4.7 oz.

| PART NO. | RANGE | DIAL MARKINGS | PRICE |
|----------|-------------|---------------|-------|
| 10-02362 | 2-8 IN. HG. | B & W | . |
| 10-02363 | 2-8 IN. HG. | GA 4.5-5.5 | . |



UMA 2-1/4" CABIN ALTITUDE DIFFERENTIAL PRESSURE GAUGE

Case: Valox 420 Plastic Weight: 7.4 oz.

| PART NO. | RANGE | DIAL MARKINGS | PRICE |
|----------|-------------------------|-------------------|-------|
| 10-02370 | 0-25,000 Ft. 0-6 PSI | B & W | . |
| 10-02371 | 0-30,000 Ft. 0-6 PSI | GA 0-10, YA 10-28 | . |
| 10-02460 | 0-30,000 Ft. 0-6 PSI | GA 0-10, YA 10-28 | . |
| 10-02461 | 0-35,000 Ft. 0-8 PSI | B & W | . |

IN

AIRSPEED INDICATORS



UMA AIRSPEED INDICATORS (NON-TSO'D)

These quality UMA, non-TSO'd airspeed indicators are available in MPH, Knots or Dual Scales.

| Description | Dial | Part No. | Price |
|----------------|-------------------------------------|----------|-------|
| 3-1/8" | 20-80 mph | 10-04905 | . |
| 3-1/8" | 20-100 mph | 10-04910 | . |
| 3-1/8" | 20-120 mph | 10-04915 | . |
| 3-1/8" | 20-140 mph | 10-04920 | . |
| 3-1/8" | 20-160 mph | 10-04925 | . |
| 3-1/8" | 40-180 mph | 10-04930 | . |
| 3-1/8" | 40-200 mph | 10-01029 | . |
| 3-1/8" | 40-240 mph | 10-00512 | . |
| 3-1/8" | 40-260 mph | 10-01030 | . |
| 3-1/8" | 40-280 mph | 10-01031 | . |
| 3-1/8" | 40-300 mph | 10-01032 | . |
| 3-1/8" | 20-80 mph Knots | 10-01033 | . |
| 3-1/8" | 20-100 mph Knots | 10-01034 | . |
| 3-1/8" | 20-120 mph Knots | 10-04950 | . |
| 3-1/8" | 20-140 mph Knots | 10-04955 | . |
| 3-1/8" | 20-160 mph Knots | 10-01035 | . |
| 3-1/8" | 40-180 mph Knots | 10-04965 | . |
| 3-1/8" | 40-200 mph Knots | 10-04970 | . |
| 3-1/8" | 40-240 mph Knots | 10-00514 | . |
| 3-1/8" | 40-260 mph Knots | 10-01036 | . |
| 3-1/8" | 40-280 mph Knots | 10-01037 | . |
| 3-1/8" | 40-300 mph Knots | 10-01038 | . |
| 3-1/8" Dual | 20-140 mph/20-120 Knots | 10-00511 | . |
| 3-1/8" Dual | 40-160 mph/20-135 Knots | 10-02200 | . |
| 3-1/8" Dual | 40-180 mph/20-150 Knots | 10-02300 | . |
| 3-1/8" Dual | 40-200 mph/40-170 Knots | 10-02400 | . |
| 3-1/8" Dual | 40-240 mph/40-205 Knots | 10-02600 | . |
| 3-1/8" Dual | 40-260 mph/40-225 Knots | 10-01039 | . |
| 3-1/8" Dual | 40-300 mph/40-250 Knots | 10-01040 | . |
| 3-1/8" Dual | 40-350 mph/40-300 Knots | 10-01041 | . |
| 3-1/8" Dual | 40-260 Knots/50-300 mph | 10-01042 | . |
| 3-1/8" Dual | 40-300 Knots/40-340 mph | 10-01043 | . |
| Range Markings | UMA Range Markings on NON-TSO Units | 10-02792 | . |



UMA 3-1/8" AIRSPEED INDICATORS (TSO'd)

These quality UMA airspeed indicators are available in MPH, Knots or Dual Scales.

| Single Scale | P/N | Price | Dual Scale | P/N | Price |
|------------------------|----------|-------|---------------------|----------|-------|
| 3-1/8" 40-160MPH TSO'D | 10-03250 | . | 3-1/8" 160MPH TSO'D | 10-03270 | . |
| 3-1/8" 40-180MPH TSO'D | 10-03251 | . | 3-1/8" 180MPH TSO'D | 10-03271 | . |
| 3-1/8" 40-200MPH TSO'D | 10-03252 | . | 3-1/8" 200MPH TSO'D | 10-03272 | . |
| 3-1/8" 40-240MPH TSO'D | 10-03253 | . | 3-1/8" 240MPH TSO'D | 10-03273 | . |
| 3-1/8" 40-260MPH TSO'D | 10-03254 | . | 3-1/8" 260MPH TSO'D | 10-03274 | . |
| 3-1/8" 40-280MPH TSO'D | 10-03255 | . | | | |
| 3-1/8" 40-300MPH TSO'D | 10-03256 | . | | | |

| Single Scale | P/N | Price | Dual Scale | P/N | Price |
|--------------------------|----------|-------|-----------------------|----------|-------|
| 3-1/8" 40-160K Not TSO'D | 10-03257 | . | 3-1/8" 205K Not TSO'D | 10-03276 | . |
| 3-1/8" 40-180K Not TSO'D | 10-03258 | . | 3-1/8" 240K Not TSO'D | 10-03277 | . |
| 3-1/8" 40-200K Not TSO'D | 10-03259 | . | 3-1/8" 260K Not TSO'D | 10-03278 | . |
| 3-1/8" 40-240K Not TSO'D | 10-03260 | . | 3-1/8" 300K Not TSO'D | 10-03279 | . |
| 3-1/8" 40-260K Not TSO'D | 10-03261 | . | 3-1/8" 300MPH TSO'D | 10-03275 | . |
| 3-1/8" 40-280K Not TSO'D | 10-03262 | . | | | |
| 3-1/8" 40-300K Not TSO'D | 10-03263 | . | | | |

UMA 2-1/4" MINIATURE AIRSPEEDS

A fine quality instrument of new manufacture for the exceptional homebuilt aircraft. Matte-white dial markings. Fits standard 2-1/4" instrument panel opening. Space saving dims: 2-3/8"x2-3/8"x3.25"L. All ranges available in knots.

| Range | P/N | Range | P/N | Range | P/N |
|-------------|----------|-------------|----------|-------------|----------|
| 20-100 MPH | 10-03992 | 40-160 MPH | 10-03996 | 40-240 MPH | 10-04000 |
| 20-120 MPH | 10-03993 | 40-180 MPH | 10-03997 | 40-260 MPH | 10-04001 |
| 20-140 MPH | 10-03994 | 40-200 MPH | 10-03998 | 40-300 MPH | 10-04002 |
| 0-120 Knot | 10-03995 | 40-140 Knot | 10-00507 | 40-160 Knot | 10-01787 |
| 40-180 Knot | 10-00508 | 40-200 Knot | 10-00509 | 40-240 Knot | 10-00510 |

ALL MODELS.....



UNITED AIRSPEED INDICATORS (TSO'D)

These 8000 series United airspeeds are TSO'd for installation on certificated aircraft. Factory new. Available in dual scale MPH/knots, or in MPH or knots only. Fits standard 3-1/8" panel hole. Wt: 0.7 lb. Not Lighted.

| Range | Part No. | Price | Range | Part No. | Price |
|----------------------|----------|-------|-------------|----------|-------|
| 40-200mph/40-170kts | 10-00190 | . | 0-170 knots | 10-00198 | . |
| 0-250mph/40-200 kts | 10-00191 | . | 0-210 knots | 10-00199 | . |
| 40-300mph/40-260 kts | 10-00192 | . | 0-200mph | 10-00194 | . |
| 0-260 knots | 10-00201 | . | 0-300 mph | 10-00196 | . |
| 0-250mph | 10-00195 | . | | | |

Available with custom range marksP/N 10-02614

LIGHTED UNITED AIRSPEEDS

Add -1 to P/N's above for internally lighted airspeed indicators. For an additional \$128.00

UNITED TRUE AIRSPEED INDICATORS

The true airspeed indicator corrects the indicated airspeed for changes in temperature and pressure encountered as aircraft changes altitude. By aligning outside temperature and pressure altitude with setting knob, movable airspeed scale is rotated proper amount so pointer registers true airspeed. Factory new 8100 series by United. TSO'D for certificated aircraft. Dual scale. Not Lighted.

Add . for custom range marks

& specify exact range marks needed.

| Series | Range | Part No. | Price |
|--------|-----------------|----------|-------|
| 8100 | 0-200mph/170kt | 10-00203 | . |
| 8125 | 0-250mph/215kt | 10-00204 | . |
| 8130 | 60-300mph/260kt | 10-00207 | . |
| 8130 | 0-300 mph | 10-00214 | . |
| 8100 | 40-170 Knots | 10-00216 | . |
| 8125 | 0-200mph/170kt | 10-00217 | . |
| 8130 | 0-260 Knots | 10-00218 | . |
| 8140 | 60-350 Knots | 10-00219 | . |

LIGHTED UNITED AIRSPEEDS

Add -1 to P/N's above for internally lighted airspeed indicators.



UMA 2-1/4 TSO'D AIRSPEED INDICATORS

UMA indicators are FAA TSO'd to C2d specifications. Installable in a fixed wing aircraft with a reciprocating or Turboprop Engine. Must be installed in a temperature controlled environment from -55 to +85 °C, to a max altitude of 25,000 ft. UMA offers indicators with full scale ranges available, from 160 to 300 in MPH or Knots.

| UMA Part NO. | Range | Part No. | Price |
|--------------|--------------|----------|-------|
| T16-210-121 | 20-120 MPH | 10-03577 | . |
| T16-211-121 | 20-120 Knots | 10-03578 | . |
| T16-210-141 | 20-140 MPH | 10-03579 | . |
| T16-211-141 | 20-140 Knots | 10-03580 | . |
| T16-210-142 | 30-140 MPH | 10-03582 | . |
| T16-211-142 | 30-140 Knots | 10-03583 | . |
| T16-210-160 | 40-160 MPH | 10-03584 | . |
| T16-211-160 | 40-160 Knots | 10-03585 | . |
| T16-210-161 | 20-160 MPH | 10-03586 | . |
| T16-211-161 | 20-160 Knots | 10-03587 | . |
| T16-210-180 | 40-180 MPH | 10-03588 | . |
| T16-211-180 | 40-180 Knots | 10-03589 | . |
| T16-210-200 | 40-200 MPH | 10-03590 | . |
| T16-211-200 | 40-200 Knots | 10-03591 | . |
| T16-210-240 | 40-240 MPH | 10-03592 | . |
| T16-211-240 | 40-240 Knots | 10-03593 | . |
| T16-210-260 | 40-260 MPH | 10-03594 | . |
| T16-211-260 | 40-260 Knots | 10-03595 | . |
| T16-210-300 | 40-300 MPH | 10-03596 | . |
| T16-211-300 | 40-300 Knots | 10-03597 | . |
| T16-210-400 | 40-400 MPH | 10-03598 | . |
| T16-211-400 | 40-400 Knots | 10-03599 | . |
| T16-212-240 | 40-240 KmH | 10-03602 | . |
| T16-212-260 | 40-260 KmH | 10-03603 | . |
| T16-212-280 | 40-280 KmH | 10-03604 | . |
| T16-212-300 | 40-300 KmH | 10-03605 | . |
| T16-212-320 | 40-320 KmH | 10-03606 | . |
| T16-212-380 | 40-380 KmH | 10-03607 | . |
| T16-212-400 | 40-400 KmH | 10-03608 | . |
| T16-212-440 | 40-440 KmH | 10-03609 | . |

IN

AIRSPEED INDICATORS



FALCON 3 1/8" SINGLE RANGE AIRSPEEDS

Falcon Gauge Airspeed Indicators have been one of the most chose flight instruments by kit plane builders and pilots. There are many great advantages to using these gauges: excellent slow speed characteristics; very progressive increments; a variety of ranges, light weight; short length, and affordable price. All Falcon Gauge Airspeed Indicators are housed in an aluminum case and consist of all metal parts.

Available ranges: mph, knots, km/hr; single range reading or dual range readings. Size: 3-1/8". Non-Tso'd

| Range | Length | Weight | Part No. | Price |
|--------------|-------------|--------------|----------|-------|
| 0-80 MPH | 2.2"/56.5mm | 10.2 oz/290g | 10-02905 | . |
| 0-100 MPH | 2.2"/56.5mm | 10.2 oz/290g | 10-02910 | . |
| 0-120 MPH | 2.2"/56.5mm | 10.2 oz/290g | 10-02915 | . |
| 0-140 MPH | 2.2"/56.5mm | 10.2 oz/290g | 10-02916 | . |
| 0-150 MPH | 2.2"/56.5mm | 10.2 oz/290g | 10-02225 | . |
| 20-160 MPH | 3.5"/97.3mm | 13.1 oz/372g | 10-02917 | . |
| 20-180 MPH | 3.5"/97.3mm | 13.1 oz/372g | 10-03000 | . |
| 20-200 MPH | 3.5"/97.3mm | 13.1 oz/372g | 10-02918 | . |
| 0-80 KNOTS | 2.2"/56.5mm | 10.2 oz/290g | 10-02896 | . |
| 0-100 KNOTS | 2.2"/56.5mm | 10.2 oz/290g | 10-02897 | . |
| 0-120 KNOTS | 2.2"/56.5mm | 10.2 oz/290g | 10-02898 | . |
| 0-140 KNOTS | 3.5"/97.3mm | 13.1 oz/372g | 10-02899 | . |
| 20-160 KNOTS | 3.5"/97.3mm | 13.1 oz/372g | 10-02900 | . |
| 20-180 KNOTS | 3.5"/97.3mm | 13.1 oz/372g | 10-02217 | . |
| 30-200 KNOTS | 3.5"/97.3mm | 13.1 oz/372g | 10-02218 | . |
| 30-200 KNOTS | 3.5"/97.3mm | 13.1 oz/372g | 10-02219 | . |
| 0-120 KNOTS | 2.2"/56.5mm | 10.2 oz/290g | 10-02220 | . |
| 0-150 KPH | 2.2"/56.5mm | 10.2 oz/290g | 10-02221 | . |
| 0-200 KPH | 2.2"/56.5mm | 10.2 oz/290g | 10-02222 | . |
| 0-300 KPH | 2.2"/56.5mm | 10.2 oz/290g | 10-02223 | . |

FALCON 3 1/8" DUAL RANGE AIRSPEEDS



Falcon Gauge Airspeed Indicators have been one of the most chose flight instruments by kit plane builders and pilots. There are many great advantages to using these gauges: excellent slow speed characteristics; very progressive increments; a variety of ranges, light weight; short length, and affordable price. All Falcon Gauge Airspeed Indicators are housed in an aluminum case and consist of all metal parts.

Falcon Gauge Dual Dial Airspeed Indicators provide dual readings and are suitable for higher performance type aircraft flying at moderate to high speeds. Matte-white dial markings, housed in a sturdy protective aluminum case.

Weight: approx. 10.5 oz./301g Length: 3.5" or 97.3 mm
Size: 3-1/8"

| Range | Part No. | Price |
|-----------------------|----------|-------|
| 20-160 MPH/140 KNOTS | 10-02227 | . |
| 30-180 MPH/160 KNOTS | 10-02228 | . |
| 30-200 MPH/180 KNOTS | 10-02901 | . |
| 40-250 MPH/220 KNOTS | 10-02229 | . |
| 40-300 MPH/260 KNOTS | 10-02230 | . |
| 20-300 MPH/160 KNOTS | 10-02231 | . |
| 40-120 KNOTS/ 240 MPH | 10-02233 | . |



THE KIT COLE CLARIFIER

The Kit Cole Clarifier Removable

The Kit Cole Clarifier is a non FAA approved coated, high quality glass lens provided in a kit that allows you to temporarily attach it to your altimeter face for all of your VFR & LSA flying needs. The kit

comes complete with a non-permanent, clear bonding gel and instructions for installation. This product is sold as a removable visual aid and is not intended for IFR use on TSO'd altimeters. The Kit Cole Clarifier is not sold to be permanently bonded to your altimeter face by any non FAA approved techniques.

The FAA Approved Kit Cole Clarifier

The Kit Cole Clarifier (US Patent No 7,313,962, 7,404,322) is a FAA approved coated, high quality glass lens provided in a kit that is attached to your altimeter face for all of your VFR & LSA flying needs. This product is sold as a visual aid and is intended for IFR use on TSO'd altimeters. Special order only must send in altimeter to have bonded.

Kit Cole Clarifier Removeable P/N 10-02838
Kit Cole Clarifier - FAA Approved P/N 11-07785



FALCON 3 1/8' TRUE AIRSPEEDS

Falcon Gauge True Airspeed Indicators have a sub-dial and window. The pilot can set the dial to coincide the outside temperature with the flight altitude for immediate and accurate true airspeed reference. It is a high precision airspeed indicator which makes for a nice feature and impression in an experimental aircraft cockpit. It also features all parts made with metal, aluminum case housing, short length and light weight. Non-Tso'd

Dual Range: mph inside/knots outside or knots inside/mph outside
Single Range: mph or knots
Length: 2.2" or 56.5mm
Size: 3-1/8"
Weight: 10.5 oz. or 301g

| Range | Lighting | Part No. | Price |
|----------------------|----------|----------|-------|
| 40-240 MPH/210 KNOTS | | 10-00001 | . |
| 40-240 MPH/210 KNOTS | LIT | 10-02214 | . |
| 40-210 KNOTS/240 MPH | | 10-00002 | . |
| 40-260 MPH /220KNOTS | | 10-00004 | . |
| 40-260 MPH/220 KNOTS | LIT | 10-02234 | . |
| 40-200 KNOTS/260 MPH | | 10-00003 | . |
| 40-200 KNOTS/260 MPH | LIT | 10-02216 | . |
| 40-240 MPH | | 10-02248 | . |
| 40-240 MPH | LIT | 10-02249 | . |
| 40-260 MPH | | 10-02235 | . |
| 40-260 MPH | LIT | 10-02236 | . |
| 40-210 KNOTS | | 10-02237 | . |
| 40-210 KNOTS | LIT | 10-02238 | . |
| 40-220 KNOTS | | 10-02240 | . |
| 40-220 KNOTS | LIT | 10-02239 | . |

FALCON 2 1/4" MINIATURE AIRSPEEDS



Falcon Gauge Miniature Airspeed Indicators are designed for ultralights. They offer ultralight pilots an affordable alternative to other higher priced indicators found in the market today without compromising the pilot's needs for a quality gauge that provides accuracy, light weight, compactness and safety. Their excellent slow speed performance provides an extra measure of safety by assuring accurate speed readings when flying low or critical stall speeds.

Weight: approx. 2.8 oz. or 80g
Length: 2-9/16" or 41mm

| Range | Part No. | Price |
|-----------|----------|-------|
| 0-80 MPH | 10-02605 | . |
| 0-100 MPH | 10-02610 | . |
| 0-120 MPH | 10-02615 | . |
| 0-140 MPH | 10-02620 | . |
| 0-120 MPH | 10-02625 | . |
| 0-140 MPH | 10-02226 | . |



SIGMA-TEK AIRSPEEDS (TSO'D)

Sigma-Teks precision airspeeds are original equipment on a variety of aircraft and over 144,000 have been delivered worldwide. Select from a single MPH scale or dual scale showing MPH / Knots. New manufacture. TSO'd for certificated aircraft unlit. Add \$95 for custom range markings. (Specify exactly)

| Description | Part No. | Price |
|---------------------------------|----------|-------|
| SIGMA TEK AIRSPEED 40-200MPH | 10-03100 | . |
| SIGMA TEK D/S AIRSPEED 40-200MP | 10-03200 | . |
| SIGMA TEK AIRSPEED 40-250MPH | 10-03110 | . |
| SIGMA TEK D/S AIRSPEED 40-250MP | 10-03210 | . |
| SIGMA TEK AIRSPEED 40-300MPH | 10-03115 | . |
| SIGMA TEK D/S AIRSPEED 40-300MP | 10-03215 | . |



AIRSPEED INDICATOR 2 INCH CERTIFIED-14V

• All units approved to FAA TSO (C10b,C2b and C4c) • Anti-reflective glass enhances visibility and reduces pilot fatigue • Rear-mounted in standard 2 1/4" cutouts horizontally, vertically or individually • Airspeed available in 250, 350 or 400 knots • All instruments are made in the USA • One year limited warranty.
2" 250 Knot 14V..... P/N 10-02687
2" 350 Knot 14V..... P/N 10-02688
2" 400 Knot 14V..... P/N 10-02689

AIRSPEED INDICATORS - ALTIMETERS

WINTER AIRSPEED INDICATORS

3-1/8" airspeeds are supplied and marked in MPH and knots scales. Indicators feature 360 degrees sweep for easy reading at a glance. All Winter Airspeeds come complete with mounting screws.



| Size | Range | Style | Part No. | Price |
|-------|-----------|---------|----------|-------|
| 2-1/4 | 0-75 MPH | Pitot | 10-02920 | . |
| 2-1/4 | 0-100 MPH | Pitot | 10-02925 | . |
| 2-1/4 | 0-120 MPH | Pitot | 10-02930 | . |
| 2-1/4 | 0-160 MPH | Pitot | 10-02935 | . |
| 3-1/8 | 0-75 MPH | Venturi | 10-02940 | . |
| 3-1/8 | 0-75 MPH | Pitot | 10-02945 | . |
| 3-1/8 | 0-100 MPH | Pitot | 10-02950 | . |
| 3-1/8 | 0-120 MPH | Pitot | 10-02955 | . |
| 3-1/8 | 0-160 MPH | Pitot | 10-02960 | . |
| 3-1/8 | 0-200 MPH | Pitot | 10-02965 | . |

HALL WINDMETER

Designed for hang gliders but can be mounted on low speed aircraft as an airspeed indicator. Easy to read. Mounting bracket clamps to 7/8 or 1 1/8" dia. tube. Short bracket is 3' long, Long bracket 15' long.

- Wind Meter (0-55 mph).....P/N 10-04100.....
- Wind Meter (0-80 mph).....P/N 10-04105.....
- Short Bracket.....P/N 10-04200.....
- Long Bracket.....P/N 10-04300.....

MINI 2-INCH AIRSPEED INDICATORS

Certified Airspeed with Internal LED Lighting



| DESCRIPTION | P/N | PRICE |
|----------------------|----------|-------|
| 2" CERT 200 KNOT 14V | 10-01723 | . |
| 200KT 25020-0179 28V | 10-01728 | . |
| 250KT 25025-0177 14V | 10-01729 | . |
| 250KT 25025-0177 28V | 10-01730 | . |
| 350KT 25035-0181 14V | 10-01731 | . |
| 350KT 25035-0181 28V | 10-01732 | . |
| 400KT 25040-0180 14V | 10-01733 | . |
| 400KT 25040-0180 28V | 10-01734 | . |

WESTACH AIRSPEED

This new innovative electric airspeed from Westach is a complete kit including a 2-1/4" round 0-60 MPH airspeed indicator which is clamped on tubing near the pilot, a bullet case for the instrument, two clamps, wire, an electric generator-type sender and a 6" dia. 3-bladed generator prop.



Remote Kit.....P/N K2M6RH.....

OPERATING RANGE DECALS

Yellow, red, green and white, pressure sensitive. Just pull off backing and place on instrument lens.

P/N 10-03905 /set



WINTER MINIATURE ALTIMETERS



The mini altimeter is a remarkable instrument. Through the use of an accurate single pointer design, the 0-5,000 and 0-10,000 altimeters are able to squeeze precision and reliability into a 2-1/4" instrument which is less than 2" deep. All altimeters are designed with Kollsman windows, glass faces, precision jewelled movements and a rugged combination metal and plastic case. Static porting is standard.

- 0-5000 ft. Altimeter, Inches..... P/N 10-24100.....
- 0-5000 ft. Altimeter, Millibar..... P/N 10-24105.....
- 0-10000 ft. Altimeter, Inches..... P/N 10-24115.....
- 0-10000 ft. Altimeter, Millibar..... P/N 10-24125.....

MINI 2-INCH ALTIMETERS

Certified Altimeters with Internal LED Lighting



| Description | Scale | Knob Position | Voltage | Part No. | Price |
|-------------|------------|---------------|---------|----------|-------|
| 14V-20K HG | 20,000 ft. | Left | 14 | 10-01735 | . |
| 14V-20K MB | 20,000 ft. | Left | 14 | 10-01737 | . |
| 14V-20K HG | 20,000 ft. | Right | 14 | 10-01743 | . |
| 14V-20K MB | 20,000 ft. | Right | 14 | 10-01745 | . |

TASKEM 2000 DIGITAL ALTIMETER



The Series 2000 Digital Altimeter is a precision instrument providing altitude readings from -100 to +30700 feet in 10' steps. A standard 3-1/8" instrument powered from 11-35V DC & uses a highly visible backlit liquid crystal display. Displayed data includes Altitude, Baro Ref & Vertical Speed. A programmable altitude alert function combines both audio and visual (LED) outputs. An oxygen alert cautions when over 12500 feet. All data is output in computer compatible RS-232 format.

Model 2000 devices display pressure in Hg while Model 2001 units are in mBar. 2 options can be added to the basic (-1) model; OAT (-2) includes temperature sender and also computes and displays Density Altitude, Mode C (-4) is a standard TSO-C88a compatible encoder. Both options are included in the (-3) versions. Wt., 8 oz. Depth behind back of instrument panel, 3-7/8". 2-yr factory warranty.

| Model | P/N | Price | Model | P/N | Price |
|--------|----------|-------|--------|----------|-------|
| 2000-1 | 10-24040 | . | 2001-1 | 10-24041 | . |
| 2000-2 | 10-24050 | . | 2001-2 | 10-24051 | . |
| 2000-3 | 10-24060 | . | 2001-3 | 10-24061 | . |
| 2000-4 | 10-24070 | . | 2001-4 | 10-24071 | . |

TASKEM 5000 DIGITAL ALTIMETER



Unlike mechanical altimeters, the Taskem 5000 is insensitive to the high vibration of 2-stroke engines frequently used on ultralight aircraft. This has literally shaken many mechanical altimeters. The 5000 is all solid state and can withstand severe shock and vibration without damage. It has a full 4.5 digit liquid crystal (LCD) display with large, 1/2" high characters. Because the LCD uses direct drive, it is easily readable from most viewing angles and does not disappear when viewed from an angle or does not washout in bright sunlight. Includes a backlight for night or dusk viewing. The altitude range extends from below sea level to well above the need for supplementary oxygen. The limits are -1000 to 19,990 ft. (-305 to 6,093 meters). Increments are in 10 ft./1m steps. The instrument is powered from DC in the range of 7-30V and is protected for accidental polarity reversal. A 9V battery is a common power source and a battery holder for this is provided on the back, external to the case. An alkaline battery will provide over 40 hours of operation, without the backlight illuminated. The backlight is not powered in the ON power switch position to conserve battery life.

Feet.....P/N 10-24010.....
Meters.....P/N 10-24020.....

ALTILERT ALTITUDE ALERT



Designed for general aviation use, the AltAlert is a portable device to help the pilot maintain an assigned or desired altitude. It's use is simple. Fly to your desired altitude and turn the unit on. The AltAlert learns your current altitude (by sampling barometric pressure, just like your altimeter) and stores this information. As your altitude drifts, an error signal is generated. At approximately +/- 100 ft. (or 50 ft. in Precision Mode), the red indicator flashes quickly and is accompanied by a piezo horn. The horn can be silenced by pressing the push button switch. Alarms will clear upon return to your original altitude. A new desired altitude can be set by turning the unit off and back on at any time. SPECIFICATIONS: • Size: 1.5" h x 4" L • Wt: 5 oz. (including battery) • Battery: 9V (not included) • Battery Life: 24 hrs+ • Dual Sensitivity Levels • Audible Alarm.

P/N 10-01727.....

ALTIMETERS



UNITED SENSITIVE ALTIMETERS

Designed to help the pilot determine altitude by measuring existing atmospheric pressure, this altimeter translates this measurement into "height-above-sea-level." This is indicated on the dial of the instrument in feet, which requires setting the barometric pressure in the Kollsman window.

Standard 3-1/8" size.

| Range | Scale | Manufacturer | P/N | Price Ea. |
|-------------|----------|--------------------|----------|-----------|
| 0-20000 ft. | Inches | United (TSO) | 10-04550 | . |
| 0-35000 ft. | Inches | United (TSO) | 10-04570 | . |
| 0-20000 ft. | Millibar | United (TSO) | 10-04560 | . |
| 0-20000 ft. | Inches | United (Lighted) | 10-00929 | . |
| 0-35000 ft. | Inches | United (Lighted) | 10-00930 | . |
| 0-20000 ft. | Millibar | United (Lighted) | 10-00931 | . |
| 0-20000 ft. | In/Mil | United (Lighted) | 10-00932 | . |
| 0-20000 ft. | In/Mil | United (Unlighted) | 10-00933 | . |
| 0-35000 ft. | In/Mil | United (Unlighted) | 10-02696 | . |
| 0-35000 ft. | In/Mil | United (Lighted) | 10-02697 | . |
| 0-35000 ft. | Millibar | United (Lighted) | 10-02698 | . |
| 0-35000 ft. | Millibar | United (Unlighted) | 10-02699 | . |



UNITED ALTIMETER, 3-INCH COUNTER DRUM POINTER

Aerosonic Common in turboprop and jet aircraft that require high quality instruments, this 3-inch, 35K counter drum pointer (CDP) has many features. The easy-to-read altitude window shows the aircraft height above sea level while the needle provides additional altitude precision. Requires 28 VDC power for operation.

Millibars P/N 10-02690.....
Inches P/N 10-02691.....



UNITED ALTIMETER WITH CORRECTED BAROMETRIC OUTPUT

True airspeed all the time! No need to correct the barometer, the altimeter does it automatically for the pilot. • Compatible with most Air Data Systems • 35,000 ft., dual barometric scale • Internally lighted – light tray included • TSO C10d certified • Standard D.C. voltage barometric output • Mounts in standard 3 1/8" panel cutout • Requires just 5" depth behind the panel • 1/8" NPT static port • Connector included • Manufactured by United Instruments. P/N 10-02718.....
Encoded P/N 10-02716.....



ALTIMETER, 2-INCH

Aerosonic - Reliable for primary or standby use, these altimeters provide flight critical data with a three-pointer or counter drum pointer display. The compact, 2-inch size is ideal for complex panel installations. Lighting is included. These altimeters are used in many popular OEM and STC packages. Call for application assistance.

| Range | Scale | Description | Part No. | Price |
|-------|-----------|-------------------------------------|----------|-------|
| 35K | Inches | 3-PTR, Left hand knob, 14V Lighted | 10-01739 | . |
| 35K | Inches | 3-PTR, Left hand knob, 28V Lighted | 10-01740 | . |
| 35K | Millibars | 3-PTR, Left hand knob, 14V Lighted | 10-01741 | . |
| 35K | Millibars | 3-PTR, Left hand knob, 28V Lighted | 10-01742 | . |
| 35K | Inches | 3-PTR, Right hand knob, 14V Lighted | 10-01747 | . |
| 35K | Inches | 3-PTR, Right hand knob, 28V Lighted | 10-01748 | . |
| 35K | Millibars | 3-PTR, Right hand knob, 14V Lighted | 10-01749 | . |
| 35K | Millibars | 3-PTR, Right hand knob, 28V Lighted | 10-01750 | . |
| 50K | In/Mil | CDP, Lighted 5V Gray | 10-02709 | . |
| 50K | In/Mil | CDP, Lighted 5V Black | 10-02710 | . |
| 50K | In/Mil | CDP, Lighted 28V Gray | 10-02711 | . |
| 50K | In/Mil | CDP, Lighted 5V Black | 10-02713 | . |

FALCON 3 1/8" SENSITIVE ALTIMETERS



1. Three Pointer Altimeter with Barometric Window and Low Altitude Warning Stripes is a modern type. The easy to read striped sector will show while flying below 16,000 ft. 2. Three Pointer Altimeter with a Barometric Window enables the pilot to adjust the altimeter to the barometric conditions existing at the point of landing. 3. Two Pointer Altimeter without Barometric Window. This type of altimeter is designed to meet the demands of some pilots who either live or fly the area's barometric pressure beyond 28.1 to 31 inches of mercury, or 950 to 1050 millibars, or some pilots prefer to set the altimeter to "0" altitude before taking off without regard to the barometric pressure. By installing this altimeter, the pilot can fly anywhere in the world without having to care about the barometric pressure changes. Non-TSO'd.

| Part No. | Description | Range | Price |
|----------|---|----------------------|-------|
| 10-04400 | 3 Pointer, Baro-Window, Warning Stripes | 20,000 ft., In. | . |
| 10-04500 | 3 Pointer, Baro-Window, Warning Stripes | 20,000 ft., MB | . |
| 10-02260 | 3 Pointer, Baro-Window, Warning Stripes | 20,000 ft., In. & MB | . |
| 10-02204 | 3 Pointer, w/Baro-Window | 20,000 ft., In. | . |
| 10-02256 | 3 Pointer, w/Baro-Window | 20,000 ft., MB | . |
| 10-02257 | 3 Pointer, w/Baro-Window | 6,000 meter, MB | . |
| 10-02259 | 2 Pointer, No Window | 10,000 ft. | . |



UMA 3-1/8" ALTIMETERS

This UMA standard altimeter utilizes a single pointer and is designed to meet the needs of the low-cost Non-IFR user. This altimeter utilizes a single pointer and adjustable barometric scale, viewed through a Kollsman Window. Can be ordered in inches of mercury or millibar. Available in feet or meters. Aluminum case.

| Part No. | Range | Dial Markings | Scale |
|----------|--------------|---------------|-------------|
| 10-22965 | 0-20,000 Ft. | B & W | w/ IN HG |
| 10-02436 | 0-10,000 Ft. | B & W | w/ IN HG |
| 10-02369 | 0-5,500 Ft. | B & W | w/ IN HG |
| 10-05120 | 0-5,500 Ft. | B & W | w/ Millibar |
| 10-05125 | 0-10,000 Ft. | B & W | w/ Millibar |
| 10-05126 | 0-20,000 Ft. | B & W | w/ Millibar |
| 10-05127 | 0-3,000 M | B & W | w/ Millibar |



UMA 2-1/4" ALTIMETERS

This UMA standard altimeter utilizes a single pointer and is designed to meet the needs of the low-cost Non-IFR user. This altimeter utilizes a single pointer and adjustable barometric scale, viewed through a Kollsman Window. Can be ordered in inches of mercury or millibar. Scale is available in feet or meters.

| Part No. | Range | Dial Markings | Scale |
|----------|--------------|---------------|-------------|
| 10-05131 | 0-10,000 Ft. | B & W | w/ IN HG |
| 10-05132 | 0-20,000 Ft. | B & W | w/ IN HG |
| 10-05133 | 0-10,000 Ft. | B & W | w/ Millibar |
| 10-05134 | 0-20,000 Ft. | B & W | w/ Millibar |



FALCON 3 1/8" NON-SENSITIVE ALTIMETERS

Falcon Gauge light weight altimeters feature a non-sensitive altimeter on a 3-1/8", single pointer, and a barometric window. A setting knob allows the pilot to set the barometric reading to the correct field elevation or barometric pressure setting. They are weight conservative, economical, yet very precision and accurate instruments that provide excellent altitude measuring capabilities; designed for ultra-light airplanes. 3-1/8" is non-sensitive. Standard Types are either feet reading with barometric window inches of mercury or millibars reading; or meters reading with barometric window millibars reading. Length: 2 3/8" Weight: 10.7 oz.

| PART NO. | RANGE | PRICE |
|----------|------------------------------|-------|
| 10-05100 | 6,000 ft./12,000 ft Inches | . |
| 10-03422 | 10,000 ft./20,000 ft. Inches | . |
| 10-02251 | 6,000 ft., Millibars | . |
| 10-02252 | 10,000 ft., Millibars | . |

FALCON 2 1/4" SENSITIVE ALTIMETERS



2-1/4" is sensitive. Single Pointer, and a barometric window. A setting knob allows the pilot to set the barometric reading to the correct field elevation or barometric pressure setting. They are weight conservative, economical, yet very precision and accurate instruments. It is suitable where space and weight is a consideration. This type is available in Feet or Meter reading, the baro-metric window can be either in inches of mercury or in millibars reading. Length: 2 3/8" Weight: 3.6 oz.

| PART NO. | RANGE | PRICE |
|----------|-------------------------|-------|
| 10-02205 | 5,500 ft, Inches | . |
| 10-04510 | 10,000 ft, Inches | . |
| 10-02207 | 3,000 Meters, Millibars | . |
| 10-02254 | 6,000 Meters, Millibars | . |

WRIST INSTRUMENTS – BUGS – REDUCING MASKS



VECTOR WRIST-TOP COMPUTER

The Vector combines an altimeter, vertical speed indicator, barometer, compass and a precision timepiece in one compact wristwatch-sized case. The instrument allows altitude measurement in feet or meters, up to a max. 27,000 ft., accurate to plus or minus 10 ft. It also provides instantaneous vertical ascent & descent rates in either feet/second or meters/second. The backlit display is easy to see in all lighting conditions. The barometer displays current barometric pressure and trends for accuracy, and deviation adjustment to correct for differences between true and magnetic north. Reliable & accurate, this new instrument provides time, day and date, as well as three daily alarms, a stopwatch and countdown timer. The unit is also waterproof to 100 ft. P/N 10-19325

MICROTIM™ BAROMETRIC ALTIMETER



Features: * Extreme sensitivity. Registers changes in altitude of 2 feet or less. * Calibrated from -2000 feet MSL (2000 feet BELOW sealevel) to +20000 feet MSL (20000 feet ABOVE sealevel). * Low Power. Single AAA battery lasts for months. Battery monitor gives several DAYS of low-battery notice. * One foot resolution, barometric-pressure and field-elevation adjustable. * AGL(relative), MSL(sealevel) or BOTH alternately every 2 seconds. * Selectable units: feet/inHg or meter/kPa or feet/mbar(hPa). * Excellent ultralight altimeter or backup unit. Small (3"x1.5"x3/4") with large easy-to-read numbers (3/8" high numbers). Very durable (resin encapsulated internals), resists shock, vibration, and moisture. * EASY TO USE right out of the box. The 3 primary key functions allow you to o 1) Raise the barometric pressure setting o 2) Lower the barometric pressure setting o 3) Zero the ground-level altitude (AGL) * Then three additional functions are accessed by holding down one key for 5 seconds which allows you to o 4) Change units o 5) Change the display mode (AGL, MSL, or BOTH) o 6) Reset MicroTim to factory defaults (AGL only, feet, 29.92 inHg). ...and that's all there is to it! P/N 10-01726

INSTRUMENT BUGS



"Bugs" are perfect for pilots who rent aircraft, and for owners. The transparent suction cup works on all instruments. A thumb screw friction lock lets the yellow pointer tip rotate 360°. Fly with it day & night. Includes: 2 "Bugs" in a plastic reusable storage box with instructions and 4 disposable alcohol swabs, which are used to clean the instrument face and bugs so that they stick well. P/N 10-00114

AIRCRAFT INSTRUMENT COVER



The instrument cover is a plastic disk approximately 2 3/4" in diameter and 1/16" thick. By use of the attached suction cup, the cover will mask the face of most general aviation flight instruments. It is useful in many training situations one of which is partial panel work. As a safety aid, the cover can be used to mask an instrument when it is non-functional, as is required by Regulations. Each package has two covers. P/N 13-04968

INSTRUMENT COVERS



The suction cup on the back of this soft rubber disc enables the pilot or instructor to cover up one or more flight instruments for partial panel instruction or to cover a failed instrument during flight. Measures 3-1/8" in diameter. Flight instructors and IFR pilots should have several of these handy covers in their flight bags. P/N 13-00088

INOPERATIVE INSTRUMENT AID



Designed with static cling polyester, the IIA will stick to your glass instrument face without licking and will stay there until you want to remove it. Practicing instrument failures during flight is a requirement by the Federal Aviation Administration for your practical test. One package includes four Inoperative Instrument Aids. Developed by a Certified Instrument Flight Instructor with the intent to improve instrument instruction. measures 3" in diameter. P/N 13-04173

3ATI REDUCER PLATES



3ATI Reducers to 3 1/8" - Use a 3ATI hole cut out to mount 3 1/8" diameter instrument. Plate can be shimmed to instrument-panel thickness. Simple installation. Heat-treated aluminum .080 thick with black anodize finish. P/N 07-01331



3ATI Reducers to 2 1/4" - Use a 3ATI hole cut out to mount 2 1/4" diameter instruments. Plate can be shimmed to instrument-panel thickness, comes with 4 rivets. Simple installation. Heat-treated aluminum .080 thick with black anodize finish. BACK PLATE 3.8 X 3.8 P/N 07-01330

REDUCING MASKS



Precision die-cut black anodized aluminum masks simplify installation of small instruments in large instrument panel cut-outs. 3 types available.

- #1: Large AN-type artificial horizon cut-out to 3-1/8" size P/N 10-05900
- #2: Large AN-type directional gyro cut-out to 3-1/8" size P/N 10-06000
- #3: 3-1/8" size cut-out to 2-1/4" size P/N 10-06100



DRILL JIG AND FILING TEMPLATE FOR THE 3 ATI INSTRUMENT CUT

A handy much needed tool to have for those difficult to make 3 ATI cut outs that everyone complains about. A rugged tool made of alloy steel with a 58-60 RC hardness for long life. Simply drill mounting holes and cut opening file to P/N 10-00153

template.



MOUNTING PLATE FOR THE 3 ATI INSTRUMENT

Quick fix for a hard to cut out opening. Plate is .500 wider than instrument. For easy mounting, material is .080 aluminum P/N 10-00154



REDUCING PLATE FROM 2-1/4" DIA.

Reduce from 2.25" to 2" diameter instrument. For oil pressure, ammeter gauge etc. P/N 10-00155



INSTRUMENT COVERS FOR PARTIAL PANEL PRACTICE

Sold in 4 packs of 25 (for a total of 100 sticky notes). These round pads are white with a light blue ASA logo, and fit any aviation instrument. Perfect for partial panel practice or jotting down quick notes. P/N 13-21776



ANGLED INSTRUMENT MOUNTS

This angled instrument mount allows replacement of a 3-1/8" gauge with a 2-1/4" gauge. It places the gauge at a 20° angle toward the pilot for easier reading and reduced glare. Made from 20% glass fiber filled Lexan. P/N 10-06800



INSTRUMENT PANEL COVER-UPS

These white stick on instrument size covers are ideal for partial panel practice or to cover an actual failed instrument. These covers are reusable and are furnished in a package of 5 covers P/N 10-00066



INSTRUMENT PANEL COVER-UPS FOR PFD / MFD

Cover ups for PFD and MFD screens for glass cockpit training. For partial panel practice & actual instrument failures. * Reusable, 3 per pack * "Cling" type plastic covers, with lift tab * Zip lock plastic bag for convenient storage. P/N 13-06116



INSTRUMENT HOLE COVER PLATES

Use these plates to attractively cover unused panel cut-outs. Aluminum and plastic plates have raised center, which brings the plug face about even with the front surface of the panel.

- Plastic plate for 2-1/4" Cut-Out..... P/N 10-06900
- Plastic plate for 3-1/8" Cut-Out..... P/N 10-07000
- Plastic plate for standard altimeter hole..... P/N 10-07100
- Aluminum plate for 2-1/4"hole, black wrinkle P/N 10-00427
- Aluminum plate for 2-1/4"hole, no paint..... P/N 10-00428
- Aluminum plate for 3-1/8"hole, black wrinkle P/N 10-00429
- Aluminum plate for 3-1/8"hole, no paint..... P/N 10-00430
- Plastic plate for 3ATI hole, black fire retardant... P/N 10-00433
- Aluminum plate for 3ATI hole, black wrinkle..... P/N 10-00434
- Aluminum plate for 3ATI hole, no paint..... P/N 10-00436
- Plastic plate for half ATI hole, black fire resist... P/N 10-00437

INSTRUMENT PANEL LAYOUT TEMPLATE



Use this template for precise positioning of instrument holes and mounting screw holes in panel. For both 2-1/4" & 3-1/8" dia. instruments. With transfer punch for marking screw hole centers and instructions. P/N 12-14600



VSI - ACCELEROMETERS

FALCON ACCELEROMETER (G-METER)



Accelerometers register to "g" forces acting on the airframe during turbulence or aerobatic maneuvers. One pointer gives a continuous reading, the other two indicate maximum positive and negative loads. Easy to reset by pushing the "push to reset" knob.

All models are mechanical and offer precision, accuracy, reliability and durability. They are very easy to operate with no wiring necessary.

Whether flying acrobatic or not, this G-Meter provides the pilot valuable information for a

winged airplane and helicopter without having to spend astonishing figures.

| Size | PART NO. | LIGHTING | RANGE | PRICE |
|--------|----------|----------|-------------|-------|
| 3-1/8" | 10-00936 | UNLIT | -5g to +10g | . |
| 3-1/8" | 10-00935 | UNLIT | -2g to +5g | . |
| 2-1/4" | 10-09800 | UNLIT | -5g to +10g | . |
| 2-1/4" | 10-02049 | LIT | -5g to +10g | . |
| 2-1/4" | 10-00840 | UNLIT | -2g to +5g | . |

MECHANICAL ACCELEROMETER ("G" METERS)



This instrument registers "G" forces acting on the airframe during turbulence or aerobatic maneuvers. One pointer gives a continuous reading, the other 2 indicate maximum positive & negative loads. A reset knob is provided. In smooth, level flight the instrument indicates +1 "G". Large "G" Meter - Range: -5G to +12G.

Fits 3-1/8" dia. panel cutout. Wt 0.8 lb.

Overhauled & Certified - w/Matte-White Dial Markings.

P/N 10-09710

FLIGHT DATA G-METER GT50 12/28



The GT-50 is a Six Function: Accelerometer - Clock - Voltmeter - Temperature for Experimental Aircraft.

G-Meter:

* Continuous Instantaneous Display to +12/-10 G's

* Records and Saves Max and Min G's

* 30 Degree (Sonex) Tilted Panel Compatible

Flight Timer: Automatically Records Flight Time

Clock: 12 or 24 Hour Format

Timer/Stopwatch Voltmeter

Features:

* Best G-Meter Value Available

* Extreme Operating Temperature Display

* Soft Orange Backlight

* 2-1/4" Panel Mounted

* Weighs 2.5oz

* Includes Pre-Wired Connector

* 12-28 Volt Compatible P/N 10-03691.....

Flight Data OAT Probe GT50..... P/N 10-03694.....

WINTER VARIOMETERS



These extremely sensitive Winter instruments provide instantaneous indication of changes in vertical speed. Mechanical operation, with vario flask included. 2 1/4" and 3 1/8" sizes, 1000 fpm, 10 knot and 1500 fpm ranges

| Description | Part No. | Price |
|-----------------|----------|-------|
| 2-1/4" 1000 FPM | 10-03813 | . |
| 2-1/4" 1500 FPM | 10-03819 | . |
| 2-1/4" 10 KNOT | 10-03815 | . |
| 3-1/8" 1000 FPM | 10-03830 | . |
| 3-1/8" 1500FPM | 10-03839 | . |
| 3-1/8" 100 KNOT | 10-03832 | . |

UNITED VERTICAL SPEED INDICATORS



The vertical speed indicator is a precision instrument which provides an accurate indication of rate of change of altitude. This instrument is temperature compensated and is provided with a zero adjustment screw on the face of the case in the seven o'clock position. Power: Static system.

Manufactured by United Instruments. Used in most production aircraft.

Size: 3-1/8" x 3-1/8" x 4", Wt. 0.7 lb. TSO-C8b.

Unlighted VSI's

0-2000 FPM P/N 10-05200

0-3000 FPM P/N 10-20400

0-4000 FPM P/N 10-20500

0-6000 FPM P/N 10-05250

Lighted VSI's

0-2000 FPM P/N 10-00925

0-3000 FPM P/N 10-00926

0-4000 FPM P/N 10-00927

0-6000 FPM P/N 10-00928

3-1/8" UMA VERTICAL SPEED INDICATORS



| Part No. | Name | Range | Price |
|----------|----------------------------|-------------|-------|
| 10-20505 | Vertical Speed | 0-2,000 Ft. | . |
| 10-02368 | Vertical Speed | 0-3,000 Ft. | . |
| 10-20506 | Vertical Speed | 0-4,000 Ft. | . |
| 10-20508 | Vertical Speed | 0-6,000 Ft. | . |
| 11-07239 | Optional internal lighting | | . |



UMA MINIATURE 2 1/4" VERTICAL SPEED INDICATORS

This instrument mounts in a standard 2-1/4" instrument panel cutout. New manufacture with brilliant easy-to-read matte-white numerals on black background. Size: 23/8"x 23/8"x 31/4" long.

| Part No. | Name | Range | Price |
|----------|----------------------------|-------------|-------|
| 10-05500 | Vertical Speed | 0-2,000 Ft. | . |
| 10-00079 | Vertical Speed | 0-3,000 Ft. | . |
| 10-05550 | Vertical Speed | 0-4,000 Ft. | . |
| 10-05560 | Climb | 0-4,000 Ft. | . |
| 10-05570 | Rate of Change | 0-4,000 Ft. | . |
| 10-05580 | Cabin Climb | 0-4,000 Ft. | . |
| 10-05600 | Vertical Speed | 0-6,000 Ft. | . |
| 10-05610 | Climb | 0-6,000 Ft. | . |
| 10-06910 | Rate of Change | 0-6,000 Ft. | . |
| 11-07239 | Optional internal lighting | | . |

FALCON VERTICAL SPEED INDICATORS



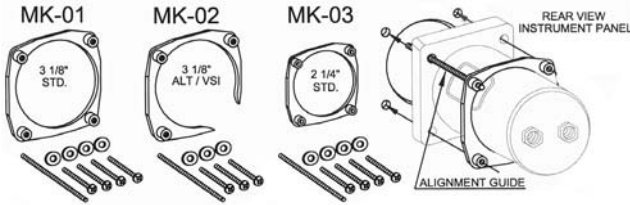
Falcon Gauge Vertical Speed Indicators (Rate of Climb), have been installed in thousands of planes. Available in climb ranges from 2,000 feet per minute to 4,000 feet per minute, and 10 meters per second. This precision aircraft instrument provides immediate climb and descent information with an easy to read dial and is extremely reliable and durable. Over several decades, they have been servicing and satisfying pilots and kit plane builders worldwide.

The 2-1/4" altimeter is perfect for the ultra-light models and where space and weight are a factor of consideration.

| PART NO. | SIZE | RANGE | PRICE |
|----------|--------|-------------------|-------|
| 10-05205 | 3 1/8" | 2,000 ft. / Min. | . |
| 10-05210 | 3 1/8" | 3,000 ft. / Min. | . |
| 10-02246 | 3 1/8" | 10,000 ft. / Min. | . |
| 10-01643 | 2 1/4" | 2,000 ft. / Min. | . |
| 10-00983 | 2 1/4" | 10 Meters / Sec. | . |

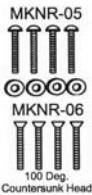
INSTRUMENT MOUNTING & ADAPTER KITS

INSTRUMENT MOUNTING KITS



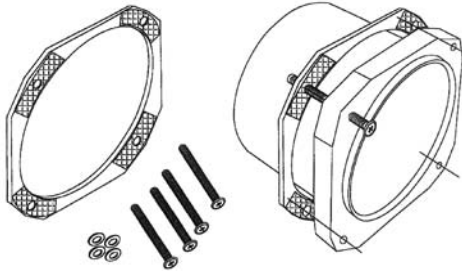
Kits come with "special" self-locking black pan head screws nylon washers, and alignment guide pin.

Precision machined "Nut Ring" instrument mounting kit. Designed to slide on from the back side of the instrument using the alignment guide pin inserted through a screw hole. Pulling on the alignment pin from the front side of the panel allows you to hold the instrument in correct alignment in the panel. Specially designed self-locking pan head black brass mounting screws and nylon washers are then easily installed from the front. Countersunk self-locking black brass screws are also available. Extra screws & washers are sold in packs of 12. The nylon washer keeps from chipping the instrument panel. All self-locking screws are extra long to accommodate the extra thickness of light wedges and internally lighted instruments. Nut Rings can be installed without removing hoses, tubing, or electrical connections. Designed to replace "grasshopper nuts". PMA'd. Alignment guide pin sold separately. (P/N 10-03696)



| Model | Description | Part No. | Price |
|-------------|------------------------|----------|-------|
| MK-01 | 3-1/8" Std. | 10-00335 | . |
| MK-02 | 3-1/8" ALT/VSI | 10-00336 | . |
| MK-03 | 2-1/4" Std. | 10-00337 | . |
| MKNR-05 | Pan Head Screws | 10-00338 | . |
| MKNR-06 | Countersunk Screws | 10-00339 | . |
| Accessories | | | |
| AP-01 | Alignment Mounting Kit | 10-03696 | . |

"EZ NUTS" INSTRUMENT MOUNTING SYSTEM BY SPT



Take the frustration out of mounting instruments with the use of Superior Panel Technology's EZ Nuts. Adhesive tape securely holds nut ring in place. No realignment if instrument is later removed. Includes four

1-1/2" non-magnetic black oxide stainless steel, pan-head screws. Stronger than brass. Includes four black nylon washers to prevent marring of the panel. Aluminum bezel is treated to prevent corrosion. The pressed in stainless steel inserts eliminate the problem of striped threads. Simply cut off one corner if only three screws are needed. Save labor time when compared to "grasshopper nuts". 100 degree countersunk screws available and are sold in packs of eight.

- 3-1/8" Bezel.....P/N 11-01830
- 2-1/4" Bezel.....P/N 11-01831
- Countersunk screw package (set of 8)
P/N 11-06546

PITOT TUBE PROTECTORS

These hinged pitot tube protectors open automatically in take off at speed of about 40 mph and close automatically at end of landing roll.



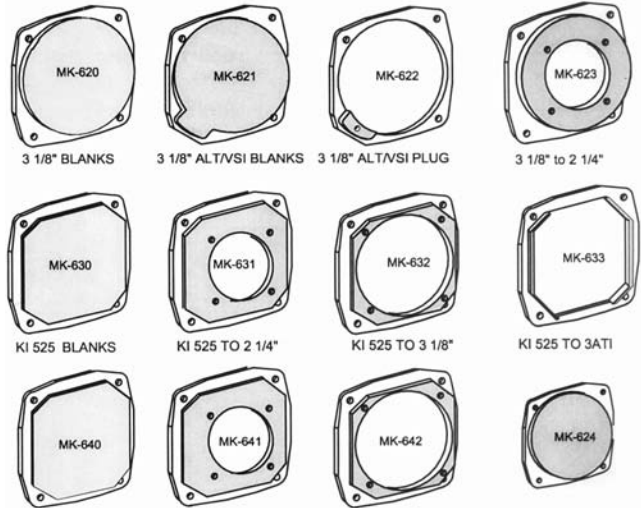
| Model No. | Part No. | Fits Pitot Tube Sizes | Price |
|-----------|----------|-----------------------|-------|
| 1 | 10-02000 | 3/16" by 1/4" O.D. | . |
| 2 | 10-02100 | 3/8" by 1/2" O.D. | . |

REMOVE BEFORE FLIGHT RIBBON



This 3" x 24" orange vinyl streamer with black letters, features a grommet for a clip ring to attach anywhere on the aircraft. High visibility, fire resistant material. P/N 15200

INSTRUMENT ADAPTER KITS



CNC Machined from aircraft grade aluminum. The adapter face is raised .075" to give the flush panel look. Easy to install and easily painted.

| Model | Description | Part No. | Price |
|--------|----------------------|----------|-------|
| MK-620 | 3-1/8" Blank | 10-00340 | . |
| MK-621 | 3-1/8" ALT/VSI Blank | 10-00341 | . |
| MK-622 | 3-1/8" ALT/VSI Plug | 10-00342 | . |
| MK-623 | 3-1/8" to 2-1/4" | 10-00343 | . |
| MK-624 | 2-1/4" Blank | 10-00344 | . |
| MK-630 | KI525 Blank | 10-00345 | . |
| MK-631 | KI525 to 2-1/4" | 10-00346 | . |
| MK-632 | KI525 to 3-1/8" | 10-00347 | . |
| MK-633 | KI525 to 3 ATI | 10-00348 | . |
| MK-640 | 3 ATI Blank | 10-00349 | . |
| MK-641 | 3 ATI to 2-1/4" | 10-00350 | . |
| MK-630 | 3 ATI to 3-1/8" | 10-00351 | . |

PITOT TUBE COVERS



PITOT TUBE BODY - Durable leather-like cover provides optimum protection. Velcro strap attaches body to 5/8" or 11/16" dia. L-shaped pitot tube. Bright red "Remove Before Flight" streamer. Made of flame-proof & weather-resistant National Aerospace material. P/N 15210

SLIP-ON PITOT TUBE COVER - Not shown. Same as above except is slip fit over 1/4" or 1/2" dia. pitot tube. Red "Remove Before Flight" streamer is attached to cover. Made of flame-proof and weather-resistant National Aerospace material. P/N 15220

DEGROFF'S PITOT SHIELDS



PITOT SHIELDS are a "fail-safe" pitot tube cover that will protect the pitot tube from contamination by insects, debris and ice while the airplane is on the ground. It is friction-fit to the pitot tube and has a calibrated "flat-plate-forward" design that, upon reaching a specific velocity, will release from the pitot tube and fall harmlessly away, allowing for normal airspeed indications. The cover utilizes EVA foam that is UV resistant and stable at temperatures reached by heated pitot tubes. It is a highly visible color with the words

"REMOVE BEFORE FLIGHT" printed and visible from all directions. This pitot tube cover is soft, but tough. It will not damage aircraft surfaces when it comes off during ground roll, nor will it be a potentially hazardous foreign-object on the runway.

- For 5/8" pitot tube.....P/N 10-00491
- For 3/4" pitot tube.....P/N 10-00492
- For Piper pitot tubeP/N 10-00493

PITOT TUBES

UNHEATED PITOT TUBES

STRAIGHT TYPE - Flange-mounted through leading edge of spar. Aluminum tube 24" long, 1/4" dia. May be cut to shorten.

P/N 15133

L-SHAPED TYPE - Flange mounted L-shaped model for under-the-wing mounting. 1/4" dia. aluminum tube.

P/N 15135

L-SHAPED PITOT-STATIC TUBE - Same design with static tube added. For pitot tube cover order #15220 or 10-02100 (flip up).

P/N 15144

STRAIGHT TYPE PITOT-STATIC TUBE - Clamp-mounted for leading edge of wing. 14-1/2" long. May be shortened, formed or shaped to best angle of attack. 1/4" dia. aluminum tubes. All installation hardware furnished.

P/N 10-01800

STRUT TYPE PITOT-STATIC TUBE - Simple L-shaped design for clamping to strut. 1/4" dia. aluminum tubes.

P/N 10-01900

MAST-MOUNT PITOT TUBE - Designed for mounting in 3/4" O.D. x .049" wall aluminum tubing (not furnished). Machined from solid aluminum. Polyethylene fitting for 1/4" I.D. hose included. P/N 15170

RAVEN PITOT STATIC TUBE

Pitot system combines pitot and static functions in one tube. Used for years on many different aircraft. Comes complete with mounting block to install it.

P/N 10-00476

PITOT STATIC SUMP BOTTLE

This pitot-static sump bottle collects moisture in the aircraft's static system which prevents water damage to panel mounted instruments. Used in many Cessna aircraft. Measures 1.625" dia. x 4.75" long.

Cessna.....P/N 10-00630

STATIC PORTS

Aluminum static port for mounting through 1/4" dia. hole in side of fuselage. Base has 1/8" NPT female port for connecting to static line (polyethylene fitting included). Install with 3/32" dia. flush rivets.

P/N 15160

Aluminum static port mounts from outside of fuselage through 9/16" dia. hole. Secure to skin with 9/16" Pal nut & lock washer on inside. Includes (1) 0700-153 polyethylene fitting.

P/N 15165.....

Aluminum static port mounts from outside of fuselage through .560 dia hole. Secure with four countersunk 1000 3/32" rivets. Includes one 0700-153 polyethylene fitting.

P/N 15175.....

Aluminum single engine cessna type static port. External mounted through a 19/64" hole. Can be used on fabric, composite or aluminum. No need for rivets. 1-3/8" dia.x1" depth. Ideal for homebuilts of all types.

P/N 10-00250.....

BOND-IN STATIC PORT SET

This aluminum static port is designed for high performance composite aircraft. Simply bond through the fuselage from the outside. Base has a 1/8" NPT for connecting to the static line. Furnished with installation instructions. Sold in set of 2.

P/N 10-00229

PITOT PAL

The Pitot Pal is a precision machined adapter that is installed in the nose of the aircraft by simply drilling a 1/2" diameter hole, inserting the adapter, and locking in place by a nut on the backside. The adapter has a barbed fitting to which the airspeed indicator tubing is attached. The aluminum Pitot Tube slides into the adapter and locks in place with a press fit. The added benefit to this is that the Pitot tube can be easily removed at a fly-in or similar event to prevent it from getting bent. Deluxe kit includes tubing & a fitting to connect Pitot Pal to the airspeed indicator.

Pitot Pal..... P/N 10-00062

Deluxe Kit..... P/N 10-00063

FALCON HEATED PITOT TUBES

The AN5812 heated pitot tube has been used on a wide variety of aircraft over the years and is now available for experimental aircraft. Made from brass and weighing 1.5 lbs, these imported pitot tubes meet the AN specifications.

12V, 7ampsP/N 10-00984

24V, 3.5ampsP/N 10-00985

HEATED PITOT TUBES

AN5812 PITOT TUBE - This heated pitot tube mounts under the wing. Used on Mooney, Beech, Piper, Maule, American Aviation aircraft, Glasair & Glasair. Threaded outlet fits 1/4" size AN tube fittings. Use 2.023x.857x.049 4130 Streamline Tubing to fabricate mount.

AN5812-12 (12V) (10 amp.)

AN5812-1 (24V) (15 amp.)

Phenolic connector receptacle P/N 10-00032

AN5814 PITOT-STATIC TUBE - Same design as AN5812 pitot tube but with heated static tube added. Used on Glasair & Glasair (Piper No. 305-12).

AN5814-12 (12V) (20 amp.)

AN5814-2 (24V) (15 amp.)

AN5813-1 PITOT TUBE - The AN5813-1 (PH500) is the standard replacement heated pitot tube for twin Cessnas with 24V systems. Draws 3-4 amps and measures 9.75" long. Mounts in 1.18" diameter tube. Available with or without sleeve. With Sleeve.....P/N 10-00064

SPACEAGE PITOT

SpaceAge Control miniature heated pitot or pitot-static probes offer the lowest power consumption and lowest weight available to the general aviation market. A small tip diameter of .31 inches allows the sensing tip to remain free of ice under severe in-flight icing conditions at only 50 watts of power - which is about 25% of the power of those bulky probes with similar anti-icing capability. Probes are constructed of highquality corrosion resistant materials - a stainless steel outer shell on the nose section, aluminum body, stainless steel pressure lines, and aircraft grade lead wires.

| Straight | | | L-Shaped | | |
|-----------------|----------|-------|-----------------|----------|-------|
| Description | Part No. | Price | Similar Items | Part No. | Price |
| 28 VDC 4254-05 | 10-02682 | . | 28VDC 4254-01 | 10-02678 | . |
| 12 VDC 4254-06 | 10-02683 | . | 12VDC 4254-02 | 10-02679 | . |
| STAT28V 4254-07 | 10-02684 | . | STAT28V 4254-03 | 10-02680 | . |
| STAT12V 4254-08 | 10-02685 | . | STAT12V 4254-04 | 10-02681 | . |

GRETZ GA-1000 HEATED PITOT TUBE

The Gretz Aero GA-1000 is a totally new design of heated pitot tube. It is molded from a very high-tech polymer material that has nearly the same thermal conductivity as that of metal. This new design has electronics embedded in the Pitot tube.

It also comes with a small electronic control module to control the heat of the Pitot as well as to provide information to the pilot regarding thermal and heater performance of the Pitot tube. This done by way of a 3/16" diameter multi-conductor cable that has a LED board already attached that will mount conveniently on the panel. The GA-1000 will fit the Gretz mounting bracket kits that were designed for other popular Pitot tubes. The GA-1000 Pitot tubes come with the electronic control module, the LED board and cable, Pitot mounting screws, electronic control module mounting hardware, and of course, complete instructions for installation and use. P/N 10-01715

GRETZ GA-500 UNHEATED PITOT TUBE

The Gretz GA-500 is the same shape and color as the heated GA-1000 Pitot tube, but does not include the heater, electronic instructions, etc. It will mount into the same Gretz mounting bracket kits.

P/N 10-01716

GRETZ AERO PITOT TUBE BRACKETS

These chrome plated bracket kits include all of the parts needed to install AN5814 or AN5812 pitot tubes into any of the Vans RV series aircraft or into most other metal winged aircraft with some slight alteration of the kit. Complete instructions included. Kits for homebuilders pitot tubes (below) are bare metal (paintable) and undrilled.

Kit for AN5812 pitot tubesP/N 10-01950

Kit for AN5814 pitot tubesP/N 10-01960

Pitot Tube Bracket Undrilled/PaintableP/N 10-01188

HOMEBUILDERS HEATED PITOT TUBES

These heated pitot tubes are similar to AN5812 pitot tubes but are 1/4" deeper and 1/2" longer. Available in 12 volt or 24 volt models. Not FAA approved for certified aircraft. Note: Mounting holes will need to be drilled and taped.

AN5812-12 Type 12V P/N 10-01022

AN5812 Type 24V..... P/N 10-01023

PBK-ND - Paintable Non-drilled Bracket..... P/N 10-01188

FALCON GAUGE PITOT TUBE MOUNTING BRACKET

This Falcon Gauge Mounting Bracket for Pitot Tubes works with heated and non-heated tubes. Material: Aluminum Alloy

Standard Mounting Bracket.....P/N 10-01063

Mounting Bracket for RV'sP/N 10-02276

PITOT TUBES - ANGLE OF ATTACK INDICATORS



AEROGIZMOS PITOT TUBE

Incorporates the mount and the tube in one convenient unit, making it no longer necessary to have a separate mount. This unit further enhances the building experience as there is no protruding mast from the wing if it is to be stored during the building process. Made from a single piece of 6061 aluminum making it strong and long lasting. The unit has been lightened in the interest of weight savings. Not for IFR use.

P/N 10-03633



THE REDDISH STALL WARNER

Developed in the UK by Nigel Reddish, these stall warners have been installed in many RV series aircraft. The vane is ground adjustable and installation is simple. Includes a micro switch and vane. For experimental aircraft only. **Note:** The Mark 2 Version is practically the same as the Mark 1, the only difference is the vane on the Mark 2 is longer. The installation is the same as the Mark 1 only.

Mark I P/N 10-00189.....

Mark II P/N 10-02686.....



RIGHT ANGLE BUDDY AOA

The RiteAngle™ "Buddy" is a modern, up to date system that accurately determines your aircraft's angle of attack. This series uses an improved easy-to-understand LED display. Green indicates Safe, Amber indicates Caution and Red indicates Danger. In addition to the color of the LED's the flashing "arrows" show which way to put the nose to prevent stalling the aircraft. The horizontal line of Green LED's indicate the "On Speed" AOA, 1.3 Vso regardless of bank angle density altitude or any of the other variables where the airspeed is inaccurate. We will not sell this system to aircraft with flaps.

P/N 11-06626



NON-HEATED NON-IFR WELDED PITOT TUBE ASSEMBLY

This non-heated non-IFR welded pitot tube assembly. It is intended for the experimental VFR aircraft market. The tube and mast are from 4130 tube welded in a fixture to assure alignment. The orifice is produced from aircraft grade aluminum. The pressure tube is polyethylene for easy connection to the aircraft pitot system. Dimension: 6" x 5" x 2-1/2"

P/N 10-03637



SAFE FLIGHT PRE-STALL WARNER

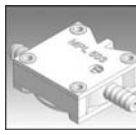
Warns by light and horn of any danger of an approaching stall regardless of the flight maneuver. Never signals unless a stall is imminent. Consists of an instrument panel unit (fits standard 2.25" hole) containing a warning horn & signal light, and a small vane wing unit which operates a relay. Operation of the instrument doesn't depend upon air speed but rather on the air flow conditions of the wing. Complete with installation kit & instructions. Installation time: 2-6 hours.

| | Model | Part No. | Price |
|---------------|------------|----------|-------|
| COMPLETE KIT | 164R (12V) | 164R | . |
| | 164S (24V) | 164S | . |
| LIFT DETECTOR | 164 | 164 | . |
| HORN & LIGHT | R (12V) | 10-22712 | . |
| | S (24V) | 10-22724 | . |



ACI STALL WARNER

Few pilots need reminding of the catastrophic consequences of an unintentional stall at low level. A frequent sequence of events is distraction of pilot attention, leading to lack of speed control, with the stall rapidly followed by rotational entry into a spin. Steep ground impact follows all too quickly. We all know about this, but why do stall accidents continue to kill pilots and their passengers year after year? Factors include the rapidity with which our low inertia aircraft lose airspeed, their sensitivity to gusts, the higher frequency of engine failure - and so on. However, very few Experimental and PFA aircraft are fitted with audible stall warners, and yet we are flying aircraft that need them. Virtually every certified production light aircraft has a stall warning system as standard. The ACI Stall Warner is for experimental aircraft only. P/N 10-00235



MPL 503 AIR PRESSURE SWITCH

MPL 500 Series switches offer pressure, vacuum, and differential sensors, sensitive to as low as 0.05 in/H² O. Their accuracy and reliability offer the designer an excellent general purpose low pressure to electric interface for monitoring and control applications. Miniature size and low cost make the 500 Series ideal for OEM applications. MPL 503 is a Range B switch, which is 0.50 to 3.00 in/H₂O

P/N 11-02379

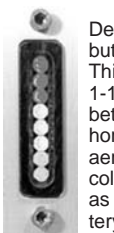


AOA PROFESSIONAL MODEL

This angle of attack instrument is designed for experimental aircraft pilots. Angle-of-Attack unlocks Navy carrier pilots secrets and puts a priority on safety. All approaches should be flown at the same optimum approach angle of attack not the same IAS. We can now do precision approaches just like the military and airline pilots and accurately gauge Vx, Vy, Best glide, L/D max, and maximum endurance AOA because angle of attack is not a function of weight, bank angle, fuel load, density altitude and etc. This revolutionary angle of attack instrument is based on a long known aerodynamic principle. The AOA Professional includes a four color liquid crystal display and a aural voice system which warns of critically high AOA, gear position errors and installation/hardware errors. There are no ugly probes, vanes or protrusions to slow you down or accumulate ice.

For Composite Construction..... P/N 10-00016

For Metal Construction..... P/N 10-00736



AOA SPORT MODEL

Designed for those tight panels, requiring simplified features but still uses revolutionary patent pending sensing techniques. This angle of attack instrument is only 1/2" wide by 1-3/4" by 1-1/4" deep overall and will fit on or under your glare shield or between instruments as a panel mount in either the vertical or horizontal position. Enhance safety by installing the ultimate aerodynamic performance instrument. The display is a three color LED ladder and includes the same aural voice warnings as the AOA Professional. It can be powered with a 9V battery or by standard 14 or 28 aircraft bus systems. There are no ugly probes, vanes or protrusions to slow you down. This instrument has more resolution than the Navy's indexer used by Naval and Marine aviators today. Excellent for RV's, Glasairs, Lancairs, and other homebuilts.

P/N 10-00017

ALPHA SYSTEMS AOA KITS



AOA-5060K MECHANICAL KIT (3-1/8" MOUNT) - The Alpha System AOA mechanical kit includes everything needed to install an angle of attack gauge in any aircraft. This kit includes probe, probe mounting plate, all fittings, 21 feet of hoses and the AOA gauge with a 3-1/8" standard panel instrument opening mount. PN 11-05601

AOA-5070K MECHANICAL KIT (DASH MOUNT) - The Alpha Systems AOA Mechanical Kit includes everything needed to install an angle of attack gauge in any aircraft. This kit includes probes, probe mounting plate, all fittings, 21ft. of hoses, the AOA gauge, and custom dash mount with mounting plate. PN 11-06446

AOA-5050K MECHANICAL KIT (2-1/4" MOUNT) - The Alpha Systems AOA mechanical kit includes everything needed to install an angle of attack gauge in any aircraft. This kit includes probe, probe mounting plate, all fittings, 21 feet of hoses and the AOA gauge with a 2-1/4" standard panel instrument opening mount. PN 11-05599

AOA-2000K ELECTRONIC KIT (2-1/4" ROUND DISPLAY) - The Alpha Systems AOA electronic kit includes everything needed to install an angle of attack display in any aircraft. This kit includes probe, probe mounting plate, all fittings, 21 feet of hoses, the AOA digital control module with audio beeper, power cord and round LED display with a 2-1/4" standard panel instrument opening mount. PN 11-05596

AOA-3000VK ELECTRONIC KIT (VERTICAL DISPLAY) - The Alpha Systems AOA electronic kit includes everything needed to install an angle of attack display in any aircraft. This kit includes probe, probe mounting plate, all fittings, 21 feet of hoses, AOA digital control module with audio beeper, power cord and 4" bar graph LED vertical display. PN 11-05597

AOA-3000HK ELECTRONIC KIT (HORIZONTAL DISPLAY) - The Alpha System AOA electronic kit includes everything needed to install an angle of attack display in any aircraft. This kit includes probe, probe mounting plate, all fittings, 21 feet of hoses, AOA digital control module with audio beeper, power cord and 4" bar graph LED horizontal display. PN 11-05598

IN

PITOT TUBES - COMPASSES

SPACEAGE HEATED PITOT-STATIC PROBES



Avionics engineers needing AN5812-mount pitot tube and AN5814-mount pitot-static tube compatibility but requiring the latest in low-power, low-mass, and small-size technology can now specify SpaceAge Control 4380-type air data probes. Unlike legacy-design AN-type products, the new 4380 and 4420 series probes meet FAA TSO C16a deicing requirements. The 4380 and 4420 series air data probes reduce the impact of air data systems on the aircraft's power and mass budgets, weigh in just 1/4 pound, and have a power consumption of just 45 watts continuous.

| Description | Drain Hole | Part No. | Price |
|--------------------------|------------|----------|-------|
| 4450-01 Pitot 28V | Top | 10-03638 | - |
| 4450-02 Pitot 28V | Bottom | 10-03639 | - |
| 4450-03 Pitot-Static 28V | Top | 10-03640 | - |
| 4450-04 Pitot-Static 28V | Bottom | 10-03641 | - |



AIRPATH COMPASSES

Factory-new Airpath compasses as used in almost all production aircraft. 2.25" size.

For compasses for use in the Southern Hemisphere, add "-SO" to Airpath part no. and add \$15.00 to price.

| Model | Mounting | Lighting | P/N | Price |
|------------|----------|----------|----------|-------|
| C2300 | Panel | None | 10-01340 | - |
| C2300-L4 | Panel | 12V Red | 10-01341 | - |
| C2400-L4P | Pedestal | 12V Red | 10-01343 | - |
| C2400-L4VT | Overhead | 12V Red | 10-01345 | - |

BULBS FOR AIRPATH COMPASSES

14VP/N 11-04016 ea 28V P/N 11-04015..... ea

FALCON AIRCRAFT COMPASSES



These compasses are very similar to the Airpath C2300 & C2400 style compasses above but are priced more economically. New manufacture. Not certified.

C2300 Style Compass (Panel Mount) P/N 10-02067.....
 C2300-L4 Style Lit Compass (Panel Mount)..... P/N 10-02069.....
 C2400 Style Compass (12V Lit) (Pedestal Mount)..... P/N 10-02070.....
 C2400 Style Compass (Unlit) (Pedestal Mount) ... P/N 10-02071.....

SOUTHERN HEMISPHERE COMPASSES

C2300 Style, Unlit Compass P/N 10-02068.....
 C2300 Style, Lit Compass..... P/N 10-02243.....
 C2400 Style, Unlit Compass P/N 10-01704.....

NON-MAGNETIC SCREWDRIVER FOR COMPASSES



This small non-magnetic screwdriver blade is ideal for adjusting magnetic compasses. This blade is durable, corrosion resistant, & can be put on a key chain until needed.

P/N 10-07930.....

AIRPATH COMPASS REPAIR KITS



Kit consists of diaphragm, 1/2pt of compass fluid & face glass gasket.

10-08100
 10-01386
 10-00505
 10-00368
 10-01659

Repair Kit (with fluid) P/N 10-08000.....
 Repair Kit (without fluid)..... P/N 10-08020.....
 Compass Fluid: 1/2 Pint..... P/N 10-08100.....
 Quart P/N 10-08200.....
 Airpath Compass Deviation Card Holder... P/N 10-01658.....
 Deviation Card P/N 10-01659.....
 CB21-914H - Inner gasket..... P/N 10-00505.....
 C21-915G Spacer gasket P/N 10-00368.....
 Diaphragm Only P/N 10-01386.....
 Glass Compass Lens for C2300/C2400 series compasses.
 P/N 10-08010.....

PRECISION VERTICAL CARD COMPASS



The Precision Vertical Card Compass is a totally new concept for today's aircraft. It is a dry compass, designed to replace the float/liquid type compass; no more leaking fluid or backward azimuth readings. It uses eddy current damping and as such has no overshoot. It consists of a 2" vertical rotating dial which is compared with a fixed miniature airplane (lubber line) to present the magnetic heading of the aircraft at all times. Heading information is more natural because the heading is read at the 12 o'clock position and off the nose of the miniature aircraft. The compass card rotates and presents all quadrants in their true relation to line of flight. Requires no power (except for lighting) to operate. Fully TSO'd. Installed in many current production aircraft and helicopters. Size: 2-7/8"H x 2-3/8"W x 2-1/8"D. Wt. 0.6 lb. After installation, compass must be compensated using standard compensation procedures. Also used in sailplanes.

14V..... P/N 10-00421.....
 28V..... P/N 10-00423.....

For Southern Hemisphere Add "-SO" to Part Number.

REPLACEMENT LIGHT BARS FOR PAI-700

14V P/N 10-00092.....
 28V P/N 10-00093.....
 5V Light Assy. P/N 10-02956.....

PRECISION COMPASS MOUNTS

PACMG-2 - Universal mount for many aircraft using a glare shield or deck mount. Models include Beech Baron and Bonanza, Cessna Skyhawk, Skylane and Cardinal..... P/N 10-07500.....
PACMO-U - Universal overhead bracket kit for customer adaptation.
 P/N 10-07600.....

PACMO-CESNO - Custom mount for several Cessna models using one-piece windshield & compass mounting block. Models include Cessna 150, 152, 170, 180, 182, 185 & 210.
 P/N 10-07700.....

PACMO-PIPER - Custom mount for several Piper models with 5/8" hat-section center windshield post. Models include Piper Cherokee, Warrior, Arrow, Archer, Lance, Comanche, Navajo & Cherokee Six.
 P/N 10-07800.....

PACMO-APZ21 - Custom mount for use in Piper Apache, Aztec, & Cessna 421..... P/N 10-07910.....
PACMO-SRN - Custom mount for use in Beech Sierra using windshield mount.
 P/N 10-07920.....

PACMO-KA - Beech King Air..... P/N 10-07921.....
PACMO-EB - Early Bellanca. Compass mounted overhead.
 P/N 10-07922.....

PACMO-LB - Late Bellanca. Compass mounted on windshield.
 P/N 10-07923.....

PACMO-2CN - Cessna early 172, 182 with compass mounted on windshield with 1" center with 1" divider strip..... P/N 10-07924.....
PACMO-340R - Cessna 340 Twin..... P/N 10-07925.....

PACMO-310RN - Cessna 310 Twin..... P/N 10-07926.....
PACMO-GTR - Grumman Tiger, Cheetah. P/N 10-07936.....
PACMO-MHN - Mooney compass mounted on housing covering center post.
 P/N 10-07927.....

PACMO-HMN - Mooney compass mounted on center post with horizontal screws.
 P/N 10-07928.....

PACMO-VMN - Mooney compass mounted on center post with vertical screws.
 P/N 10-07929.....

PACMO-PCN - Comanche with no center post use PACMG-2, twin, SE.
 P/N 10-07931.....

PACMO-R22 - Robinson R22..... P/N 10-07932.....

PACMO-R44 - Robinson R44..... P/N 10-07933.....

PACMO-RV6C - RV6 kit. (Sliding Canopy only, not tip-up)
 P/N 10-07934.....

PACMO-HSN3A - 32.50 40.63 Schweizer 300 & 300 CB.
 P/N 10-07935.....

PACMO-3/4P - w/ a 3/4" post P/N 10-00426.....

PACMO-5/8P - w/ a 5/8" post P/N 10-00431.....

PACMO-7/8P - w/ a 7/8" post P/N 10-00432.....

PACMO-ARCP - Ercoupe..... P/N 10-00435.....

COMPASS COMPENSATOR



The Precision vertical card compass is very sensitive to stray magnetic fields within the aircraft. If the compensators of the compass will not bring the compass within tolerances, it will be necessary to install the HBB47S compensator ("balanced balls"). These balls contain magnets which permit the compass to be properly compensated. Instructions furnished.
 P/N 10-07900.....

MAGNETIC COMPASS SHIELD (MU METAL)

Use this .005" x 5" x 12" metal strip to shield the precision PAI-700 compass from magnetic interference in the instrument panel.
 P/N 11-00973.....

COMPASSES – ENGINE GAUGES



S.I.R.S. "PEGASUS" (TSO'D)

The S.I.R.S. "Pegasus" compass utilizes the most advanced technology and manufacturing methods to produce the most accurate compass in the industry. It utilizes high quality components throughout, including Silicone rubber seals, metal expansion bellows, and Tungsten Carbide pivots. The "Pegasus" has a high-visibility spherical display, and can be viewed over a 140° arc instead

of the standard 90°. Fits standard 2-1/4" panel hole (by 2-1/4" deep) and weighs only 30% of a typical liquid compass. The "Pegasus" comes in blue/white lighted or unlighted versions, and has a 3-yr. warranty.

| NORTHERN HEMISPHERE | | | | | |
|---------------------|----------|-------|-----------|----------|-------|
| P/N | LIGHT | PRICE | P/N | LIGHT | PRICE |
| PG-2A | NONE | . | PG2C-28 | 28V BLUE | . |
| PG2C-12 | 12V BLUE | . | | | |
| SOUTHERN HEMISPHERE | | | | | |
| P/N | LIGHT | PRICE | P/N | LIGHT | PRICE |
| PG-2ASH | NONE | . | PG2C-12SH | 12V LIT | . |
| PG2C-28SH | 28V LIT | . | | | |

S.I.R.S. "NAVIGATOR" (TSO'D)



The S.I.R.S. "Navigator" delivers extremely accurate readings due to it's fully integrated, 4 magnet correction facility. A similar design is used on the Concord, and many civil and military aircraft. Same features as "Pegasus", but is mounted with a fully adjustable bracket that allows attachment to a variety of positions including the glare-shield or the windshield. This allows the compass to be located away from magnetic influences. Size: 20-3/8" h x 2-1/4" w. "Navigator" comes in lighted or unlighted versions; 3yr. warranty.

| NORTHERN HEMISPHERE | | | | | |
|---------------------|----------|-------|---------|----------|-------|
| P/N | LIGHT | PRICE | P/N | LIGHT | PRICE |
| NV-2A | NONE | . | NV2C-28 | 28V BLUE | . |
| NV2C-12 | 12V BLUE | . | | | |
| SOUTHERN HEMISPHERE | | | | | |
| P/N | LIGHT | PRICE | P/N | LIGHT | PRICE |
| NV2C-12SH | NONE | . | NV2C-28 | 28V LIT | . |
| NV2C-12V-SH | 12V LIT | . | | | |

NAVIGATOR MOUNTING BRACKETS & ACCESSORIES

| Description | Part No. | Price |
|---------------------------------|----------|-------|
| Install Kit for Pegasus Compass | 10-02124 | . |
| C1/200 Cessna Single bracket | 10-00272 | . |
| C3/400 Cessna Twin bracket | 10-00271 | . |
| M20/21 Mooney bracket | 10-00273 | . |
| PA28/30 Piper bracket | 10-00274 | . |
| GS1 Glareshield Mount | 10-00276 | . |
| MF1 Shark foot (self adhesive) | 10-00277 | . |



S.I.R.S. NAVIGATOR NV2-2400X

Navigator NV2-2400X by SIRS is designed to replace older, less stable compasses. The NV2-2400X bolts onto the aircraft's glareshield. The Navigator houses a compass rose suspended in a silicone-based fluid and features silicone seals to eliminate the problem of leaks and fluid evaporation common to older compasses and reduces lead and lag errors inherent in liquid-filled compasses. Metal expansion bellows allow

for flexing in high-altitude, unpressurized flight. The display shows 140° of heading, as opposed to the 90° view offered by standard compasses. The TSO'd Navigator comes in 6, 12, & 28V configurations, with a 3 year warranty.

| Northern Hemisphere | | |
|--------------------------------|----------|-------|
| Description | Part No. | Price |
| NV2A-2400 UNLIT COMPASS | 10-00401 | . |
| NV2C-2400 LIT COMPASS 6V | 10-00402 | . |
| NV2C-2400 LIT COMPASS 12V | 10-00467 | . |
| NV2C-2400 LIT COMPASS 28V | 10-00468 | . |
| Southern Hemisphere | | |
| Description | Part No. | Price |
| NAV TSOD COMPASS 28V/LIT SH | 10-02131 | . |
| NAV NV2A-2400 UNLIT COMPASS SH | 10-02132 | . |
| NV2C-2400 LIT COMPASS 28V SH | 10-02134 | . |
| NV2C-2400 LIT COMPASS 12V SH | 10-02133 | . |
| NAV TSOD COMPASS UNLIT SH | 10-02129 | . |
| Accessories | | |
| Description | Part No. | Price |
| INSTALL KIT NAV.SERIES COMPASS | 10-02123 | . |



MD-11 CARBURETOR TEMPERATURE

The MD-11-6 carburetor temperature gauge & B-5 temp. probe are designed to help eliminate carburetor icing by early detection, reduce spark plug fouling, extend engine life, increase range & power, and maximize fuel economy. Use with all Marvel-Schebler & Bendix float type carburetors. FAA approved. Mounts in 2-1/4" instrument hole.

| | |
|--|--------------------|
| 14V carb air temp indicator only | P/N MD-11-3 |
| 28V carb air temp indicator only | P/N MD-11-4 |
| B-5 probe only | P/N B-5 |
| Mating Connector | P/N 10-01563 |
| 14V Carburetor Air Temperature Kit | P/N 10-02759 |
| 28V Carburetor Air Temperature Kit | P/N 10-02760 |



ICEMAN CARBURETOR ICE DETECTION SYSTEM

Fits into a 2-1/4" or 3-1/8" instrument cut-out (or optional bracket) on the panel. The system works on normal 12 or 24V aircraft electrical systems. No temp gauge, no worries about humidity, no graph. Enables an interface with the audio panel, effectively "piping" the ice alert warning sound right into the headset. The ICEMAN is a sealed, solid state unit weighing only 5oz and is currently approved by the FAA in the United States, certified by the CAA, by Transport Canada, and validated in Australia. Probe is included with the system. The Iceman is approved for most general aviation aircraft. Approval list available on request

| | |
|---|----------------------|
| Iceman System (2-1/4") | P/N 10-00057 |
| Replacement Probe | P/N 10-00059 |
| Remote Mounting Brckt (for 2-1/4" only) | P/N 10-00060 |
| Patch Cord kit | P/N 10-00057-1 |
| 3" Front Plate | P/N 10-02163 |

ARP CARBURETOR ICE DETECTION SYSTEM

Made in USA. Available in three (3) different mounting configurations (Panel Mount, Remote Mount and Universal Mount) thus providing flexibility for any aircraft installation. GIVES UP TO 5 MINUTES WARNING TIME by illuminating a RED visual ice warning light. LIGHT WEIGHT less than 13 ounces. SIMPLIFIED INSTALLATION keeps installation cost down - approx. 1 to 3 man-hours. WARRANTY 3-years on Electronics Box and 1-Year on Probe. FAA-STC SA489EA APPROVED for normal, utility and acrobatic airplanes and helicopters equipped with Continental, Franklin and Lycoming type engines and Precision Air-Motive (Facet or Marvel-Schebler) MA-2, MA-3, MA-3A, MA-3SPA, MA-4, MA-4-5, MA-4SPA, MA-5, MA-6, MA-6AA and HA-6 series carburetors. Installation on other aircraft not specified on the STC may be performed via FAA Form 337. FAA-PMA APPROVED for installation on Type Certificated aircraft.

| | |
|--|--------------------|
| Panel Mount, 12V (107AP-12) | P/N 10-09900 |
| Panel Mount, 24V (107AP-24) | P/N 10-03707 |
| Remote Mount, 12V (107AP-R-12) | P/N 10-03708 |
| Remote Mount, 24V (107AP-R-24) | P/N 10-03709 |
| Universal Mount, 12 (107AP-U-12) | P/N 10-03697 |
| Universal Mount, 24 (107AP-U-24) | P/N 10-03698 |
| Spare Probe (107AP-P) | P/N 10-03710 |



FLIGHT DATA SYSTEMS FC-10

Flow: Instantaneous Display of Fuel Flow , Used: Fuel Used , Remaining: Fuel Remaining , Endurance: Time or Distance Remaining , Required: Fuel Required to Active GPS Waypoint , Reserve: Fuel or Time Remaining at Active GPS Waypoint , Efficiency: Miles Per Gallon (or Liter) Displays Fuel Flow and Fuel Used for Each Engine (Two Engine Systems) Features: Communicates with Handheld or Panel Mount GPS , User Selectable Units (Gallons, Liters, Nautical Miles, Statute Miles) , Low Fuel Warning , Best Fuel Computer Value Available , Large Extreme Operating Temperature Display , Soft Orange Backlight with Automatic Brightness , Weighs 2.6oz 12-28 Volt Compatible , Includes Floscan 201B6 Transducer 0.6-60 Gallons/Hour , Includes Pre-Wired Harness , Connector is pin to pin compatible with many JPI, Hoskins, and Shadin Systems .

| | |
|---|--------------------|
| FC-10 Single Engine (additional sender req.) .. | P/N 10-03150 |
| FC-10 Twin Engine | P/N 10-03151 |
| FC-10 With Out Sender | P/N 10-03152 |



FLIGHT DATA SYSTEMS AFF-30 FUEL COMPUTER

Designed for the experimental aircraft owner who wants instantaneous flight information previously reserved only for transports and private jets. The Air Data Computer function features complete Winds Aloft information, Airspeed information including True Airspeed and Mach number, Altitude information such as Density Altitude and Vertical speed, and both Total and Saturated Air Temperature .Complete with GPS communication enabling it to display fuel computer data. The Performance Computer function calculates, instantaneously, Percent Horsepower based on the engine manufacturer's power chart. It also provides backup Tachometer and Manifold Pressure indications. Compatible with most handheld and panel mount GPS units.....P/N 10-03154

IN

ENGINE GAUGES

28 VOLT K.M.C 2" OIL TEMP. GAUGE



Housed in a 2" diameter case, this top quality Kelly Manufacturing Co. oil temperature gauge is operated by an MS28034-1 resistance bulb and is available in °C or °F scale. Size: 2" dia. x 3.12" long. Wt. 4lbs; Power: 28VDC Connector: MS3112E8-4P. Add -C or -F to part no. for °C or °F.
Gauge only round.....P/N 10-02077.....

Resistance bulb.....P/N 10-00953.....
Square bezel.....P/N 10-00943.....

K.M.C 2 INCH TEMP/OIL PRESSURE GAUGE



High accuracy 2" pressure gauge that qualifies per mil-g-7734c, and has standard wet-line connection. Oil temperature is sensed by a MS28034-1 resistance bulb. Dimensions: 2-3/8 X 2-3/8 X 2 Weight: .5 lbs. Power: 0 to 200 PSI & 0-300 PSI..... P/N 10-02075.....
Ms28034-1 Resistance bulb..... P/N 10-00953.....

COMBINATION MANIFOLD PRESSURE FUEL FLOW GAUGE



This space saving 3-1/8" gauge provides manifold pressure (10"-50" Hg) and fuel flow (4-36 GPH). New manufacture by United Instruments. Direct connections. No transducer required.P/N 10-10200.....

2-1/4" UMA MANIFOLD PRESSURE GAUGES



Manifold pressure is one factor used to obtain correct power setting of the engine. The indicators are temperature and altitude compensated. Matte-white dials. Units are new. Manufactured by UMA.
2-1/4" Gauge, 10-50 Hg.P/N 10-11200.....
2-1/4" Gauge, 10-35 Hg.P/N 10-11250.....
UMA optional internal lightingP/N 11-07239.....

FALCON 3 1/8" MANIFOLD GAUGE



Falcon Gauge Manifold Pressure Gauge is designed and manufactured for use on aircrafts and is a standard diaphragm pressure instrument. This indicator is temperature and altitude compensated. Manifold pressure is one of the factors required to obtain the correct power setting of the aircraft engine.
10-50 IN HGP/N 10-02269.....
10-35 IN HGP/N 10-02270.....

3-1/8" UMA MANIFOLD PRESSURE GAUGES



3-1/8" Gauge, 10-35Hg.P/N 10-00080.....
3-1/8" Gauge, 10-50Hg.P/N 10-11300.....
UMA optional internal lighting ..P/N 11-07239.....

UMA FUEL/AIRBOX DIFFERENTIAL PRESSURE GAUGE

Displays the differential pressure between the fuel system and air box on turbo charge engines where it is necessary to maintain constant fuel pressure that is above the airbox pressure. Sender sold separate. (Requires the use of a 1EU007D UMA different pressure sneder.)

1 1/4"P/N 10-00979.....
Sender 0-7 PSI.....P/N 10-00980.....

FUEL PRESSURE GAUGES



Mechanical gauge with round case mounts in 2-1/8" dia. hole. Matte-white dial markings, chrome bezel. Internal lighting available. New manufacturer (Datcon).
0-15 PSIP/N 100169.....
Light KitP/N 06215-00.....

MINI WATER PRESSURE GAUGE



| Range | P/N | Price |
|--------------|----------|-------|
| (-5)-25 PSI | 10-22241 | . |
| (-15)-15 PSI | 10-22248 | . |

ROCHESTER OIL TEMPERATURE GAUGES



Rochester oil temperature gauges have matte-white dial with black bezel. Mount in 2-1/16" dia. hole. New manufacture. Furnished with 5/8-18 UNF 2A adapter nut. Available in the following temperature ranges and capillary lengths.
P/N 10-11600 100-250°F 60" Cap.....
P/N 10-11700 100-250°F 72" Cap.....
P/N 10-11800 00-250°F 144" Cap.....
10-11900 100-250°F 48" Cap.....

Adapter Nuts Only: 44-0024 5/8-18UNF x 5/8-18UNF.....

SCOTT OIL TEMPERATURE GAUGE



A quality gauge which is complete with all installation fittings. Range is 100 -250° F. 5/16-18 female capillary adapter fitting. 60" lead length.

P/N 10-00954.....



OIL TEMPERATURE BULB ADAPTER

Brass fitting used to shorten long capillary bulbs for use in light aircraft engines. Internal 5/8-18 threads mate with fitting on bulb. External 5/8-18 threads fit into engine.

P/N 95527.....



ROCHESTER OIL PRESSURE GAUGES

Rochester oil pressure gauges have matte-white dial with black bezel. Mount in 2-1/16" dia. hole. 1/8" NPT port fits AN910-1D coupling. New mfg.

0-50 PSI..... P/N 10-22301.....
0-80 PSI*.....P/N 10-00015.....
0-120 PSI..... P/N 10-22302.....

*Chrome Bezel



MILITARY OIL PRESSURE GAUGE

AN5771-2 Military style gauge with sq. case. Mounts in 2-1/4" dia. hole. New surplus. Matte-White Dial (0-150 PSI)

P/N 10-00955.....



SCOTT OIL PRESSURE GAUGE

Scott's quality Oil Pressure Gauge features 0-120 PSI range and 1/8 NPT thread on flared tube fitting.

P/N 10-00956.....



OIL PRESSURE INSTALLATION KIT

This kit contains 4 Weatherhead brass fittings with 1/8" pipe thread & 6 ft. of 1/8" Nylo-Seal tubing. Compatible with most mechanical oil pressure gauge installations.

P/N 10-12000.....

MS28034-3 ENGINE TEMPERATURE SENSOR



Presently in use in government and general aviation industry under liquid and gaseous conditions, this sensing device exceeds stringent U.S. Military Specifications for response time, burst pressure, and AC high potential tests.

P/N 10-01668.....

3-IN-1 GAUGES (ELECTRIC OIL TEMP)



Oil temperature range is -50° to 150°C, oil pressure 200 psi, fuel pressure 0-25 psi. The pressure gauges operate by direct connection to the appropriate system and the oil temperature by an electrical resistance bulb probe. New installation requires Cannon plugs & cable clamps for instrument and resistance bulb.

Certified Overhauled Unit - Gauge..... P/N 10-12800.....
3-IN-1 White Electric Gauge Fahrenheit P/N 10-03144.....
MS3106A-14S-2S Cannon Plug P/N 10-00790.....
MS3057-6A Cable Clamp for Instrument P/N 10-00957.....
MS28034-1 Res. Bulb, 1-7/8" (#563BH) P/N 10-00953.....
MS3106A-12S-3S Cannon Plug (Res.Bulb) P/N 10-00958.....
MS3057-4A Cable Clamp for Res. Bulb P/N 10-00959.....

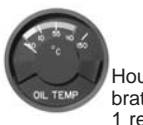
KELLY MANUFACTURING TORQUE INDICATORS



Our Torque Indicators are a wet line, direct reading bourdon tube type instrument, housed in a 2" diameter case. Unit can be calibrated over a wide range of PSI input to direct read torque. Units can be furnished to your specifications. Indicate needed pressure input and pressure-to-torque conversion. This unit cannot be damaged by oil back up in vent line. DIMENSIONS: 2" diameter x 2.125" length, Weight: 0.4 lbs, Power: Wet line direct reading pressure gage

| Model No. / Part No. | Description | Price |
|---------------------------|---|-------|
| 27-3007-1 P/N 10-03441 | 0 to 1800 FT/LB, Green Arc 0 - 1628, Red Line at 1628 | . |
| 27-3007-4 P/N 10-03442 | 0 to 75 P.S.I., Green Arc 0 - 64.4, Red Line 64.4 | . |
| 27-2007-5 P/N 10-03444 | 0 to 75 P.S.I., Green Arc, Red Line at 53 | . |
| 27-3007-7 P/N 10-03443 | 0 to 75 P.S.I 0 to 53 | . |

KELLY MANUFACTURING OIL TEMPERATURE INDICATOR



Housed in a 2" diameter case, this instrument can be calibrated in C° or F°. Oil Temperature is sensed by a MS28034-1 resistance bulb. DIMENSIONS: 2" Dia. x 3.12" L Weight: 0.4 lbs Power: 28VDC Connector: MS3112E8-4P
29-1004-10 - Green Arc 0° C -110° C, Yellow Arc -40° C - 0° C Red Line -40° & 110° C P/N 10-03445.....

UMA ENGINE GAUGES

UMA 2-1/4" SINGLE EGT & CHT GAUGES

These highly reliable and lightweight gauges are self-contained, requiring no external power source. Specify probe size and type. Made in the USA.



2-1/4" CHT Gauge
Range 100-600 F P/N 10-02057

Type J CHT Probes

10mm Spark Plug Ring P/N 10-00960
12mm Spark Plug Ring P/N 10-00961
14mm Spark Plug Ring P/N 10-00962
18mm Spark Plug Ring P/N 10-00963
3/8"-24 Bayonet w/snap P/N 10-00795



2-1/4" EGT Gauge
Range: 700-1700 F P/N 10-22275

Type K EGT Probes

1-5/8" - 2-1/2" Clamp P/N 10-00828
1-2" Clamp P/N 10-00966
8mm, Bayonet-Rotax P/N 10-00967
Optional internal lighting for all UMA 2-1/4", 3-1/8" instruments (except altimeter). P/N 11-07239

ELECTRONIC UMA 2-1/4" FUEL PRESSURE GAUGE



This reliable and rugged instrument is designed using a moving coil type movement for aircraft use. The electronic pressure gauge connects to pressure transducer which mounts directly to aircraft engine. Made in USA. Order transducer separately.

0-15 PSI P/N 10-22209
0-30 PSI P/N 10-22210
0-80 PSI P/N 10-02060
UMA Pressure Sender N1EU35G for 0-80 PSI (P/N 10-02060) P/N 10-01058
UMA Pressure Sender 1E1 for 0-50 and 0-80 PSI Gauge. P/N 10-00007

ELECTRONIC UMA 2-1/4" OIL PRESSURE GAUGE



This reliable and rugged instrument is designed using a moving coil type movement for aircraft use. The electronic pressure gauge connects to pressure transducer which mounts directly to aircraft engine. Made in USA. Order transducer separately.

0-80 PSI P/N 10-22245
Pressure Sensor (0-130) P/N 3060-18
0-80 Transducer Only P/N 10-00007

UMA 2-1/4" WATER TEMPERATURE GAUGE



This instrument is designed to be durable yet lightweight. Excellent for a wide variety of homebuilt aircraft applications. Made in USA. Order probe separately.

0-300°F P/N 10-02058
Probes
1/8" NPT (Rotax) P/N 10-00968
3/8-24 (automotive) P/N 10-00969

UMA 2-1/4" OIL TEMPERATURE GAUGE



This instrument is designed to be durable yet lightweight. Excellent for a wide variety of homebuilt aircraft applications. Made in USA. Order probe separately.

80-280°F P/N 10-22285
Probes
1/8" NPT (Rotax) P/N 10-00968
3/8-24 (automotive) P/N 10-00969
5/8-18 (Lycoming, Continental) P/N 10-00418
10mm (Rotax 912, 914) P/N 10-00973

UMA OPTIONAL INTERNAL LIGHTING

Optional internal lighting for all UMA 2-1/4", 3-1/8" instruments (except altimeter). P/N 11-07239

UMA DUAL AMP/VOLTMETERS



These 2-1/4" dual amp voltmeters are ideal for any aircraft where panel space is limited. Amperage is displayed at all times, and simply push a button to display voltage. Complete with gauge and shunt. Voltage range 0-30 volts.

Range:
30 amp P/N 10-14680
60 amp P/N 10-14685
80 amp P/N 10-14690
100 amp P/N 10-14695
0-150 amp P/N 10-00082

UMA Optional internal lighting P/N 11-07239

MECHANICAL UMA 2-1/4" FUEL PRESSURE GAUGE



These factory new fuel pressure gauges from UMA fit standard 2-1/4" panel hole. They are mechanical, wet-line gauges and require no sending unit.

0-25 PSI P/N 10-02356
0-50 PSI P/N 10-00316
0-10 PSI P/N 10-22201
0-30 PSI P/N 10-22203
0-100 PSI P/N 10-22205

MECHANICAL UMA 2-1/4" OIL PRESSURE GAUGE



These factory new oil pressure gauges from UMA fit standard 2-1/4" panel hole. They are mechanical, wet-line gauges and require no sending unit.

0-50 PSI P/N 10-22240
0-130 PSI P/N 10-22242
10-100 PSI P/N 10-02357

UMA 1" PRESSURE GAUGES



This mechanical, direct hook-up pressure indicator is ideal for monitoring the engine pump cooling system. Suitable to a wide variety of homebuilt aircraft applications. Made in USA.

| Range | Size | Part No. | Price |
|------------------|------|--------------|-------|
| 0-10 PSI (water) | 1" | P/N 10-22247 | . |



UMA 1" OIL PRESSURE GAUGE

Case is molded ABS plastic. Wt:1.4oz.
Part No. Range Dial Mrkg Price
10-22251 25-125 PSI B&W .



UMA 1" FUEL PRESSURE GAUGE

Case is molded ABS plastic. Wt:1.4oz.
Part No. Range Dial Mrkg Price
10-22252 0-10 PSI B&W .



MECHANICAL UMA 2 1/4" WATER PRESSURE GAUGE

This mechanical, direct hook-up pressure indicator is ideal for monitoring the engine pump cooling system. Suitable to a wide variety of homebuilt aircraft applications. Made in USA.

| Range | Size | Part No. | Price |
|----------------|--------|----------|-------|
| -15 to +15 PSI | 2-1/4" | 10-22249 | . |



2-1/4 INCH UMA WATER TEMPERATURE 100-300F

2-1/4 inch UMA Electronic (UMA P/N 12-360-300F°) Water Temperature Gauge, Range: 100-300 deg. F° P/N 10-02058



UMA 2 1/4" FLAP POSITION INDICATOR

This 2-1/4" flap indicator uses a resistance potentiometer as a flap position sensor. Transmitter required. Wt: 9.8 oz.

| | | | |
|-------------------|-------|--------------|-------|
| Indicator (0-30°) | ..... | P/N 10-02441 | ..... |
| Indicator (0-40°) | ..... | P/N 10-22250 | ..... |
| Indicator (0-50°) | ..... | P/N 10-22265 | ..... |
| Indicator (0-60°) | ..... | P/N 10-02442 | ..... |
| Transmitter | ..... | P/N AN5785 | ..... |

UMA OPTIONAL INTERNAL LIGHTING

Optional internal lighting for all UMA 2-1/4", 3-1/8" instruments (except altimeter). P/N 11-07239

MINI OIL PRESSURE GAUGE



Miniature mechanical instrument, only 1-1/4" dia., as used in many production aircraft. New manufacture.
0-125 PSI Oil Press P/N 10-12400



MINI FUEL PRESSURE GAUGES

1-1/4" Dia. New manufacture by UMA.

| | | | |
|---------------------|-------|--------------|-------|
| 0-10 PSI Fuel Press | ..... | P/N 10-12100 | ..... |
| 0-35 PSI Fuel Press | ..... | P/N 10-12200 | ..... |
| 0-50 PSI Fuel Press | ..... | P/N 10-12300 | ..... |

IN

UMA ENGINE GAUGES



UMA 2-1/4" ELECTRONIC WATER PRESSURE 270° GAUGE

Electronic Water Pressure Gauges connect to a pressure transducer and connects to the gauge with wires. Standard dial markings are black and white.

2-1/4 inch
UMA Electronic Water Pressure Gauge Case: Valox 420 Plastic Weight: 4.8 oz.

2-1/4", 0-15 PSI P/N 10-02372
2-1/4", 0-30 PSI P/N 10-02373

SENDER NOT INCLUDED



UMA 2-1/4" ELECTRONIC OIL PRESSURE 270° GAUGE

Electronic Oil Pressure Gauges connect to a pressure transducer and connects to the gauge with wires. Standard dial markings are black and white.

2-1/4 inch
UMA Electronic Oil Pressure Gauge Case: Valox 420 Plastic Weight: 4.7 oz.

2-1/4", 0-60 PSI, TSO'd..... P/N 10-02415
2-1/4", 0-80 PSI, TSO'd..... P/N 10-02416
2-1/4", 0-100 PSI, TSO'd..... P/N 10-02417
2-1/4", 0-100 PSI P/N 10-02424
2-1/4", 150 PSI P/N 10-02761

SENDER NOT INCLUDED



UMA ELECTRONIC FUEL PRESSURE 270° GAUGE

Electronic Fuel Pressure Gauges connect to a pressure transducer and connects to the gauge with wires. Standard dial markings are black and white.

2-1/4 inch
UMA Electronic Fuel Pressure Gauge Case: Valox 420 Plastic Weight: 4.7 oz.

2-1/4", 0-7 PSI, TSO'd..... P/N 10-02412
2-1/4", 0-15 PSI, TSO'd..... P/N 10-02413
2-1/4", 0-60 PSI, TSO'd..... P/N 10-02414
2-1/4", 0-15 PSI P/N 10-02421
2-1/4", 0-30 PSI P/N 10-02422
2-1/4", 0-60 PSI P/N 10-02423

SENDER NOT INCLUDED



UMA ELECTRONIC 2-1/4" HYDRAULIC PRESSURE 270° GAUGE

Electronic Hydraulic Pressure gauge connects to a precision, high pressure transducer which mounts directly to the aircraft's hydraulic system. Standard markings are black and white.

2-1/4 inch
UMA Electronic Hydraulic Pressure Gauge Case: Valox 420 Plastic Weight: 4.7 oz.

2-1/4", 0-2000 PSI, TSO'd P/N 10-02459
2-1/4", 0-2000 PSI P/N 10-02458

SENDER NOT INCLUDED



UMA 2-1/4" ELECTRONIC OIL TEMPERATURE 270° GAUGE

These rugged aircore gauges work with either thermocouple or thermistor probes. Standard markings are black and white.

2-1/4 inch
UMA Electronic Oil Temperature Gauge Case: Valox 420 Plastic Weight: 4.8 oz.

2-1/4", 100-300° F, TSO'd P/N 10-02443
2-1/4", 100-300° F P/N 10-22285

SENDER NOT INCLUDED



UMA 3 IN 1 ELECTRONIC INSTRUMENT

While rumors have been circulating regarding a new way to maximize on space, saving instruments, UMA has now developed a product line that can combine any three electronic instruments into a 3-1/8" case.

Standard product is with black and white dials, but UMA's reputation is to provide custom range markings and to meet customer demand for specific design. The 3-in-1 can now satisfy space saving, custom markings, and combine any selection of 3 instruments into a 3-1/8" opening to fit your needs ...Customization is Great!!

***Note - Senders are required and sold separately.**

UMA Range Markings P/N 10-03452
UMA Range Markings P/N 10-02792



UMA ELECTRONIC 2-1/4" WATER TEMPERATURE 270° GAUGE

2-1/4 inch UMA Electronic (UMA P/N T12212U300F000) Water Temperature Gauge Range: 100-300 deg. F TSO2-1/4", 100-300 °F TSO'd . P/N 10-02428



UMA ELECTRONIC 2-1/4" CHT 270° GAUGE

These gauges are available for either thermocouple or thermistor probes. Standard markings are black and white.

P/N 10-02057 2-1/4", 100-600 °F Moving Coil
Pictured P/N 10-02429
2-1/4", 100-300 °F P/N 10-02426
2-1/4", 100-600 °F P/N 10-02057



UMA ELECTRONIC 2-1/4" EGT 270° GAUGE

These highly reliable and lightweight gauges are self-contained, requiring no external power source. Specify probe size and type. Standard markings are black and white. Exhaust Gas Temp Gauge Case: Valox 420

Plastic Weight: 4.7 oz.
2-1/4", 700-1700 °F Moving coil P/N 10-22275
2-1/4", 700-1700 °F P/N 10-02427

UMA ELECTRONIC 2-1/4" CARBURETOR AIR TEMPERATURE 270° GAUGE

These gauges use either thermistor or electronic sensors. Standard markings are black and white.

2-1/4", -60-120 °F TSO'd..... P/N 10-02379
2-1/4", -20-120 °F P/N 10-02391



UMA TSO'D 2-1/4" CARBURATOR AIR TEMPERATURE GAUGE

TSO'd Carburetor Temperature 2 1/4" gauge. Range from -60 - 120°F.

NOTE: This is the standard black and white gauge. For color range markings as shown you must add the color range markings part no. to your order.

P/N 10-03465
UMA Color Range Markings P/N 10-02792



UMA 2-1/4" ELECTRONIC MANIFOLD PRESSURE 270° GAUGE

Electronic Manifold Pressure gauges connect to a pressure transducer which connects to the aircraft's engine and indicates the absolute pressure in the intake manifold of the aircraft. These units are very precise and avoid plumbing issues. Standard markings are black and white.

2-1/4", 5-35 IN. HG..... P/N 10-02389
2-1/4", 5-50 IN/ HG P/N 10-02390

SENDER NOT INCLUDED



UMA 2-1/4" ELECTRONIC OUTSIDE AIR TEMPERATURE

The digital Outside Air Temperature (O.A.T.) is available in either Fahrenheit or Celsius. Standard models use a Red LED display.

2-1/4", -40-60 °C, 270° P/N 10-02387
2-1/4", -40-140 °F, 270° P/N 10-02388
2-1/4", 0-100 °C P/N 10-00205
2-1/4", -40-165 °F P/N 10-00206

SENDER INCLUDED



UMA AMMETER SHUNT 30/60/80/100AMP

WUMA Ammeter shunt 30AMP, 60AMP, 80AMP, and 100AMP.

Shunt 30AMP 1C1 P/N 10-02072
Shunt 60AMP 1C2 P/N 10-02073
Shunt 80 AMP 1C3 P/N 10-02352
Shunt 100AMP 1C4 P/N 10-02074

UMA OPTIONAL INTERNAL LIGHTING

Optional internal lighting for all UMA 2-1/4", 3-1/8" instruments (except altimeter). P/N 11-07239

IN

UMA ENGINE GAUGES



UMA 2-1/4" FUEL FLOW 270° GAUGE

These affordable indicators display gallons/hour fuel flow in a conventional analog instrument package. Standard markings are black and white.

- 2-1/4" 08- GPH .. P/N 10-02407
- 2-1/4" 0-20 GPH P/N 10-02408
- 2-1/4" 0-30 GPH P/N 10-02409
- Turbing Flow Transducer 0.6-60 GPH
P/N 10-02406



Turbine Flow Transducer

UMA 2-1/4" FUEL AIR BOX 270° PRESSURE

Electronic, Fuel/Air-box Differential Pressure gauges and senders are designed for the Rotax 914 engine but have other applications where differential pressures need to be measured. It eliminates having to calculate the fuel/air-box differential pressure by looking at two separate gauges and having two separate senders.

- 2-1/4" 0-7 diff. PSI (U)
P/N 10-00979

SENDER NOT INCLUDED



**2-1/4 inch UMA Fuel
Airbox Pressure
Case: Valox 420
Plastic
Weight: 4.8 oz.**

UMA OPTIONAL INTERNAL LIGHTING

Optional internal lighting for all UMA 2-1/4", 3-1/8" instruments (except altimeter). P/N 11-07239.....



UMA 2-1/4" ELECTRONIC FUEL QUANTITY GAUGE

SENDER NOT INCLUDED

| Description | Part No. | Price |
|---|----------|-------|
| 2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/270° Sender: (C) 0-5V | 10-02392 | . |
| 2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/180° Sender: (C) 0-5V | 10-02393 | . |
| 2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/270° Sender: (F) 240/30 ohms | 10-02394 | . |
| 2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/180° Sender: (F) 240/30 ohms | 10-02395 | . |
| 2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/180° Sender: (F) 0-30 ohms | 10-02396 | . |
| 2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/270° Sender: (F) 0-90 ohms | 10-02397 | . |
| 2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/180° Sender: (F) 0-30 ohms | 10-02398 | . |
| 2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/270° Sender: (F) 78-6 ohms | 10-02399 | . |
| 2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/180° Sender: (F) 78-6 ohms | 10-02401 | . |
| 2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/ Sender: (C) 0-5V | 10-02410 | . |
| 2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/ Sender: (F) 240/30 ohms | 10-02411 | . |

UMA PRESSURE SENDERS

UMA's pressure senders offer high reliability and accuracy at an affordable cost. They use precision solid state sensors and are designed for rugged use in just about any environment.



**VDO Pressure
Sender (V)**
1/8" NPTM
Connection



**UMA Pressure
Sender (U)(G)(D)**
1/8"-27 NPTF
Connection(s)
1' Cable 5/8-18
Mounting Thread



**Ashcroft Precision
Sender (A)**
1/8" NPTM
Connection w/9'
Cable

| Description | PSI | Part No. | Price |
|-----------------------------------|----------------------|----------|-------|
| VDO Pressure Sender (V) | 80 PSI (0-5 BAR) | 10-00007 | . |
| VDO Pressure Sender (V) | 150 PSI (0-10 BAR) | 3060-18 | . |
| UMA 1E3 PSI Sender (U) | 0-30 PSI | 10-03464 | . |
| UMA Pressure Sender (U) | 0-7 PSI Differential | 10-00980 | . |
| UMA Pressure Sender (U) | 0-7 PSI | 10-01057 | . |
| UMA Pressure Sender (U) | 0-35 PSI | 10-01058 | . |
| UMA Pressure Sender (U) | 0-70 PSI | 10-01059 | . |
| UMA Pressure Sender (U) | 0-100 PSI | 10-01060 | . |
| UMA Pressure Sender (U) | 0-150 PSI | 10-01061 | . |
| UMA Pressure Sender (U) | 0-60 InHg Absolute | 10-01062 | . |
| UMA Pressure Sender T1EU35(G)(D) | 0-35 PSI | 10-02646 | . |
| UMA Pressure Sender T1EU100(G)(D) | 0-100 PSI | 10-02647 | . |
| Ashcroft Precision Sender (A) | 0-15 PSI | 10-00526 | . |
| Ashcroft Precision Sender (A) | 0-30 PSI | 10-02418 | . |
| Ashcroft Precision Sender (A) | 0-100 PSI | 10-00529 | . |
| Ashcroft Precision Sender (A) | 0-150 PSI | 10-00530 | . |
| Ashcroft Precision Sender (A) | 0-2000 PSI | 10-02420 | . |

UMA TEMPERATURE PROBES



**(U) All 1BX
Temperature Probes**
contain a thermistor for
temperatur sensing. 6"
Lead Wires.



**(J) All 2B1X & 2B0X
Temperature
Probes** use Type J
Thermocouple. 6' Lead
Wires.



**(K) All 2B2X & 2B3X
Temperature
Probes** use Type K
Thermocouple.
6' Lead wires

| UMA P/N | Sizes | Our P/N | Price |
|---------|--|----------|-------|
| 1B1 | Thread: 1/8 NPT, 1/2 Hex Head | 10-00968 | . |
| 1B2 | Thread: 3/8-24, 5/8 Hex Head (Auto) | 10-00969 | . |
| 1B3 | Thread: 5/8-18, 7/8 Hex Head (Lyc.) | 10-00418 | . |
| 1B4 | Thread: 10mm x 1.5 Pitch (Rotax 912 & 914) | 10-00973 | . |
| 1B5F | Thread: 3/8-24, 2-1/4" OAT F° | 10-02374 | . |
| 1B6 | Thread: 16mm x 1.5 Pitch | 10-02375 | . |
| 1B7 | Thread: 12mm x 1.5 Pitch | 10-02376 | . |
| 1B8 | Thread: 1/4-20 (Carb. Temp.) | 10-01156 | . |
| 1B10 | Thread: 1/4-28 | 10-02377 | . |
| 1B11 | Thread: 1/4-18 NPT | 10-02378 | . |
| 2B10 | 10mm Spark Plug Ring | 10-00960 | . |
| 2B12 | 12mm Spark Plug Ring | 10-00961 | . |
| 2B14 | 14mm Spark Plug Ring | 10-00962 | . |
| 2B18 | 18mm Spark Plug Ring | 10-00963 | . |
| 2B01 | Bayonet Type: 1/8 NPT | 10-02448 | . |
| 2B02 | Bayonet Type: 3/8"-24, w/snap | 10-00795 | . |
| 2B011 | Bayonet Type: 1/4-18 NPT | 10-02451 | . |
| 2B20 | Clamp Size: 1-5/8 - 2-1/2" Length: 1" Tip | 10-00828 | . |
| 2B21 | Clamp Size: 1 - 2" Length: 1" Tip | 10-00966 | . |
| 2B30 | Clamp Size: 8mm, Bayonet Length: (Rotax) | 10-00967 | . |

UMA 1-1/4" ENGINE INSTRUMENTS



Monitor your engine's vitals with a full line of space saving 1-1/4" engine instruments with 240 degree analog sweep. These instruments allow you the opportunity to utilize panel space without compromising readability. No longer do you have to decipher cluster gauges or push buttons for readings or try to concentrate on flashing numbers. These premiere UMA instrument are electronic and can be powered from 14 or 28 volts. Signals are acquired from remote mounted sensors, processed and displayed on analog dials with easy to read markings. Each gauge uses rugged aircore meter movement for vibration resistance and repeatability. Each gauge can be placed in a 1-1/4" diameter hole and mounted behind the panel with (4) 6-32 screws. They can be cluster mounted as close as 11/2" centers.

STREAMLINE • STACKABLE • EASY TO READ • RUGGED DESIGN

CYLINDER HEAD TEMP. (CHT)

| Description | Part No. | Price |
|--------------------------------------|----------|-------|
| CHT Gauge 100-300°F | 10-00035 | . |
| CHT Gauge 100-600°F | 10-00036 | . |
| CHT Thermocple 14mm Plug (Rotax) | 10-00962 | . |
| CHT Thermocple 18mm Plug (Lyc.) | 10-00963 | . |
| CHT Thermocple 3/8-24 Bayonet (Lyc.) | 10-00795 | . |

OIL PRESSURE

| Description | Part No. | Price |
|------------------------------|----------|-------|
| Oil Pressure Gauge 0-80psi | 10-00037 | . |
| Oil Pressure Gauge 0-130psi | 10-00038 | . |
| Oil Pressure Sender 0-80psi | 10-00007 | . |
| Oil Pressure Sender 0-150psi | 3060-18 | . |

FUEL QUANTITY

| Description | Part No. | Price |
|---------------------------------|----------|-------|
| Fuel Qty. Ind. (Float 240-30) | 10-00039 | . |
| Fuel Qty. Ind. (Cap. 5v) | 10-00040 | . |
| Sender (Float type 240-30 ohms) | 10-00056 | . |
| Sender (Capacitance 0-5V) | 10-00797 | . |

AMMETER

| Description | Part No. | Price |
|--------------------------|----------|-------|
| Ammeter ±30 Shunt incl. | 10-00041 | . |
| Ammeter ±100 Shunt incl. | 10-00043 | . |
| Ammeter +30 | 10-02380 | . |
| Ammeter +60 | 10-02381 | . |
| Ammeter +80 | 10-02382 | . |
| Ammeter +100 | 10-02383 | . |

WATER PRESSURE

| Description | Part No. | Price |
|----------------------------|----------|-------|
| Water Press. Gauge 0-15psi | 10-00044 | . |
| Water Press. Gauge 0-30psi | 10-00045 | . |

WATER TEMPERATURE

| Description | Part No. | Price |
|-----------------------------|----------|-------|
| Water Temp. Gauge 100-300°F | 10-02457 | . |

OUTSIDE AIR TEMPERATURE

| Description | Part No. | Price |
|------------------|----------|-------|
| OAT (-25) -40°C | 10-02385 | . |
| OAT (-10) -110°F | 10-02386 | . |

EXHAUST GAS TEMPERATURE (EGT)

| Description | Part No. | Price |
|-------------------------------------|----------|-------|
| EGT Gauge 700-1700°F | 10-00046 | . |
| EGT Thermocple Clamp style (Lyc.) | 10-00828 | . |
| EGT Thermocple 8mm, Bayonet (Rotax) | 10-00967 | . |

FUEL FLOW

| Description | Part No. | Price |
|--------------------|----------|-------|
| Fuel Flow 0-8 6PH | 10-02403 | . |
| Fuel Flow 0-20 6PH | 10-02402 | . |
| Fuel Flow 0-30 6PH | 10-02405 | . |

OIL TEMPERATURE

| Description | Part No. | Price |
|--|----------|-------|
| Oil Temp. Gauge 100-300°F | 10-00047 | . |
| 1-1/4 inch VDO - TSO'd Electronic Temperature Gauges 100-300 deg.F | 10-02779 | . |
| Oil Temp. Probe 3/8-24 (Automotive) | 10-00828 | . |
| Oil Temp. Probe 5/8-18 (Lyc./Cont.) | 10-00418 | . |
| Oil Temp. Probe 10mm (Rotax 912/914) | 10-00973 | . |

FUEL PRESSURE

| Description | Part No. | Price |
|------------------------------|----------|-------|
| Fuel Pressure Gauge 15psi | 10-00048 | . |
| Fuel Pressure Gauge 30psi | 10-00049 | . |
| Fuel Pressure Gauge 0-80 psi | 10-00050 | . |
| Fuel Pressure Sender 80psi | 10-00007 | . |

VOLTMETER

| Description | Part No. | Price |
|------------------|----------|-------|
| Voltmeter 18-36V | 10-00052 | . |
| Voltmeter 9-17V | 10-00578 | . |

FLAP INDICATOR

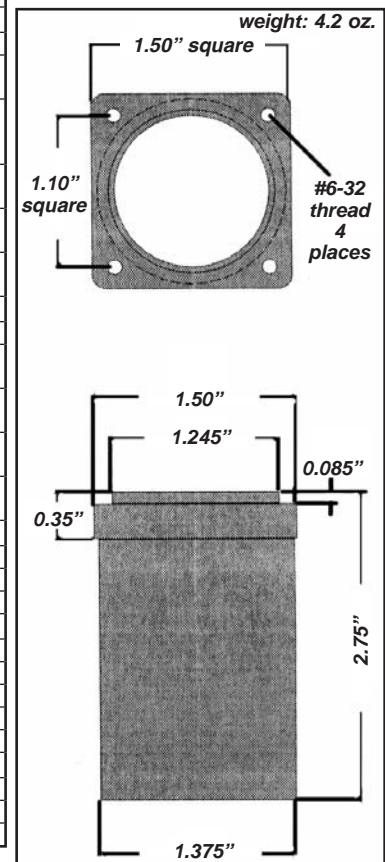
| Description | Part No. | Price |
|---------------------------------|----------|-------|
| Flap Position Indicator 0-30° | 10-00053 | . |
| Flap Position Indicator 0-40° | 10-00054 | . |
| Flap Position Indicator up-full | 10-00055 | . |
| Flap Indicator Transducer | AN5785 | . |

MANIFOLD PRESSURE

| Description | Part No. | Price |
|-------------|----------|-------|
| 5-35" | 10-02438 | . |
| 5-50" | 10-02439 | . |

For Experimental aircraft only. See next page for TSO'd Gauges. Mount individually or as a cluster.

MOUNTING INFORMATION



IN

UMA 1-1/4" TSO'd ENGINE INSTRUMENTS

These 1 1/4" instruments are identical to the 1 1/4" UMA Gauges on previous page, except these are TSO'd for certified aircraft.



| UMA No. | Size & Type | Range / Sender Sender Range | Markings & Sweep | Part No. | Price |
|-------------------|---------------------------------|-----------------------------------|-----------------------|----------|-------|
| TO4 113V 080P 000 | 1 1/4" OIL PRESS | 0-80 PSI (VDO) | B & W | 10-00037 | . |
| TO4 113V 130P 000 | 1 1/4" OIL PRESS | 0-130 PSI (VDO) | B & W | 10-00533 | . |
| TO4 1135 060P 000 | 1 1/4" OIL PRESS | 0-60 PSI (ASHCROFT) | B & W | 10-00534 | . |
| TO4 1135 100P 000 | 1 1/4" OIL PRESS | 0-100 PSI (ASHCROFT) | B & W | 10-00535 | . |
| TO4 1135 150P 000 | 1 1/4" OIL PRESS | 0-150 PSI (ASHCROFT) | B & W | 10-00536 | . |
| TO4 1135 010B 000 | 1 1/4" OIL PRESS | 0-10 BAR | B & W | 10-00537 | . |
| TO4 112V 015P 000 | 1 1/4" FUEL PRESS | 0-15 PSI (VDO) | B & W | 10-00538 | . |
| TO4 112V 030P 000 | 1 1/4" FUEL PRESS | 0-30 PSI (VDO) | B & W | 10-00539 | . |
| TO4 112V 080P 000 | 1 1/4" FUEL PRESS | 0-80 PSI (VDO) | B & W | 10-00540 | . |
| TO4 1125 015P 000 | 1 1/4" FUEL PRESS | 0-15 PSI (ASHCROFT) | B & W | 10-00541 | . |
| TO4 1125 030P 000 | 1 1/4" FUEL PRESS | 0-30 PSI (ASHCROFT) | B & W | 10-00542 | . |
| TO4 1125 060B 000 | 1 1/4" FUEL PRESS | 0-60 PSI (ASHCROFT) | B & W | 10-00543 | . |
| TO4 1125 100P 000 | 1 1/4" FUEL PRESS | 0-100 PSI (ASHCROFT) | B & W | 10-00544 | . |
| TO4 1125 150B 000 | 1 1/4" FUEL PRESS | 0-150 PSI (ASHCROFT) | GA 59-115, RR@ 59-115 | 10-00545 | . |
| TO4 115V 015P 000 | 1 1/4" WATER PRESS | 0-15 PSI (VDO) | B & W | 10-00546 | . |
| TO4 115V 030P 000 | 1 1/4" WATER PRESS | 0-30 PSI (VDO) | B & W | 10-00547 | . |
| TO4 1155 015P 000 | 1 1/4" WATER PRESS | 0-15 PSI (ASHCROFT) | B & W | 10-00548 | . |
| TO4 1155 030P 000 | 1 1/4" WATER PRESS | 0-30 PSI (ASHCROFT) | B & W | 10-00549 | . |
| TO4 1145 2K0P 000 | 1 1/4" HYDRAULIC PRESS | 0-2000 PSI (ASHCROFT) | B & W | 10-00550 | . |
| TO4 11A5 100P 000 | 1 1/4" GEARBOX OIL PRESS | 0-100 PSI (ASHCROFT) | B & W | 10-00551 | . |
| T12 113U 150C 000 | 1 1/4" OIL TEMP | 40-150 0C | B & W | 10-00555 | . |
| T12 113U 300F 000 | 1 1/4" OIL TEMP | 100-300 0F | B & W | 10-00556 | . |
| T12 115U 150C 000 | 1 1/4" WATER TEMP | 40-150 0C | B & W | 10-00557 | . |
| T12 115U 300F 000 | 1 1/4" WATER TEMP | 100-300 0F | B & W | 10-00558 | . |
| T12 116U 150C 000 | ø1 1/4" CHT | 40-150 0C | B & W | 10-00559 | . |
| T12 116V 300F 000 | 1 1/4" CHT (VDO) | 100-300 0F | B & W | 10-00560 | . |
| T12 116J 530C 000 | 1 1/4" CHT | 50-300 0C | B & W (Thermocouple) | 10-00561 | . |
| T12 117K 1K7F 000 | 1 1/4" EGT | 100-900 0C | B & W (Thermocouple) | 10-00562 | . |
| T12 118U 120F 000 | 1 1/4" CARB. TEMP | -60-120 0F | B & W | 10-00563 | . |
| T12 11AU 300F 000 | 1 1/4" GEARBOX TEMP | 100-300 0F | B & W | 10-00564 | . |
| T12 11T5 1K0C 000 | 1 1/4" TURBINE TEMP | 0-1000 0C | B & W, 5V INPUT | 10-00565 | . |
| T18 1125 1C10 000 | 1 1/4" FUEL QTY IND. | EMPTY TO FULL (cap 5V) | B & W (2700) | 10-00566 | . |
| T18 1125 2C10 000 | 1 1/4" FUEL QTY IND. | EMPTY TO FULL (cap 5V) | B & W (1800) | 10-00567 | . |
| T18 112F 1F10 000 | 1 1/4" FUEL QTY IND. | EMPTY TO FULL (float 240-30 ohms) | B & W (2700) | 10-00568 | . |
| T18 112F 1F20 000 | 1 1/4" FUEL QTY IND. | EMPTY TO FULL (float 0-30 ohms) | B & W (2700) | 10-00569 | . |
| T18 112F 1F30 000 | 1 1/4" FUEL QTY IND. | EMPTY TO FULL (float 0-90 ohms) | B & W (2700) | 10-00570 | . |
| T18 112F 1F40 000 | 1 1/4" FUEL QTY IND. | EMPTY TO FULL (float 78-6 ohms) | B & W (2700) | 10-00571 | . |
| T18 112F 1F50 000 | 1 1/4" FUEL QTY IND. | EMPTY TO FULL (float 10-180 ohms) | B & W (2700) | 10-00572 | . |
| T18 112F 2F10 000 | 1 1/4" FUEL QTY IND. | EMPTY TO FULL (float 240-30 ohms) | B & W (1800) | 10-00573 | . |
| T18 112F 2F20 000 | 1 1/4" FUEL QTY IND. | EMPTY TO FULL (float 0-30 ohms) | B & W (1800) | 10-00574 | . |
| T18 112F 2F30 000 | 1 1/4" FUEL QTY IND. | EMPTY TO FULL (float 0-90 ohms) | B & W (1800) | 10-00575 | . |
| T18 112F 2F40 000 | 1 1/4" FUEL QTY IND. | EMPTY TO FULL (float 78-6 ohms) | B & W (1800) | 10-00576 | . |
| T18 112F 2F50 000 | 1 1/4" FUEL QTY IND. | EMPTY TO FULL (float 10-180 ohms) | B & W (1800) | 10-00577 | . |
| 15 11S0 P30A 000 | 1 1/4" AMMETER (2700) (w/shunt) | -30 to 30 A | B & W | 10-00041 | . |
| 15 11S0 P60A 000 | 1 1/4" AMMETER (2700) (w/shunt) | -60 to 60 A | B & W | 10-00581 | . |
| 15 11S0 P80A 000 | 1 1/4" AMMETER (2700) (w/shunt) | -80 to 80 A | B & W | 10-00582 | . |
| 15 11S0 P1CA 000 | 1 1/4" AMMETER (2700) (w/shunt) | -100 to 100A | B & W | 10-00583 | . |

Senders sold separately, optional internal lighting available, Range Markings available at additional cost.

IN

KELLY MANUFACTURING CO. INSTRUMENTS



KELLY MANUFACTURING CO. AMMETERS

12-1100 Ammeters - This ammeter is similar to 12-1200 series except that zero amps are positioned at the left of the scale. To be used with 50 MV shunt. Dimensions: 2-3/8 x 2-3/8 x 2. Weight: .4 lbs approx. Voltage: 14 or 28 VDC

12-1200 Ammeters - Moving coil type, designed for aircraft use. Requires 50 MV shunt (12-902 series). Dimensions: 2-3/8 x 2-3/8 x 2 Weight: .4 lbs approx. Voltage: 14 or 28 VDC

| Model No. | Range (Amps) | Part No. | Price |
|-----------|---------------|----------|-------|
| 12-1100-1 | 0 to 30 amps | 10-02555 | . |
| 12-1100-2 | 0 to 60 amps | 10-02556 | . |
| 12-1100-3 | 0 to 80 amps | 10-02557 | . |
| 12-1100-4 | 0 to 120 amps | 10-02558 | . |
| 12-1100-5 | 0 to 150 amps | 10-02559 | . |



KELLY MANUFACTURING CO. VOLTMETERS

| Model No. | Range (Amps) | Part No. | Price |
|-----------|--------------|----------|-------|
| 12-5000-1 | 0 to 16 VDC | 10-02567 | . |
| 12-5000-2 | 0 to 30 VDC | 10-02568 | . |
| 12-5000-3 | 0 to 60 VDC | 10-02569 | . |
| 12-5000-4 | 0 to 100 VDC | 10-02570 | . |
| 12-5000-5 | 0 to 200 VDC | 10-02571 | . |



KELLY MANUFACTURING CO. SHUNTS

For use with ammeters and voltmeters with a 50 MV rating. Dimensions: 2 x 1-1/4 x 1-5/8 Weight: .5 lbs approx.

| Description | Model No. | Part No. | Price |
|------------------|-----------|----------|-------|
| Shunt - 30 amps | 12-902-1 | 10-02574 | . |
| Shunt - 50 amps | 12-902-2 | 10-02575 | . |
| Shunt - 55 amps | 12-902-8 | 10-02576 | . |
| Shunt - 60 amps | 12-902-3 | 10-02577 | . |
| Shunt - 75 amps | 12-902-4 | 10-02578 | . |
| Shunt - 80 amps | 12-902-6 | 10-02579 | . |
| Shunt - 100 amps | 12-902-11 | 10-02580 | . |
| Shunt - 120 amps | 12-902-9 | 10-02581 | . |
| Shunt - 125 amps | 12-902-5 | 10-02582 | . |
| Shunt - 150 amps | 12-902-10 | 10-02583 | . |



KELLY MANUFACTURING CO. LOW VOLTAGE WARNING SYSTEMS

An amber light will come on at the moment of low voltage condition which will inform the pilot of attention needed to the alternator, generator, or voltage regulator. Any of these conditions allowed to continue will result in a weak or completely discharged battery condition and loss of radio and electrical equipment. Indicator light features a built in dimmer and press to test with amber lens. Lights will trigger at 13 volts for 14V systems and 25 volts for 28V system. Accuracy, plus or minus 0.2 volts. Size: 1/2" Dia. 3" Depth required behind panel. Weight: .2 lbs., Power: less than 1/10 amp. Fuse supplied with kit.

| Model No. | Description | Part No. | Price |
|-----------|---|----------|-------|
| 33-2013A | 14 Volt, Red Lens Lo Voltage Warning System | 10-02572 | . |
| 33-2013 | 14 Volt, Amber Lens with Dimmer Lo Voltage Warning System | 33-2013 | . |
| 33-2025A | 28 Volt, Red Lens Lo Voltage Warning System | 10-02573 | . |
| 33-2025 | 28 Volt, Amber Lens with Dimmer Lo Voltage Warning System | 33-2025 | . |

KELLY MANUFACTURING CO. TACHOMETERS



RCA40A-6

RCA40A-6 - 2" Prop Tachometer, Green Arc from 0 RPM to Red Line at 1700 RPM



RCA40AB-07

RCA40AB-07 - 2" Prop Tachometer, Lighted, Green Arc from 1400 RPM to Red Line at 1700 RPM.



RCA41A-07

RCA41A-07 - 2" Percent Tachometer, Type MU-1 (MIL 25623A)

Many years of experience were drawn upon in the design and development of these tachometers. Only the best time tested and field proven features were used. These instruments use a three phase alternating current synchronous motor powered by a remote tach generator. The simplicity of design results in a twofold gain: increased reliability and ease of overhaul. Dimensions: 2" diameter x 5". Weight: .7 lbs. Power: Tach Generator, MIL-G-9398. Connector: MS3106A-14S-5S

| Description | Model No. | Part No. | Price |
|---------------------------|------------|----------|-------|
| 2" Prop Tachometer | RCA40A-06 | 10-02616 | . |
| 2" Prop Tachometer | RCA40A-07 | 10-02617 | . |
| 2" Prop Tachometer | RCA40A-09 | 10-02618 | . |
| 2" Prop Tachometer | RCA40A-10 | 10-03431 | . |
| 2" Prop Tachometer Lit | RCA40AB-06 | 10-02619 | . |
| 2" Prop Tachometer Lit | RCA40AB-07 | 10-02621 | . |
| 2" Prop Tachometer Lit | RCA40AB-09 | 10-02622 | . |
| 2" Percent Tachometer | RCA41A-06 | 10-02623 | . |
| 2" Percent Tachometer | RCA41A-07 | 10-02589 | . |
| 2" Percent Tachometer | RCA41A-08 | 10-03433 | . |
| 2" Percent Tachometer | RCA41A-09 | 10-02588 | . |
| 2" Percent Tachometer Lit | RCA41AB-06 | 10-02624 | . |
| 2" Percent Tachometer Lit | RCA41AB-07 | 10-02626 | . |
| 2" Percent Tachometer Lit | RCA41AB-09 | 10-02627 | . |

HOUR METERS – ENGINE GAUGES

HOBBES HOUR METERS



The Quartz + series of hour meters provide performance and reliability. Features include a highly reliable drive mechanism and odometer gear train combined with the accuracy of quartz crystal timing. Accurate to +/- 0.02% from -40° to 185°F. Total digital quartz readout is 9999.9 hours. Easy-to-read white numerals on black face dials. Sealed against dirt and moisture. Meets requirements of spec. MIL-L-3971B. Power: 10 – 32 V DC. Models 85094, 85001 and 85011 read "Total Hours". Model 85012 reads "Flight Hours".

- Hobbs Hour Meter 85094 + P/N 15000
- Hobbs Hour Meter 85001 + P/N 15001
- Hobbs Hour Meter 85011 + P/N 15006
- Hobbs Hour Meter 85012 + P/N 15007



PRESSURE SWITCH FOR HOBBS HOUR METERS Normally open. Closes at 4 PSI. Single circuit with 2 insulated terminals. Switch has silver contacts enclosed in weatherproof case. 1/8" male pipe thread connection.

- Water Compatible Pressure Switch for Rotax engines. P/N 10-00813
- P/N 10-00326



TEE CONNECTOR - For pressure switches with 1/8" male pipe threads. For 1/4" O.D. oil pressure lines. P/N 10-13300

DATCON HOUR METERS



871
3-Hole Flange
Mounting 2.54" Bolt
Circle 1.45" Dia. Holes

873
Mounts in
Standard 2-1/4"
Instr. Hole

876
Bracket Mount in
2-1/32" - 2-1/8"
Panel Hole

Standard equipment in most production aircraft. Operate on any DC voltage from 4-40V. These solid-state hour meters are recommended for use on aircraft because they start or stop instantly when power is applied or removed. Furnished with mounting hardware. If meter is connected improperly it will not operate but meter will not be damaged. The running indicator indexes every 6 seconds.

- Model 87112/24V P/N 56456-3
- Model 87312/24V P/N 56457-3
- Model 876 12V P/N 56458-4

TINY TACH TACHOMETER/HOUR METERS



Tiny-Tach is an affordable, accurate, self-contained tachometer/hour meter. Displays RPM while the engine is running and total engine time when the engine is off. The unit is waterproof, shock resistant, and has a built-in battery that lasts up to 8 years. Tiny Tach can be mounted easily using 2 mounting tabs or double sided tape.

Model 2C is used when there is one spark plug firing on each revolution of the crankshaft. P/N 10-24420

Model 4C is is for engines which have a spark every two revolutions of the crankshaft such as those with a distributor driven crankshaft. P/N 10-24430

Model 1C is for twin cylinder engines with a spark firing every 180 degrees of the engine crankshaft.....P/N 10-24440



FALCON VOLT METERS

Falcon Gauge Volt Meters are 6-16V and are available in 2-1/4" and 2" Round.

| SIZE | VOLTAGE | PART NO. | PRICE |
|--------------|---------|----------|-------|
| 2 1/4" | 6-16V | 10-02271 | . |
| 2 1/4" ROUND | 6-16V | 10-02272 | . |

FALCON AMP-METERS



| Model | Part No. | Price | Model | Part No. | Price |
|-----------|----------|-------|------------------------------|-----------------|-------|
| A2-001 | 10-03408 | | AV60-002 | 10-03414 | |
| A2-001R | 10-03409 | | AV60-001R | 10-03415 | |
| A30-001 | 10-03410 | | Falcon Shunt Amp/Volt | | |
| A30-001R | 10-03411 | | Model | Part No. | |
| AV30-002 | 10-03412 | | SHT-030 | 10-03416 | |
| AV30-001R | 10-03413 | | SHT-060 | 10-03417 | |

ENM VIBRATION ACTIVATED HOUR METERS



Features 6-digits with an hour glass as a running indicator - operates only when engine is vibrating. Install anywhere with no wired connection or power source to operate. Internal battery supplies all the necessary power for the gauge to operate for years of service. Total operating hours are always shown on the LCD display. Compact tamper-proof meter is sealed against the environment to provide years of service.

- ENM Hourmeter Vibration P/N ENMV
- ENM Hourmeter DC Power P/N ENMDC
- ENM Hourmeter AC Power P/N ENMAC

UNIVERSAL DIGITAL TACH/HOURMETER



Now both a digital tachometer and an hourmeter in the same low cost and small size package! No power required yet there is a large 7 segment LCD display. Solid state electronics with quartz crystal technology make this instrument highly reliable. Easy to install - just wrap the attached wire around your spark plug cable. The case is completely sealed, it operates in a wide temperature range and the service interval is programmable..... P/N TLPT14



CURTIS HOURMETER

All solid state. Mount from front or back of panel in 1 3/8" by 7/8" hole. Requires 12 VDC.

- P/N CUR701

VOLTMETERS



These new manufacture voltmeters offer accuracy, rugged construction, and contemporary styling. Made in USA. 2 1/4" Range:

- 9-16V P/N 10-14620
- 20-32V P/N 10-02064

AMMETERS



These new manufactured ammeters offer accuracy, rugged construction, and contemporary styling. Made in U. S. A. Furnished with shunt.

- Range: 0-30 (0 center)..... P/N 10-14650
- 0-60 (0 center)..... P/N 10-14655
- 0-80 (0 center)..... P/N 10-14660

KOBRA TACH/HOUR METER



This tiny and portable RPM meter and hour meter unit is chip controlled, fully programmable, and is suitable for both two and four stroke engines: one product fits all engines. It keeps in memory the max RPM and the time the engine has been running: both values are resettable. Its two small batteries last for years before needing to be replaced. A strong velcro for fixing is included. Features: * Velcro set for attaching the RPM-H * 2m cable * Batteries Included * One product fits all engines in the market thanks to programmable chip * Battery can be replaced, virtually is a life long product * it registers max RPM of the life of the engine, which are resettable. P/N 10-03573.....

ONE TOUCH DIGITAL TACH CHECK



This digital LCD tachometer reads 2, 3, or 4 blade props very accurately. Very easy to use and features auto-shutoff and 10 RPM readout. P/N 10-00749

DIGITAL FLAP INDICATOR



Early-model Cessnas originally utilize older-style, wire-wound transmitters. These transmitters are located in the wing, where they are exposed to humidity and extreme temperatures. After many years in such harsh environments, these transmitters become worn and corroded, causing them to fail or become intermittent.

Owners have been plagued with high maintenance costs, difficulties obtaining replacement parts, as there are compatibility issues the various transmitters and the gauges. The Visual Instruments Flap Indicator system provides a means for owners of these older aircraft to upgrade their troublesome indicators to a modern, more reliable design. The system includes a new transmitter, a modern digital display, and all parts necessary to perform the upgrade. The new display incorporates a color LED bar graph. The appearance is similar to flap indications shown on modern glass cockpits. Positions of more than 10° flap are indicated in a different color. This allows for easy identification during an emergency procedure such as a balked landing (go-around). The LEDs are very viewable from a wide angle. This is particularly useful since the indicator on many Cessna models is located on the right side of the panel. The display automatically adjusts to the ambient light for IFR or night operation. The Flap Indicator system includes all necessary parts and typically takes a mechanic approximately 2 hours to install. 5 year factory warranty. STCd for installation on early model Cessna 172s, 182s, 205s, 206s, & 210s. P/N 10-00240

INSTRUMENTS

INSTRUMENT MOUNTING PODS



An economical, high-quality, easy-to-install solution to your instrument mounting problems. Made of vacuum-molded white and black ABS plastic with attractive black matte ABS faces. The white pod may be easily spray-painted with acrylic enamel to match your aircraft. Two-piece mounting brackets fit snugly around 1" tubing, secured with screws provided. Available for 2, 3, 4 or 5 instruments with the face precut and mounting holes drilled for either 2-1/4" or 2" instruments. Blank face plates also available. May be used horizontal or vertically. When you order, specify either 2-1/4" or 2" instruments holes or blank face plate. Instruments not included.

| P/N | Instr 2-1/4" Hole | Color | Price | P/N | Instr. 2" Hole | Color | Price |
|----------|-------------------|-------|-------|----------|----------------|-------|-------|
| 10-01513 | 2 | White | . | 10-01538 | 2 | Black | . |
| 10-01517 | 3 | White | . | 10-01539 | 3 | Black | . |
| 10-01521 | 4 | White | . | 10-01540 | 4 | Black | . |
| 10-01525 | 5 | White | . | 10-01541 | 5 | Black | . |
| 10-01529 | 2 | Black | . | | Blank | | |
| 10-01530 | 3 | Black | . | 10-01542 | 2 | White | . |
| 10-01531 | 4 | Black | . | 10-01543 | 3 | White | . |
| 10-01533 | 5 | Black | . | 10-01544 | 4 | White | . |
| | 2" Hole | | | 10-01545 | 5 | White | . |
| 10-01534 | 2 | White | . | 10-01546 | 2 | Black | . |
| 10-01535 | 3 | White | . | 10-01547 | 3 | Black | . |
| 10-01536 | 4 | White | . | 10-01548 | 4 | Black | . |
| 10-01537 | 5 | White | . | 10-01549 | 5 | Black | . |

SHOCK MOUNTS

For vibration and shock proofing on instruments and radios.

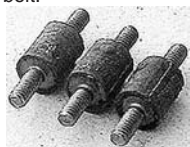


10-02183 - 1" Square Plate Type Lord Mounts, 6 lb. rating. Monel mounting plate. Base holes .141" dia. for 6-32 screws. Center hole .166" dia. for 8-32 screw. New surplus item - like new mfg.

P/N 10-02183

200P-35 - 2" Square Plate Type Lord Mounts, 35 lb. rating. Steel mounting plate. Base holes .196" dia. for 10-32 screw. Center hole .391" dia. for AN6 bolt.

P/N 10-00034



ROUND MOUNT - As used in Cessna aircraft. Overall length 1.25". Rubber molded on 8-32 threaded projections. New manufacture. Similar to Cessna P/N J6984-8. P/N 10-14700

LORD J-14290-4 INSTRUMENT SHOCK MOUNT -

5 lb rating • Metal mounting plate • .144 dia. base hole (screw size: #6) • .195 dia. center hole (screw size #10) • Aircraft: Cessna 182, 182A-182N

P/N 08-00381



RTC-2 AVIATION REAL TIME CLOCK & OAT DISPLAY

The RTC-2 is a 2.25" aviation Real Time Clock featuring a two time zone system, stopwatch, countdown timer, alarm and OAT (Outside Air Temperature) display. It is primarily intended to show UTC time (also known as Greenwich Mean Time, GMT or Zulu time) together with a local time to facilitate ordinary ATC time reporting.

P/N 11-06443



SCOTT TYPE FREE AIR THERMOMETER

Mounts through 3/8" dia. hole in windshield or cowl. Convenient scale reads in both Centigrade and Fahrenheit. Stem length is 4". Face diameter 2-1/8". Sunproof crystal.

P/N 10-15500



KELLY MANUFACTURING CO. OUTSIDE AIR TEMPERATURE GAUGE

This quality manufacture outside air temperature gauge features a moving coil meter movement housed in a 2" diameter case. Operated by MS28034-2 type resistance bulb. Size: 2-3/8" x 2-3/8" x 2-1/4". Wt. 1 lb. Power: 14 or 28 VDC. Range -45°C/-50 to 120°C.

P/N 29-3003-14

P/N 29-3003-28

Connector:P/N 11-02023



KELLY MANUFACTURING CO. CABIN AIR TEMPERATURE GAUGE

This quality new manufacture cabin air temperature gauge features a moving coil meter movement housed in a 2 inch diameter case. Operated by MS28034-2 type resistance bulb. Size: 2-3/8" x 2-3/8" x 2-1/4". Wt. 1 lb. Power: 14 or 28 VDC.

14V 29-400029-4000-14

28V 29-400010-03146

MS28034-2 Resistance Bulb.....MS28034-2

KELLY MANUFACTURING 3 INCH ENGINE GAUGES 18-1000 & 18-1002 SERIES



P/N 10-03435

Consists of three independent gages contained within a standard 3" diameter case. Oil temperature and cylinder head temperature gages are moving coil meter movement operated by MS28034-1 and AN5546-1 resistance bulbs respectively. Connection for the temperature gage is by cannon type connector: P/N MS3106A-14S-2S. FAA TSO Approved C47.

| Model No. / Part No. | Description | Price |
|----------------------|--|-------|
| 18-1000-1 | 28 VDC Oil Temp. 50°-250°F, Oil Press. 0-200 PSI, Cylinder head temperature 100 to 500°F | . |
| P/N 10-03435 | | |
| 18-1000-2 | 28 VDC Oil Temp. 20° to 120°F, Oil Press. 0 to 200 PSI, Cylinder head temp. 50 to 250°F | . |
| P/N 10-03436 | | |
| 18-1000-3 | 14 VDC Oil Temp 50°-250°F, Oil Press. 0-200 PSI, Cylinder head temp. 100-500°F | . |
| P/N 10-03437 | | |
| 18-1000-4 | 14VDC Oil Temp 20° to 120°F, Oil Press 0 - 200 PSI, Cylinder head temp. 50 to 250°F | . |
| P/N 10-03438 | | |



P/N 10-03439

18-1002 SERIES - This gage consists of three moving coil meter movements within a 3" diameter case. Oil temperature is sensed by an MS28034-1 resistance bulb and cyl-inder head temperature is sensed by an AN5546-1 resistance bulb. Oil pre-sure is sensed by a VDO Transducer. Connection is made by a single cannon type connector: Part Number MS3106A-14S-6S.

| Model No. / Part No. | Description | Price |
|----------------------|---|-------|
| 18-1002-1 | Oil Temp 50° - 250°F, Oil Press. 0 - 120psi, Cylinder temp. 0 - 500°F | . |
| P/N 10-03439 | | |
| 18-1002-5 | Oil Temp 50° - 250°F, Green Arc 100° - 200°F, Red line at 249°F, Oil Press. 0 - 120psi, Red line 10psi & 100psi, Yellow Arc 10psi - 30psi, Green Arc 30psi - 60psi, Yellow arc 60psi - 100psi, Cylinder Temp 0° - 500°F, Green Arc 220° - 420°F, Red Line 460°F | . |
| P/N 10-03440 | | |

ACCESSORIES FOR 18-1000 & 18-1002 SERIES

| Part No. | Description | Price |
|----------|----------------------------|-------|
| 10-00953 | Resistance bulb MS28034-1 | . |
| AN5546-1 | 86146 CHT Probe Thermistor | . |
| 10-00790 | MS3106A-14S-2S Cannon Plug | . |



DIGITAL OUTSIDE AIR TEMPERATURE GAUGE

This high quality digital outside air temp. gauge gives constant and precise readings on a bright, easy-to-read digital presentation. Comes complete with probe and ready to install. Made in USA

CelsiusP/N 10-00205

FahrenheitP/N 10-00206



HYDRAULIC PRESSURE GAUGE

AN5771-4A Military style gauge with steel case. Mounts in 2-1/4" dia. panel opening. Range: 0-2000 PSI. Overhauled and Certified. With fresh Matte-white dial.

P/N AN5771-4A

CLOCKS – TIMERS



ASTROTECH QUARTZ CHRONOMETERS

A fine quality instrument to satisfy all cockpit clock/timer needs. 12 or 24 hour clock, 24 hour elapsed timer with time-out or hold feature, month and date. Will operate on internal battery for 2 years or can be connected to electrical system. 12 or 28V DC operation.

| Part no. | Model | Description | Price |
|----------|---------|-------------------------------------|-------|
| 10-15508 | LC-2 | Panel Mount Aircraft Powered 14/28V | . |
| 10-15515 | LC-2 | Aircraft Powered Panel Clock 28V | . |
| 10-15512 | LC-2A-5 | King Air, 28 volts | . |
| 10-15513 | LC-2A-6 | Beechcraft 28V Clock | . |
| 10-15514 | LC-2E | Embarcaer 5V CLOCK | . |
| 10-15507 | LC-2P | Central Wheel 14V A/C Powered | . |

NOTE: For Aircraft Application Information on Astrotech Chronometers visit www.aircraftspruce.com



LC-6 LIQUID CRYSTAL CHRONOMETER

The LC-6 is a 5-function, liquid crystal display, aircraft quartz chronometer. All functions contained in a single Large Scale Integrated Circuit (LSI) bonded directly to a printed circuit board. Features 6-digit local time or GMT stopwatch, 100-hour remote-activation timer, presettable down-counter. Unit mounts into standard 2.25" panel cutout, back-lit, may be wired into aircraft instrument panel lighting system (14 or 28V). P/N 10-15503.....



YOKE MOUNT FLIGHT CLOCK

Battery-operated quartz aircraft clock reads out 12 or 24 hour formats in bright digital display, and has stopwatch & alarm features. Includes yoke attachment for mounting directly in front of the pilot, and the yoke clip holds charts, approach plates, etc. Uses one watch battery (included). 1yr warranty. A great clock & approach timer.

Flight Clock (for Piper).....P/N 13-31200.....
Flight Clock (for Cessna & all others).....P/N 13-31210.....



AVIATOR'S 5-IN-1 FLIGHT TIMER

5 timers in one package! A combination of 12/24 hour digital chronometer, plus stopwatch, plus 3 countdown timers is about as close to timed maneuver perfection as a pilot can get. Large LCD digital readouts and large push-buttons make reading and operating easy. Memory stores

each waypoint, tank change or approach count-down preset. When time is up, timer element flashes and counts up. The Flight Timer Amplifier is very compact and includes a speaker volume control & external output jack for audio annunciation.

5-in-1 w/ piezo alarm (No LED).....P/N 13-01833.....
5-in-1 w/ red LED.....P/N 13-00095.....
5-in-1 w/ red LED & audio alarm.....P/N 13-00391.....
Flight Timer Amplifier.....P/N 13-01941.....



ELECTRONIC STOPWATCH/TIMER

This easy-to-use stopwatch counts up to 60 minutes, then recycles automatically. As a timer, it counts down from 100 minutes in minutes and seconds. Features loud tone when timing period is complete, a large LCD digital display, and soft-touch buttons which are easy to set. Stands or hangs for convenience. 1.5V battery included. By Westbend. P/N 13-31380.....

ASA FLIGHT TIMER

Ergonomically designed and engineered for reliability, ease and convenience, the ASA Flight Timer should be considered essential equipment for all aviators. Features: Large LCD backlit display, multi-function clock and three simultaneous timer options. Exclusive digital notepad for squawk codes or frequencies, stores up to 12 approach times, audible and visual alarms. P/N 13-02357.....

NELSON FLIGHT CLOCK



- Stopwatch / Alarm • Quartz clock • Digital • Replaceable battery • Yoke clip holds Sectionals, Approach plates, etc. • 2 yoke sizes, Piper & Cessna • 12 or 24 hour time

Cessna.....P/N 13-31210.....
Piper.....P/N 13-31200.....

MODEL 100 STOPWATCH



The Bodytronics Model 100 stopwatch strikes a great balance between price and performance. You will not find a better quality stopwatch at this price!

P/N 13-02954.....

PRECISION QUARTZ AIRCRAFT CLOCKS



Designed for accuracy, these precision clocks are manufactured to meet rugged aircraft environmental standards. High-quality, solid state quartz movement and a variety of lighting options. Come with a factory one year limited warranty. FAA/PMA approved. Voltage: 10-32 VDC. Current: 2.3 milliamps @ 14V. Wt. 5 oz. Fits 2-1/4" panel hole.

Standard Electric Clock.....P/N 10-00459.....
Lighted Electric Clock (14V).....P/N 10-00460.....



SUPERCLOCK FROM ELECTRONICS INTERNATIONAL

Displays local and Zulu time. May be set to display in a 12 or 24-hr format. A 10-year lithium battery keeps the clock running even if the aircraft battery is removed. Displays an Up Timer. This Timer will start running when the engine is started. In this manner the Timer acts as an automatic Flight Timer. The Up Timer may be started, stopped or reset. A Recurring Alarm may be set to alert you at appropriate time intervals. Example: If the alarm is set for 30 minutes, you will get an alarm at 30 minutes, 60 minutes, 90 minutes, etc. This alarm can be used to remind you to check your fuel level or switch tanks at set time intervals. Displays a Down Timer. This Timer counts down from a programmed start time. The Down Timer may be started, stopped or reset. Warning lights above the LCD display will blink if the Up or the Down Timer times out. Displays an Engine Timer. This Timer acts as a Hobbs Meter. When the engine starts, the Engine Timer will run. The Engine Timer displays total engine time in hours, tenths and hundredths of an hour. Specifications: 2-1/4" mount. 3.65" Depth. 10 Oz. Unit. Viewable in direct sunlight. Backlit for night operation. Operates from 7.5 to 35 volts at .3 amps.

P/N 10-01612.....



SUPERCLOCK/ALTITUDE ALERT FROM ELECTRONICS INT'L.

Reads your Altitude Encoder and displays your current altitude as seen by ATC. Display indicates when your current altitude is above or below your Programmed Target Altitude. A "Level off Alarm" occurs as you approach your Programmed Target Altitude. A "Deviation Alarm" occurs if you deviate from your Target Altitude. A Programmed Approach Altitude may be set to alert you when you have reached MDA, DH, pattern altitude, wheels down altitude or any altitude for which you wish to set an alert. Displays Density Altitude based on your current OAT reading. Displays OAT. May be toggled between degrees F and degrees C. A Programmable Timer may be set as an "UP" or "Down" counting Timer. When set as an "UP" Timer, the Timer will start automatically when your current altitude reaches 300 feet above the ground. A Recurring Alarm may be set to alert you at appropriate time intervals. Example: If the alarm is set for 30 minutes, you will get an alarm at 30 minutes, 60 minutes, 90 minutes, etc. This alarm can be used to remind you to check your fuel level, engine instruments, course, etc., at set time intervals. Displays Local and Zulu Time. The Local Clock may be set to display in a 12 or 24-hr format. Meets FAA requirements for a clock. Specifications: 2-1/4" mount. 3.65" Depth. 10 Oz. Unit. Viewable in direct sunlight. Backlit for night operation. Operates from 7.5 to 35 volts at .3 amps.

P/N ASC-5.....

QUARTZ ELECTRIC AIRCRAFT CLOCKS



These clocks are constructed for easy installation in a wide variety of aircraft. The rugged quartz movement is accurate within 2 seconds in 24 hours under normal operations and runs accurately in temperatures from -30°-180°F. The clock kit includes a power harness, mounting screws and installation instructions. The clock features adjustable red elapsed time hands. **Not for certified aircraft.**

P/N 10-22812 (12V).....
P/N 10-22824 (24V).....

AEROSPACE LOGIC DT1-F CLOCK/OAT



The Aerospace Logic CT1 Now you can have everything in one place! The CT1 Clock and Outside Air Temperature instrument includes a feature-rich aircraft chronograph with constant viewable Outside Air Temperature - all in one 2 1/4" mount instrument. For experimental aircraft. Programmable Features - CT1 allows you to configure the instrument just the way you need it. All clock functions are available in both 12 and 24 hour format with instant indication of the current operating format. Local time is calculated as an offset from UTC. Just set your offset. Programmable to 23 hrs/30 min. either side of the date line.

Other features: • MultiFunction Flight Timer • Down Timer • Outside Air Temperature • Hi-Tech Temperature Sensor • TSO & STC Certificate pending (Oct 2005) • Dimensions: 2.45" X 2.45" X 1.6" • Weight: 8oz. • Power: 6V-40VDC P/N 10-01719.....

FALCON MULTI-FUNCTION DIGITAL CLOCK



Three clocks packed into one convenient, easy to use clock, providing the pilot with standard time, flight time and elapsed time. The bright red LCD display is easy to read day or night by adjusting brightness control. Regular time recorded in hours, minutes, and seconds. Four switches provide control and mode selection. Fits standard 2-1/4" instrument cutting hole. Includes Connector. P/N 10-00370.....
Replacement Connector.....P/N 11-04970.....

IN

DAVTRON INSTRUMENTS

DIGITAL CHRONOMETERS AND CLOCKS

MODEL 803



- UT, LT, FT, & ET
- FT & ET Visual Alarm
- External Output for Optional Audio Alarm(FT/ET)
- Aircraft Voltage
- OAT F & C (12Ft. Temperature Probe)
- Internal Lighting
- AA Memory Battery
- Input Voltage 11 to 28 Volts
- NVIS (NVG) Option Green A

| Description | Part No. | Price |
|---|-------------|-------|
| UT, LT, FT, & ET Digital Clock 5V Lighting, Voltmeter, OAT (F & C) | 10-03304 | . |
| UT, LT, FT, & ET Digital Clock 14V Lighting, Voltmeter, OAT (F & C) | 10-25520-14 | . |
| UT, LT, FT, & ET Digital Clock 28V Lighting, Voltmeter, OAT (F & C) | 10-25520-28 | . |
| 803-5V With Night Vision Lighting Green A | 10-03342 | . |
| 803-14V With Night Vision Lighting Green A | 10-03343 | . |
| 803-28V With Night Vision Lighting Green A | 10-03346 | . |

MODEL 800



M800B (YOKE VERSION)



- GMT, LT & ET
- ET Counter (UP/DOWN), Visual Alarm
- External Output for Optional Audio Alarm (ET)
- Internal Lighting
- AA Memory Battery (OPTIONAL)
- Input Voltage 11 to 28 Volts
- NVIS (NVG) Option Green A
- Available for Beechcraft yoke

| Description | Part No. | Price |
|---|-------------|-------|
| GMT, LT, & ET Digital Clock 5 Volt Lighting (800) | 10-03323 | . |
| 800-5V With Battery Holder (AA) | 10-03305 | . |
| 800-5V With Night Vision Lighting Green A | 10-03324 | . |
| 800-5V-NVG With Memory Battery Holder (AA) | 10-03325 | . |
| 800-5V-NVG With 24 HR LT | 10-03326 | . |
| 800-5V-NVG-24 With Memory Battery Holder (AA) | 10-03327 | . |
| 800-5V With 24 HR LT | 10-03328 | . |
| 800-5V-24 With Memory Battery Holder (AA) | 10-03329 | . |
| GMT, LT, & ET Digital Clock 14V Lighting (800) | 10-24535-14 | . |
| 800-14V With Memory Battery Holder (AA) | 10-02050 | . |
| 800-14V With Night Vision Lighting Green A | 10-03330 | . |
| 800-14V-NVG With Memory Battery Holder (AA) | 10-03331 | . |
| 800-14V-NVG With 24 HR LT | 10-03332 | . |
| 800-14V-NVG-24 With Memory Battery Holder (AA) | 10-03333 | . |
| 800-14V WITH 24 HR LT | 11-05876 | . |
| 800-14V-24 With Memory Battery Holder (AA) | 10-03334 | . |
| GMT, LT, & ET Digital Clock 28V Lighting(800) | 10-24535-28 | . |
| 800-28V With Memory Battery Holder (AA) | 10-02051 | . |
| 800-28V With Night Vision Lighting Green A | 10-03335 | . |
| 800-28V With Memory Battery Holder (AA) | 10-03336 | . |
| 800-28V-NVG with 24 HR LT | 10-03337 | . |
| 800-28V-NVG-24 With Memory Battery Holder | 10-03338 | . |
| 800-28V with 24 HR LT | 11-05877 | . |
| 800-28V-24 With Memory Battery Holder (AA) | 10-03339 | . |
| 800-28V For Beechcraft Yoke (Cream) | 10-03340 | . |
| 800-28V For Beechcraft Yoke (Black) | 10-02651 | . |
| 800-14V For Beechcraft Yoke (Cream) | 10-02906 | . |
| 800-14V For Beechcraft Yoke (Black) | 10-24535-14 | . |
| 800-5V For Beechcraft Yoke (Black) | 10-03341 | . |

DIGITAL CHRONOMETERS AND CLOCKS

MODEL 877 and 850 (877 REAR MOUNT, 850 FRONT MOUNT)



- GMT, LT, FT, & ET
- FT & ET Visual Alarm
- External Output for Optional Audio Alarm(FT/ET)
- Bright Sunlight Readable displays
- Illuminated Displays
- Model 850 N Size Memory Battery Optional
- Model 877 AA Memory Battery Optional
- Input Voltage 11 TO 28 Volts
- NVIS (NVG) Optional Green A

| Description | Part No. | Price |
|---|-------------|-------|
| GMT, LT, FT, & ET LED Clock 5V Lighting (850) | 10-03310 | . |
| 850-5V-With Gray Faceplate | 10-03311 | . |
| 850-5V With Night Vision Compatibility (Green A) | 10-03306 | . |
| 850A-5V-NVG With Gray Faceplate | 10-03347 | . |
| GMT, LT, FT, & ET LED Clock 14V Lighting (850) | 10-03312 | . |
| 850-14V With Gray Faceplate | 10-03348 | . |
| 850-14V With Night Vision Compatibility (Green A) | 10-03349 | . |
| 850A-14V-NVG With Gray Faceplate | 10-03350 | . |
| GMT, LT, FT, & ET LED Clock 28V Lighting (850) | 10-03313 | . |
| 850-28V With Gray Faceplate | 10-03314 | . |
| 850-28V With Night Vision Compatibility (Green A) | 10-03351 | . |
| 850A-28V-NVG With Gray Faceplate | 10-03352 | . |
| GMT, LT, FT, & ET LED Clock 5V Lighting (877) | 10-03308 | . |
| 877-5V With Gray Faceplate | 10-03309 | . |
| M877-5V With 24 HR LT | 10-03353 | . |
| 877-5V-24 With Gray Faceplate | 10-03354 | . |
| GMT, LT, FT, & ET LED Clock 14V Lighting (877) | 10-24545-14 | . |
| 877-14V With Gray Faceplate | 11-05879 | . |
| 877-14V With 24 HR LT | 11-05878 | . |
| 877A-14V-24 With Gray Faceplate | 10-03355 | . |
| GMT, LT, FT, & ET LED Clock 28V Lighting (877) | 10-24545-28 | . |
| 877-28V With Gray Faceplate | 11-05880 | . |
| 877-28V With 24 HR LT | 10-03356 | . |
| 877-28V-24 With Gray Faceplate | 10-03358 | . |

MODEL 811



- Six-digit Display on all 3 Functions.
- Time Function (12 OR 24HR)
- FT & ET
- Bright Sunlight Readable Displays
- Memory Battery Included
- Input Voltage 11 to 28 Volts
- NVIS (NVG) Option Green A

| Description | Part No. | Price |
|--|-------------|-------|
| LT 12 HR, FT, & ET LED Clock | 11-05872 | . |
| LT 12 HR, FT, & ET LED Clock w Gray face | 10-03345 | . |
| LT 24 HR, FT, & ET LED Clock | 10-24550-14 | . |
| LT 24 HR, FT, & ET LED Clock 811 With Gray Faceplate | 11-05873 | . |
| 811 With Night Vision | 10-03346 | . |

| Accessories / Replacement Parts | Part No. | Price |
|--|----------|-------|
| 811 Dropping Resistor | 11-04607 | . |
| 811 Memory Battery Pack | 10-24560 | . |
| 811 Inverting Cable | 11-04608 | . |
| 811B Female Connector (Standard Cable) | 11-04609 | . |
| KV-505FDigital Display for Model 811B | 11-04613 | . |

MODEL 903



- Automatic VOR position Orientation
- Localizer deviation and centerline
- Alphanumeric station identifier
- Digital filtering and signal processing
- Instant To/From switching
- Sunlight readable displays
- Automatic Display Dimming
- Serial ASCII output of station and radial OFF flag, "..."

| Description | Part No. | Price |
|-------------------------------------|------------|-------|
| 903-1 Rectangle mount, with LOC Bar | 10-03315 | . |
| 903-2 Round Mount, with LOC Bar | 10-24555-2 | . |
| 903-ID1 Rectangle mount, with Ident | 10-24560-1 | . |
| 903-ID-2 Round Mount with Ident | 10-24560-2 | . |

DAVTRON INSTRUMENTS

DENSITY & PRESSURE ALTITUDE MODEL 655



- OAT (F) & OAT (C)
- Pressure & Density Altitude With Pressure ALT. Alarm
- Aircraft Voltage with Flashing Alarm
- Bright Sunlight Readable Displays
- Input Voltage 11 TO 28 Volts.
- Complete with 12 FT. Digital Probe.

| Description | Part No. | Price |
|--|------------|-------|
| O.A.T. F&C/Vol/ Pres & Den ALT (Front Mount) | 10-24515-1 | . |
| O.A.T. F&C/Vol/ Pres & Den ALT (Rear Mount) | 10-24515-2 | . |

DIGITAL VOLTMETER OUTSIDE AIR TEMPERATURE MODEL 303



- OAT (F) & OAT (C)
- Aircraft Voltage with Flashing Alarm
- Bright Sunlight Readable Displays
- Input Voltage 11 TO 28 Volts.
- Complete with 12 FT. Digital Probe.

| Description | Part No. | Price |
|--------------------------------------|---------------|-------|
| O.A.T. F & C / Voltage (Front Mount) | 10-24565-14-1 | . |
| O.A.T. F & C / Voltage (Rear Mount) | 10-24565-14-2 | . |

DIGITAL VOLTMETER AMMETER MODEL 475VA/475VAA



M475VA

- Low current drain .001 amp
- Plus 100.0 volt D.C. range
- 1.3" case depth
- Sunlight readable
- One tenth volt resolution



M475VAA

- Plus or minus 150.0 amp range
- 2 1/4 Standard mount
- 14 or 28 volt back lighting
- One tenth amp resolution

The M475VAA has dual shunts and can read voltage and two current flows (M475VA has a single shunt). The 475VA and the 475VAA were designed for low current drain and are also used in standby and emergency battery packs. One example of safety is if the alternator fails, you can monitor the load current out of the battery.

| Description | Part No. | Price |
|--|----------|-------|
| Volt/Amm Meter 14V Lighting (Single Shunt) | 10-03319 | . |
| Volt/Amm Meter 28V Lighting (Single Shunt) | 10-03320 | . |
| Volt/Amm Meter 14V Lighting (Double Shunt) | 10-03321 | . |
| Volt/Amm Meter 28V Lighting (Double Shunt) | 10-03322 | . |

TACHOMETER RIGHT ANGLE DRIVE



Attach this 90° adapter to male thread on the recording tachometer & female end of the tach cable. Makes installation possible in "impossible" places. May also be used as a reversing drive by removing plug and replacing it with threaded fitting opposite it.

Screw plug in opening left by fitting removed. 1:1 Ratio.

P/N 10-00815.....

ENGINE RIGHT ANGLE DRIVE



Female end attaches to engine tach drive outlet. Male output end accepts standard tach cable female nut (7/8-18 thread). Eliminates bending of tach cable at the engine in cramped installations. Designed for heavy-duty service.

Gears and shafts are of heat-treated alloy steel. Oil impregnated sintered bronze shaft bearings. Cast iron case and fittings. With lubricator fitting for greasing. 1:1 ratio.

P/N 10-00814.....

DUAL TACHOMETER DRIVE



Adapter screws to the male thread on the back of the tachometer. The two tachometer cables screw onto the opposite sides of the dual adapter. 1:1 Ratio.

P/N 10-01445.....

TACHOMETER CAP



This Tach Cap can be used to close off the tachometer drive of a Lycoming engine when an electronic tach drive is being used off the magneto or electronic ignition. 7/8" thread and Viton (R) O-ring to seal.

P/N 10-06754.....ea

DIGITAL OUTSIDE AIR TEMPERATURE

MODEL 301



- OAT (F)
- OAT (C)
- Bright Sunlight Readable Displays
- Input Voltage 11 TO 28 Volts.
- Complete with 12 FT. Digital Probe.

| Description | Price | Price |
|-------------------------------------|----------|-------|
| O.A.T. Celsius (301 C) | 10-08312 | . |
| 301C With 3 Pin Connector for Probe | 10-03316 | . |
| O.A.T. Fahrenheit (301 F) | 10-08512 | . |
| 301F With 3 Pin Connector for Probe | 10-03317 | . |

MODEL 307



M307FC



M307CD



M307FCI

- OAT (F) & OAT (C)
- Bright Sunlight Readable Displays
- Input Voltage 11 TO 28 Volts.
- Complete with 12 FT. Digital Probe.

| Description | Part No. | Price |
|--|----------|-------|
| Celsius Differential Intercooler (307 CD) | 10-03318 | . |
| O.A.T. F & C (307 FC) | 10-08513 | . |
| O.A.T. F & C Cabin Air (307 FCI) | 11-05881 | . |
| Fahrenheit Differential Intercooler (307 FD) | 11-05882 | . |

MODEL 450 and 451



- Aircraft Voltage with Flashing Alarm
- Bright Sunlight Readable Displays
- Input Voltage 11 TO 28 Volts.
- Aircraft Voltage (451)
- Bright Sunlight Readable Displays
- Minimum panel Space
- Input Voltage 11 TO 28 Volts.

| Description | Part No. | Price |
|-----------------|----------|-------|
| Voltmeter (450) | 10-24505 | . |
| Voltmeter (451) | 10-02819 | . |

ACCESSORIES / REPLACEMENT PARTS

| Description | Part No. | Price |
|--|----------|-------|
| KW-105G Display for Model 303, 307, 655, 880, & 903 | 11-04611 | . |
| KW-115G Display for Model 303, 655, 850, 877, & 880 | 11-04612 | . |
| KW-505F Digital Display for model 811B | 11-04613 | . |
| M800 Alarm Sona Alert | 11-04610 | . |
| 301 Probe 25 FT (Analog) | 11-04599 | . |
| Temperature Probe for 307CD/307FD (ANALOG) | 11-04602 | . |
| Temperature Probe 12ft. For 301/303/305-3/307/655 (Analog) | 11-04598 | . |

TACHOMETER CABLES



Custom made cables to exact specifications. Over-length cables can cause problems - order one that fits the installation. Select the proper length from the listing below, but measure old tach cable to verify length in chart is correct for your aircraft, as tach cables can vary from aircraft to aircraft. Measure original cable from end of Ferrule to end of Ferrule when fully extended. **Left lay is standard on all stock tach cables.** Tach Cables have male ends only. 7/8-18 on one end and 5/8-18 on the other. No female ends. When ordering special length tach cables specify aircraft, engine make, model & dash number.

Tach Cable Ass'y - Lengths to 4ft (Add \$2.50/Ft. for Longer Lengths)
4 foot length

Inner Cable Only - Length is 4ft (Add \$0.90/Ft. for Longer Lengths)
P/N 10-22400

TACH CABLE LENGTH

| Aircraft | Part No. | Length | Aircraft | Part No. | Length |
|-------------------|----------|---------|---------------|----------|--------|
| Various | 10-02675 | 22" | Mooney | 10-16200 | 36" |
| Aeronca Chief | 10-15700 | 29-1/2" | Mooney | 10-00012 | 46" |
| Aeronca Champ | 10-15700 | 29-1/2" | Navion | 10-16400 | 42" |
| Bellanca Cruisair | 10-15800 | 26" | Piper J3, J5 | 10-16500 | 34" |
| Cessna 120, 140 | 10-15900 | 29" | Piper PA-22 | 10-16600 | 32" |
| Cessna 175 | 10-16000 | 25" | Stinson | 10-16700 | 35" |
| Cessna | 10-16100 | 37" | Taylorcraft | 10-16400 | 42" |
| 170, 172, 180 | | | Thorpe T-18 | 10-16800 | 38" |
| Ercoupe | 10-16200 | 36" | Universal Use | 10-16900 | 48" |
| Luscombe | 10-16300 | 24" | Various | 10-16910 | 52" |

TACHOMETERS

MITCHELL MECHANICAL TACHOMETERS



3-1/8" Tach

In 1985 AC discontinued production of the popular "RT" series of mechanical tachometers. We now offer Mitchell tachometers to fill this void. These tachs feature exceptional accuracy and reliability. Mitchell tachs come with a 2-year factory warranty. Range on all models is 500 - 3500 RPM. Determine the correct part number for your application from the chart below, and order by our part no. from the charts shown here. All Mitchell tachs are FAA approved for certificated aircraft. \$30.00 for custom range marks (specify ranges). \$12.50 to set hours (specify hours)

| Mitchell P/N | Our P/N | Price |
|--------------|----------|-------|
| D1-112-5023 | 10-24623 | . |
| D1-112-5122 | 10-24622 | . |
| D1-112-5030 | 10-24630 | . |
| D1-112-5124 | 10-24624 | . |

| Mitchell P/N | Our P/N | Price |
|--------------|----------|-------|
| D1-112-5025 | 10-24625 | . |
| D1-112-5032 | 10-24632 | . |
| D1-112-5028 | 10-24628 | . |

| Mitchell P/N | Our P/N | Price |
|--------------|----------|-------|
| D1-112-5034 | 10-24634 | . |
| D1-112-5029 | 10-24629 | . |
| D1-112-5024 | 10-24644 | . |



2-1/4" Tach

2566 Cruise RPM Clockwise..... P/N 98480-2..... 2-1/4" TACH (98480-2).....
 2300 Cruise RPM Clockwise..... P/N 10-02046..... 2 1/4" TACH.....

| IFR P/N | Mitchell P/N | Stewart Warner No. | AC Type | Direction of Rotation | Average Cruise RPM | APPLICATION (REPLACEMENT FOR ORIGINAL EQUIPMENT INSTALLATIONS) |
|----------|--------------|--------------------|---------|-----------------------|--------------------|---|
| 55-35-7 | D1-112-5023 | P-551-AZ | RT-7 | Clockwise | 2300 | Aero Commander: A9, A9A, A9B Aeronca: 15AC Sedan Alon: F1, F1A, A-2, A-4 & 415C. D, E, F, G (Including Ercoupe and Forney) Grumman/American: AA-1, AA1A, AA-5 Beech: C35, D35, E35, F35 Bellanca/Champion: 7EC, 7FC, 7GC, 7HC, 7GCB, 7K, 7ECA, 7GCAA, 7GCBC, KCAB, 8KCAB, 260, 14-19, Viking 300, TurboViking Call: A2, A3, A4, A5, A9 Cessna: 120, 140, 170, 180, 182, 185 (with IO-470 eng.) 188, 336, 337 Culver: Cadet Lake Aircraft: C-1, C-2, L-4, LA-4SC, LA5 Mooney: Mark 20, 20A, 20D, 21, 200, 201, 202, 220 Piper: PA12, PA16, PA18, PA20, PA22, PA23, PA24, PA25PA28, PA30, PA32, PA39 Rockwell: 112, 114 Taylorcraft: 19, 15A, 20, 20AG, Zephyr Temco: (Swift) GC-1, GA-1B) |
| 55-35-8 | D1-112-5122 | P-551-AYZ | RT-8 | Clockwise | 2050 | Beech: 35, A3S, B35, 35R |
| 55-35-9 | D1-112-5030 | P-551-AZH | RT-9 | Counter-clockwise | 2300 | Aeronca: Champion, Chief (early models) Piper: PA15, PA18, (W/TCM eng) |
| 55-35-10 | D1-112-5124 | P-551-AZJ | RT-10 | Counter-clockwise | 2050 | Aeronca: Champion, Chief (late models) Champion: 7AC, 11AC, 7CCM Beech |
| 55-35-11 | D1-112-5025 | P-551-TA | RT-11 | Clockwise | 2566 | Bonanza Models: G35 thru V35, V35TC, 36, A36, 95, B95, B95A, D95A- All Musketeer Models. All Debonair Models Cessna: 150, 152, 172, 177, 185 & 188 (with IO-520 eng), 206, 207, 210, 310, 320 Helio: H250, H391, H392, H395 Navion: E, F, G Stits: SA9A, SA9B Bellanca/Champion: 7AC Stinson: 105, 108 |
| 55-35-12 | D1-112-5032 | P-551-AZK | RT-12 | Counter-clockwise | 2566 | |
| 55-35-14 | D1-112-5028 | P-551-AZA | RT-14 | Clockwise | 1800 | Aero Commander (Ayres Corp.) B1A, S2B, S2C, S2D, S2R Stearman: A75 (P & W eng.) |
| 55-35-15 | D1-112-5034 | P-551-AZB | RT-15 | Clockwise | 3000 | Cessna: 175 |
| 55-35-16 | D1-112-5029 | P-551-AZL | RT-16 | Counter-clockwise | 1800 | Grumman: G164 |
| 55-35-17 | D1-112-5024 | N/A | RT-17 | Clockwise | 2400 | Maule: M5/6/MX7-180, M5/6/7/MX7-235 |

*The specific tachometer listed is best suited if the installation has this approximate cruise rpm.
 Direction of rotation must be compatible with the previous tachometer that was used.

IN

SLI AIRCRAFT TACHOMETERS



SL1010-43000-SERIES

For three decades, Superior Labs, Inc. (SLI) has supplied the aircraft OEM's with the finest quality and most reliable mechanical tachometers in the industry for new production aircraft and can be customized for a variety of aircraft applications. These are now available to the public as aftermarket tachometers.

Specifications:

- Accuracy to within ± 25 RPM
- Diameter 3-1/8"
- Weight: 13 Oz.
- Range 0-3500 RPM
- Length 3-1/2"
- Two Years Warranty

Most Models

SEE WWW.AIRCRAFTSPRUCE.COM FOR APPLICATION CHART, PART NUMBERS, AND PRICES.



SL1010-55000-SERIES

| Accessories | Part No. | Price |
|---------------------------|----------|-------|
| SLI Custom Range Markings | 10-03685 | . |
| Sli Tach Lighting | 10-03672 | . |
| SLI Tach Hours Set | 10-03673 | . |

TACHOMETERS – EGT/CHT SYSTEMS

UMA 2-1/4" ELECTRONIC TACHOMETERS

These tachs have high resolution and easy to read displays. The analog model has a 250° sweep which provides great resolution in both the 3500 & 7000 ranges. The digital model has a bright LED display. Separate power source required. All tachs require power from a 14 or 28V system. Installations are simple with instructions included.



3500 ANALOG TACH - Lyc./Continental (to replace mechanical tachs) Current: 37 milliamps Size: 2.25"rnd. X 2.75"deep
 0-3500 RPM, 4 cyl., Pulses:1.. P/N 10-02140
 0-3500 RPM, 4 cyl., Pulses:2.. P/N 10-00083
 0-3500 RPM, 6 cyl..... P/N 10-02141



7000 ANALOG TACH - Current: 37 milliamps; Size: 2.25" round X 2.75" deep
 Rotax 19-519-206.....P/N 10-01854
 Rotax 912.....P/N 10-01853
 Rotax 912/914 Lit.....P/N 10-02053



DIGITAL LED MODEL - Lycoming/Continental (replace mechanical tachs) Display: 7/16"; Size: 2.25" rnd X 2.75"dP/N 10-24885
 Rotax 912/914P/N 10-00084

UMA 3-1/8" ELECTRONIC TACHOMETERS



These 3-1/8" electronic tachometers use a 250° sweep meter movement to withstand high levels of vibration and register flight time accurately. Starting at 1800 RPM and higher, not just cruise speed. The hour meter counts flight hours at RPM settings of 1800 & higher. Power: 12-28VDC. 2-year warranty.

| Range | Description | Part no. | Price |
|------------|--|----------|-------|
| 0-7000 RPM | For Rotax 912 Engine | 10-00119 | . |
| 0-3500 RPM | *To replace Mechanical Tachometer (reads CW or CCW; B&W Dial Only) Furnished w/mechanical sender | 10-00120 | . |
| 0-3500 RPM | *To replace Mechanical Tachometer (Green Arc 500-2700 - Red 2700) Furnished w/mechanical sender | 10-00121 | . |

* P/N 10-00120, 10-00121, 10-24870, & 10-24885 tachs eliminate the problems associated with mechanical tach cables, and the sending unit is a direct replacement for the tach cable. All models are analog style tachs with hour meters and can read RPM for either clockwise or counter-clockwise revolutions. Sender included. **Slick Mags Only

WESTACH TACHOMETERS



Westach Tachometers connect to primary lead of magnetos. No sender required.

2-1/4"Size..... 4 Cycle Engines.. 3-1/8" Size.....

| | 3500 RPM | 5000 RPM | | 3500 RPM | 5000 RPM |
|-------|----------|----------|-------|----------|----------|
| 4 Cyl | 2AT3-2 | 2AT5-2 | 4 Cyl | 3AT3-2 | 3AT5-2 |
| 6 Cyl | 2AT33-2 | 2AT53-2 | 6 Cyl | 3AT33-2 | 3AT53-2 |

2-1/4" TACH/HOUR METERS



SQUARE

0-3500, Magneto Ignition.....P/N 10-01305
 0-3500, Coil Ignition.....P/N 10-01305
 0-8000, Magneto Ignition.....P/N 10-01690
 0-8000, Coil Ignition.....P/N 10-00829
 0-3500, 5 Impulse for Jabiru.....P/N 10-00478
 0-3500, 6 Impulse for Jabiru.....P/N 10-00479



ROUND

0-3500, Magneto Ignition.....P/N 10-01691
 0-3500, Coil Ignition.....P/N 10-01692
 0-8000, Magneto Ignition.....P/N 10-01693
 0-8000, Coil Ignition2.....P/N 10-01694
 0-3500, 5 Impulse for Jabiru.....P/N 10-00480
 0-3500, 6 Impulse for Jabiru.....P/N 10-00481

2-1/4" REMOTE HEAD TACHOMETER

This tachometer is driven with power supplied by a transducer on the engine tach drive. Range 0-3500 RPM. Wt. 6 oz. Includes Gauge, sender, and tang.

Complete kit.....P/N 10-00805
 Sender only.....P/N 10-02084
 Tang only.....P/N 444-2

WESTACH TACHOMETER INSTRUMENTS



KY3GA3-1/2A - Tachometer 500-3,500 RPM with hour-meter kit, 3-1/8" square, 1/2 to 1 ratio. adjustable, with 303 DGT sender, 444-2 tang, 208-SS-SS cable. P/N 10-02644.....



K3GA3-1/2A - Tachometer 500-3,500 RPM kit, 3-1/8" square, 1/2 to 1 ratio. adjustable with 303DGT sender, 444-2 tang, 208-SS-SS cable. P/N 10-02643.....



ELECTRONIC TACHOMETER 0-3500 RPM FOR 6 CYLINDER

UMA has one of the most extensive line of tachometers available on today's market. They manufacture tachometers for a wide variety of engines and ignition systems used in ultralights, kit planes, and most general aviation aircraft. 3-1/8"..... P/N 10-02116

FOR 4 CYLINDER -

3-1/8" 0-3500 RPM (1 Pulse)..... P/N 10-02063
 3-1/8" 0-3500 RPM (2 Pulse)..... P/N 10-00120



UMA ELECTRONIC TSO'D TACHS

Owners of Lycoming & Continental powered airplanes now have an electronic, analog alternative to the old cable driven tachometer. The new UMA tach is certified to FAA TSO C49b standards for fixed wing aircraft. The system uses a tach sender mounted on the engine in place of the mechanical cable and is connected to the indicator with a single, 3-conductor cable. The 3 1/8" indicator utilizes a high torque pivot and jewel movement. The hour meter can be factory set to start at any desired RPM point. This unit gives the pilot the analog display that is easiest to scan and provides electronic accuracy and ease of installation. Custom dial markings in color & internal Electro-Luminescent lighting are available at extra cost. UMA manufactures a complete line of TSO'd & non-TSO'd gauges & instruments in the USA.

| UMA Model# | Range | Dial Marking | Part No. | Price |
|------------|------------|---|----------|-------|
| T19-801-10 | 0-3500 RPM | Black & White | 10-01221 | . |
| T19-801-11 | 0-3500 RPM | Green Arc 500-2700 & Red Line 2700RPM(Lyc.) | 10-01222 | . |



P-1000 DIGITAL TACH BY HORIZON INSTRUMENTS

Provides diagnostic and performance information about the aircraft engine and ignition system not normally available with current mechanical or electrical/electronic tachometers. Horizon instrument's P-1000 eliminates problems resulting from inaccurate tachometers: engine operation outside of allowable RPM ranges, reduced engine life, reduced fuel economy, reduced power, or propeller overspeeding - all of which can result in hazardous flying conditions. The P-1000 is STC approved for primary installation, not just secondary. Also incorporated into the P-1000 is a highly accurate engine hours clock, and an RPM Trap memory that recalls the highest RPM achieved by the engine. Both features are enabled with a touch of a button. The P-1000 is housed in a rugged, light-weight aluminum standard 3-1/8 inch "MS" style case. Installation is simple. Only four wires are connected, all of which are located under the panel! The P-1000 is the ideal aircraft tachometer, for upgrades or new designs, providing the conscientious pilot with high reliability, accurate RPM reading, and valuable diagnostic information..... P/N 10-01592.....



TRU-TACH II DIGITAL TACHOMETER

An inaccurate tachometer can waste performance, fuel and engine life. Mechanical tachometers are notoriously inaccurate and should be checked at each annual and 100 hour inspection or any time aircraft performance is in question. The TruTach II Optical Digital Tachometer measures the true speed of your propeller from inside or outside the aircraft. Just point it at the propeller or rotor blades and TruTach II will directly display the rotational speed with a resolution of 1 RPM. No connection to aircraft systems is required and measurements may be made at any speed setting from 240 to 70000 RPM. Direct display is available for 2, 3, 4, and 5 blade propellers. Digital Signal Processing assures rock-solid display in single and multi-engine aircraft as well as helicopters. The compact 4-inch instrument weighs just 4 ounces and may be used with fast turning ultra-lights and kit plane propellers. Just turn it on, select the number of propeller blades and point. Automatic shut-off turns the unit off if you forget. The TruTach II includes an Impact resistant case and standard 9 volt battery providing 150 hours of operation. P/N 10-01021



MICROFLIGHT DUAL TACH/EGT

2" Round Gauge. Tachometer - Universal for single or dual ignition. EGT range: 700-1700°F. EGT probe (clamp type) sender included P/N 10-01628



MITCHELL D1-112-5240 ROTAX 912 TACHOMETER

Mitchell 2-1/4 Inch Mechanical Recording. FAA-TSO Approved. D1-112-5240 Special-Rotax 912 P/N 10-02744

UMA SENDING UNITS FOR TACHOMETERS

Unit 1A3-4 Includes: Sending Unit, and .156 dia. tang adapter. 10-01706.....
T1A9 Magnetic pickup for Slick or Bendix Magnetos (6 ft. cable lengths)
 Slick.....P/N 10-02432
 Bendix.....P/N 10-02433



1A3-4



T1A9

ALCOR EGT & CHT SYSTEMS

BASIC EGT & CHT SYSTEMS

Alcor EGT and CHT gauges are fully TSO'd aircraft quality gauges which will provide precise monitoring of engine temperatures. Some of the most popular systems are shown here, and all systems are available. Request quotation on unlisted models.

2-1/4" GAUGES



3-1/8" GAUGES



BASIC SYSTEMS – Basic system kits include the 2-1/4" instrument, one lead and one probe to monitor the EGT or CHT for a single cylinder.

ANALYZER SYSTEMS – Analyzer systems include instrument, all leads, switches and probes to monitor the EGT or CHT for every cylinder.

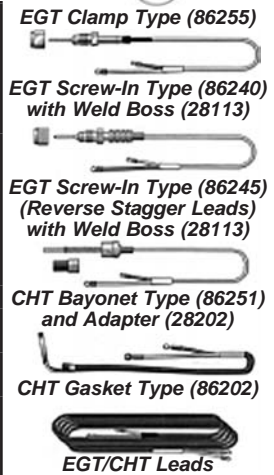
| BASIC SYSTEMS | | | ANALYZER SYSTEMS | | |
|---------------|----------|-----------|------------------|----------|-----------|
| System | Part No. | Our Price | System | Part No. | Our Price |
| EGT | 10-08700 | . | EGT (4Cyl.) | 10-09000 | . |
| CHT | 10-08800 | . | CHT (4 Cyl.) | 10-09100 | . |
| EGT/CHT 21/4" | 10-08900 | . | EGT/CHT (4 Cyl.) | 10-09200 | . |
| EGT/CHT 31/8" | 10-20700 | . | EGT (6 Cyl.) | 10-09300 | . |

BASIC EGT & CHT SYSTEMS

Alcor's probe (thermocouples) reliability is legendary in the aviation community, designed to give years of dependable and accurate service.

GROUNDING THERMOCOUPLES

| ALCOR P/N | DESCRIPTION |
|-----------|--|
| 86255 | EGT Clamp Type Probe min/ max dia.-1.5" to 3.25" (Yellow/Red, Chrome/Alumel) |
| 86240 | EGT Screw-In Probe, fitting dims: 7/16" x 20 threads (Yellow/Red) less boss |
| 86245 | EGT Screw-In Probe, fitting dims- 7/16" x 20 threads (Yellow/Red, reverse stagger leads) less boss |
| 28113 | Weld Boss |
| 86251 | CHT Bayonet Probe (Black/Yellow) |
| 28202 | Iron/Constantan AN5541-1 CHT Bayonet Probe Adapter |
| 86202 | AN4076-1 CHT Gasket Type Thermocouple (Spark Plug) (Black/Yellow, Iron/ Constantan) 18mm AN5540-1 |



IMPORTANT! EGT systems & components with red/brown color codes are not compatible with systems & components using red/yellow codes.

Alcor Systems are FAA Approved and the grounded probes have a 5Yr factory warranty, the ungrounded probes have a 1yr factory warranty, and the instruments have a 3yr factory warranty.

ALCOR COMPONENT PRICE LIST

| Alcor P/N | Our P/N | Description | Price |
|--------------------------------------|----------|---------------------------------------|-------|
| System Tester | | | |
| 85331 | 10-00995 | Alcal 2000 (FAA/PMA Not Req'd.) | . |
| EGT Leads, Type K | | | |
| 42525 | 42525 | EGT Leads, Type K (90") | . |
| 42526 | 42526 | EGT Leads, Type K (144") | . |
| 42527 | 10-00131 | EGT Leads, Type K (240") | . |
| 42528 | 42528 | EGT Leads, Type K (216") | . |
| CHT Leads, Type J | | | |
| 42535 | 42535 | CHT Leads, Type J (90" 8 ohm) | . |
| 42536 | 42536 | CHT Leads, Type J (144" 8 ohm) | . |
| 42537 | 42537 | CHT Leads, Type J (240" 8 ohm) | . |
| 42543 | 42543 | CHT Leads, Type J (216" 8 ohm) | . |
| Meters, Single 2-1/4" | | | |
| 46149 | 10-03859 | EGT Internal light 24V Type K | . |
| 46150 | 46150 | EGT Type K | . |
| 46151 | 46151 | CHT Type J, Fahrenheit | . |
| 46162 | 10-00992 | EGT Type K, Fahrenheit (Green Arc) | . |
| 46164 | 10-00993 | EGT Type K, Fahrenheit (No Green Arc) | . |
| 46171 | 10-00996 | CHT Type J, Celsius | . |
| 46244 | 10-00997 | EGT 240" Lead Type K, Fahrenheit | . |
| Meters, Dual 2-1/4" | | | |
| 46124 | 10-00994 | TIT/TIT Type K, Fahrenheit | . |
| 46125 | 10-00126 | EGT/EGT Type K | . |
| 46126 | 46126 | EGT/CHT Type K & J, Fahrenheit | . |
| 46127 | 10-00127 | CHT/CHT Type J, Fahrenheit | . |
| Meters, Dual 3-1/8" | | | |
| 45993 | 10-00998 | EGT Type E | . |
| 46115 | 10-03861 | EGT/EGT Internal Light 24V Type K | . |
| 46155 | 10-00128 | EGT/EGT Type K | . |
| 46156 | 46156 | CHT/EGT Type J & K, Fahrenheit | . |
| 46157 | 10-03860 | CHT/CHT Type J Fahrenheit | . |
| 46224 | 10-00999 | TIT/TIT Type K, Fahrenheit | . |
| Meters, Dual 3-1/8" w/ switch | | | |
| TCP | | | |
| 73061 | 05-21500 | Syringe Assembly | . |
| 73099 | 05-01429 | TCP 5-Gallon Can | . |
| 73100 | 05-01430 | TCP 55-Gallon Drum | . |
| 73107 | 05-21300 | TCP Quart w/Perm. Draw Tube | . |

| Alcor P/N | Our P/N | Description | Price |
|------------------------------|----------|--|-------|
| EGT Probes, Type K | | | |
| 86143 | 10-01005 | Model N, Screw-In (1/4 NPT) | . |
| 86159 | 10-01006 | Model H, Screw-In (1/4 NPT) | . |
| 86160 | 10-01007 | Model J1, Screw-In (7/16-20) | . |
| 86161 | 10-01008 | Model K, Screw-In (1/4 NPT) | . |
| 86226 | 10-01009 | Model A, Clamp, 11.75" (Rev. Stagger) | . |
| 86230 | 10-01011 | Model N2, Screw-In (1/4 NPT) | . |
| 86240 | 10-00129 | Model B, Screw-In (7/16-20) | . |
| 86245 | 86245 | Model B, Screw-In (7/16-20) (Rev. Stagger) | . |
| 86255 | 86255 | Model A, Clamp (Normal Stagger) | . |
| 86275 | 10-01012 | Model A, Clamp, 13.6" (Rev. Stagger) | . |
| 86281 | 10-01013 | Model A, Clamp C/A | . |
| EGT PROBES, Type E | | | |
| 86149 | 10-01014 | Model B, Screw-In (7/16-20) | . |
| 86153 | 10-01015 | Model H, Screw-In (1/4 NPT) | . |
| 86156 | 86156 | Clamp | . |
| CHT Probes | | | |
| 86146 | AN5546-1 | Bayonet (AN5546-1) Thermistor | . |
| 86202 | 86202 | Gasket Style | . |
| 86251 | 86251 | Bayonet Style, Type J | . |
| Ungrounded EGT Probes | | | |
| 86307 | 10-86307 | Screw-In (1/4 NPT) | . |
| 86308 | 10-86308 | Screw-In (7/16-20) | . |
| 86309 | 10-86309 | Screw-In (7/16-20) | . |
| 86310 | 10-86310 | Clamp | . |
| 86343 | 10-86339 | Clamp (with Plug, Short) | . |
| Accessories | | | |
| 28113 | 10-01017 | Weld Boss (for B Probe) | . |
| 28202 | 28202 | CHT Adapter for Bayonet Probe (AN4076-1) | . |
| 28204 | 10-01018 | Plug for 86160 Probe | . |
| 42523 | 10-01019 | EGT Lead Adapter | . |
| 80825 | 80825 | Single Universal Selector Switch | . |
| 80827 | 80827 | Dual Universal Selector Switch | . |
| Vernier | | | |
| 93882 | 10-01020 | Vernier Control Assembly 112" | . |
| Alcal, CHT Parts | | | |
| 28202 | 28202 | Bayonet Thermocouple Adapter (1004-4) | . |


IN

WESTACH INSTRUMENTS


2-1/4" ENGINE INSTRUMENTS

Guaranteed accurate within 2% with a 1-yr. warranty. Weight - an unbelievable 4oz. These instruments are self powered by the thermocouple, except for the lighting.

CYLINDER HEAD TEMPERATURE

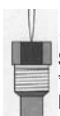
- 
- 100-700°F P/N 2A1
 - 25°-375°C P/N 2A1-2
- SENDERS: CHT Senders have 4 ft. leads.
 14mm gasket type (VW, Rotax)...P/N 712-4W
 - 18mm gasket type (Cont,Lyc.)...P/N 712-5W
 - Bayonet type 3/8" x 24 thread..P/N 712-7D
 - Bayonet type 1/8" NPT thread P/N 712-7DJ
 - (All Rotax) P/N 712-912K

EXHAUST GAS TEMPERATURE

- 
- 700-1700°F/350-950°C P/N 2A2
 - 100-1900°F/100-1000C..... P/N 2A2-1
 - 400-900°C P/N 2A2-2
 - 4000-1600°F/200-850°C P/N 2A2-7
- SENDERS - Clamp type senders with 3/16" diameter probe. EGT Senders have 4 ft leads.
 1" long tip P/N 712-2DVK
 - 1/2" long tip P/N 712-20DVK
 - Long tip 1/4" threads P/N 712-4D
 - 3/8-24 for Lycomings..... P/N 712-4D1
 - Long tip for VW (1/12" OD tailpipe)..... P/N 712-24DVK
 - (All Rotax)..... P/N 712-32DVK
 - Bayonet K type, EGT probe for Rotax P/N 712-4D6K
 - Exposed Tip, model 712-20DVK - Hose clamp style 1/2" probe. P/N 10-01300.....

Note: Westberg 712 Series Thermocouples are for Non-TSO'd CHT & EGT Gauges only. They have two small pins which are the same size. 712 Series Thermocouples cannot be used with Non TSO'd Gauges.

OIL TEMPERATURE



- 100° - 260°F P/N 2A9-2*
 - Sending Unit..... P/N 399S7.....
- *Use Sender #399S9-7/8 for Cont & Lyc Engines. (5/8-18 Thread) P/N 399S9.....

OIL PRESSURE



- 0-80 PSI (w/sender) P/N K2A8MM
- SENDING UNIT (Available Separately) P/N 387-12S.....

FUEL PRESSURE



- 0-15 PS w/Sender(SET).....P/N K2A8-8MM

MANIFOLD PRESSURE GAUGE

- 2-1/4" Size 0-30 PSI..... P/N K2A4-6.....



FUEL LEVEL



- 2-1/4 FUEL LEVEL GA 0-5VDC - Non-TSO'd fuel quantity indicators available for single or dual tanks. Require 0-5Vcapacitance senders (not incl.)
- Instrument (Single) P/N 2A7V
- Instrument (Dual)..... P/N 2DA4V
- Sender (6"-12"Depth) P/N 10-00797
- Sender (12"- 24" Depth)..... P/N 10-00799
- Sender (6"-12" Depth-Bendable)..... P/N 395-5SB-5
- Sender (12"-24" Depth-Bendable)..... P/N 395-5S-1B-5

TSO CABLE 2-CONDUCTOR WITH SOCKET



- TSO Cable 2-Conductor 3' W/Socket P/N 10-02096.....
- TSO Cable 2-Conductor 15' W/ Socket P/N 10-02095.....
- TSO Cable 2-Conductor 10' W/ Socket P/N 10-02094.....

WESTACH BULLET CONNECTORS

Bullets are used to connect sockets and sleeves together on the back of Westach instruments. P/N 10-02795.....

*** These instruments may be powered by connection to 12V battery, magneto, distributor or alternator. If installation is to be made using other than 12V electric power, order one Magneto Adapter, P/N 103-18 (\$6.30) and one Fuse Adapter, P/N 10-17000 (\$6.30) for each instrument. For 24V operation, order one Adapter, P/N 329-24 (\$2.30) for each instrument.**

OUTSIDE AIR TEMPERATURE

- P/N 2A3-3.....
- Sending Unit.....P/N 399-OT

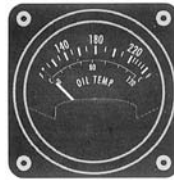


CARBURETOR AIR TEMP

- 50°C to 50°C, Provides instant icing check of carburetor. P/N 2A3-1
- SENDING UNIT - Fits 1/4-28 Thread P/N 399W



COOLANT TEMPERATURE



- 100° to 260°F, for aircraft and helicopters using coolants other than oil. P/N 10-01301*.....
- Sending Unit..... P/N 10-01249.....

Order one Type 381 Fuse Adapter for each tachometer installation as a safety measure against magneto failure.

- P/N 10-17000

AMMETER



- 30 to +30A, & #237-2A Shunt P/N K2A6-22..... **Set** .
- 60 to +60A, & #237-3A Shunt P/N K2A6-15..... **Set** .

HOURLMETER



- Power Range, 5V-40V, Record running time of engine. P/N 2A10-2
- No sender required.**

VOLTMETERS



- Check generator & alternator charging**
- 6-16 VDC..... P/N 2A5
- 0-35 VDC..... P/N 2A5-2
- No sender required.**

SELECTOR SWITCHES

These switches are used with the Westach CHT, EGT, or CHT/EGT gauges to allow multiple cylinder engine analyzing. Switches included with Engine Analyzer kits & Add-On kits on following pages, or can order separately below. Non-TSO'd. These switches have two small connectors of same size.



- 2-Position P/N 254-2F
- 4-Position P/N 254-4F
- 4-Position (Dual) P/N 254-4DF*
- 6-Position P/N 254-6F
- 6-Position (Dual) P/N 254-6DF*

***To convert dual EGT/CHT to Engine Analyzer. FAA APPROVED SWITCHES**

- 4-Position P/N 254-20EP
- 6-Position P/N 254-21EP
- 6-Position (Dual) P/N 254-21EDPP

These switches are furnished with 96" leads.

WESTACH EXTENSION LEADS

Complete extension leads, with connector terminals, for extending CHT or EGT leads up to Complete extension leads, with connector terminals, for extending CHT or EGT leads up to 10 ft. without affecting accuracy. Longer lengths give low reading, requiring recalibration of instrument.

- 18" Lead ..P/N 10-17900 4 Ft. Lead P/N 10-18000
- 6ft Lead ...P/N 10-18100 8 Ft. Lead P/N 10-18200
- 10ft Lead .P/N 10-18300 12 Ft. Lead .. P/N 10-18350

WESTACH TSO'D EXTENSION LEADS

TSO'D 2-Conductor EGT/CHT Extension Leads with sockets and sleeves at both ends.

- Westach TSO'D EGT/CHT 6ft Extension..... P/N 10-02161
- Westach TSO'D EGT/CHT 8ft Extension..... P/N 10-02162

WESTACH INSTRUMENT LIGHTING

An internal lighting fixture may be added to all 2-1/4" & 3-1/8" instruments. Comes with clear bulb and red & green boots. P/N 186..... **.ea**

IN

WESTACH INSTRUMENTS

2-1/4-INCH DUAL INSTRUMENTS SAVE PANEL SPACE (SUPREME SPACE SAVERS)

TWO INSTRUMENTS IN ONE 2-1/4" SIZE CASE - PERFECT FOR THE HOME BUILDER

All pressure instruments come complete w/pressure senders only (matched to instrument). On all other instruments, order senders at bottom of page.



DUAL EGT-CHT
700-1700°F EGT
100-700°F CHT
P/N 2DA1 .

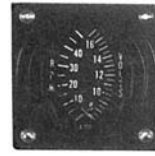


DUAL EGT
700-1700°F
P/N 2DA2 .



**DUAL OIL PRESSURE
OIL TEMPERATURE**
0-80 PSI/100-260°F
P/N2DA3MM .

Complete w/ oil pressure sender.



**DUAL TACHOME-
TETER VOLTMETER**
0-5000 RPM/6-16V
P/N 2DA6 .



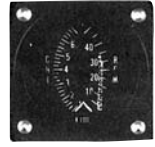
**DUAL
TACHOMETER**
0-5000 RPM
P/N 2DA5-2 .



DUAL FUEL LEVEL
Uses capacitance type
senders. 5V output.
P/N 2DA4V .



DUAL CHT
100-700°F
P/N 2DA8 .



**DUAL
TACHOMETER CHT**
0-5000 rpm/100-700°F
P/N 2DA9-5-2 .



DUAL VOLT-AMMETER
6-16V/0-30 A
P/N K2DA10-21
6-16KV/0-60 amp
P/N K2DA10-18.....
Complete with Shunt



**DUAL CARB TEMP-
OUTSIDE AIR TEMP**
-50° to +50° C.
P/N 2DA3-8 .
Order 399W & 399-0T
Senders Separately

3-1/8" WESTACH GAUGES



TWIN CHT
3-1/8" Size; Wt. 10 Oz.,
100-800°F
P/N 3DA8....



TWIN EGT
3-1/8" Size, Wt. 10 Oz.
700-1700°F
P/N 3DA2....



COMBINATION EGT & CHT
3-1/8" size, Wt.10oz.,
700-1700°F/ 100-800°F.
P/N 3DA1...

Order 1 EGT probe & 1 thermocouple.



RECORDING TACHOMETER
3-1/8" size Runs directly off magneto.
12V power required to run Hour Meter
0-3500 RPM ... P/N Y3AT32.....
0-5000 RPM ... P/N Y3AT5-2.....



EGT - CHT GAUGES
3-1/8" Square EGT P/N 3A2-1
3-1/8" Round EGT. P/N 3C2-1
Square CHT P/N 3A1
3-1/8" Round CHT. P/N 3C1

Order 2 thermocouples

All Pressure Instruments come complete with Pressure Senders only (matched to Instrument). On all other instruments order senders at bottom of page.

SPACE SAVING GAUGES - THE WESTACH QUADS

Four electric instruments in one standard size 3-1/8" aircraft case. Weight - only 6 oz. Guaranteed for accuracy within 2%. 1 year warranty. Get four "like" readings or four different ones. Order Senders below except for pressure instruments.



QUAD CHT
P/N 3AQ1...



QUAD EGT.
P/N 3AQ2...



**QUAD COMBO TACH/
EGT VOLTS/CHT**
P/N 3AQ7-3...



**QUAD COMBO VOLTS/CHT
OIL PRESS/OIL TEMP & OIL**
Press. Sender Only
P/N 3AQ5MM.....



**QUAD COMBO CHT/EGT
OIL PRESS/OIL TEMP**
P/N 3AQ4MM...

OTHER QUAD COMBOS AVAILABLE:

3AQ1-14CHT/Volts/EGT/Amps.....
3AQ4-8MMOP/Amps/OT/Volts

Over 75 Quad Combos available.

Request availability of unlisted models.

*With Senders

For custom quad gauges,
request quotation & exact
location of each function
as shown in the diagram.

WESTACH SENDERS

| | |
|--|--|
| EGT 712-2DWK (Long Life) 1" Tip | Oil Pressure 387-12S (for old style gauge) |
| 712-20DWK 1/2" Tip | Oil Temp..... 399S7 1/8" NPT..... |
| 712-4D (1/4" Pipe Bayonet)..... | Oil Temp..... 399S9 (CONT, LYC)..... |
| 712-4D1 (3/8"-24 for Lycomings) | Fuel Level... 395-5S-5 (6"-12" Depth) |
| 712-4D6K | Fuel Level... 395-5SI-5 (12"-24" Depth) |
| (.8-1MM Bayonet for Rotax) | Fuel Level... 395-5SB-5 Bendable |
| 712-4D2 (1/8" NPT)..... | Fuel Level... 395-5S-1B-5 Bendable..... |
| CHT 712-5W (18 MM Thermocouple) | Temp Send. 399S10-1.5L..... |
| 712-4W (14 MM Thermocouple) | Westberg SS Trans |
| 712-7D (3/8-24 Bayonet) | 387-100KV..... |
| 712-9W (10MM Thermocouple)..... | |

POSITION #1

CHT: 100° - 700°F
EGT: 600° - 1600°F
OP (378 series only): 0-80#, 0-100#
FP (378 series only): 0-15#, 0-80#
FL: E - 1/2" - F
Volts: 6-16
PRES: 0-100#
OT: 100° - 260°F
RPM: 1000-7000

POSITION #2

CHT: 100° - 700°F
EGT: 600° - 1600°F, 600° - 1600°F
OP (378 series only): 0-80#, 0-100#
FP (378 series only): 0-15#, 0-80#
FL: E - 1/2" - F
Volts: 6-16
AT (outside air temp.): -60° to +100°F
Temp: 100° - 260°F
CT (carb. temp.): -60° to +100°F
CAT (chrg. air temp.): 100° - 400°F
RPM: 0-3500, 0-4000, 0-5000,
0-7000, 0-10000

POSITION #3

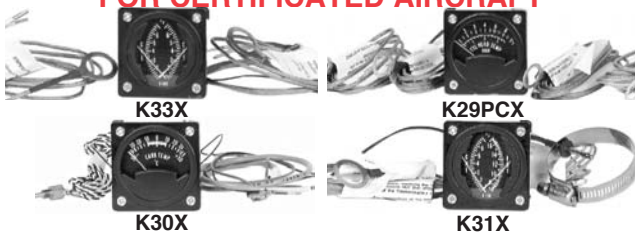
CHT: 100° - 700°F
EGT: 600° - 1600°F
OP (378 series only): 0-80#, 0-100#
FP (378 series only): 0-15#, 0-80#
FL: E - 1/2" - F
Volts: 6-16
OT: 50° - 250°F,
100° - 260°F
WT: 100° - 300°F,
150° - 300°F

POSITION #4

CHT: 100° - 700°F,
25 - 375°F
EGT: 400° - 1400°,
600° - 1600°F
OP (378 series only): 0-15#, 0-80#, 0-100#
FP (378 series only): 0-80#
FL: F - 1/2" - E
Volts: 6-16, 18-28
OT: 100° - 260°F
WT: 100° - 260°F
Temp: 100° - 260°F
RPM: 1000-7000
AMP: -30° to +30°, -60° to +60°

WESTACH INSTRUMENTS

FAA-APPROVED WESTACH INSTRUMENTS FOR CERTIFICATED AIRCRAFT



Westach Instruments now has FAA approval on all the instruments listed below. These gauges are fully approved for installation in factory aircraft, so the weight and cost savings of Westach gauges can now be enjoyed by owners of production aircraft as well as home builders. All systems are complete with instrument (internally lighted), senders and leads. The multi-position CHT and EGT systems also include sender selector switch with wiring. The EGT and CHT systems are furnished with #713-2DVK and #713-5W senders. If threaded senders are preferred, #713-4D and #713-7D senders can be furnished for an additional \$35.00 each. The EGT gauges have an adjustable pointer. All of these gauges fit 2-1/4" panel hole.

| Description | Model | Part No. | Price |
|--|----------|----------|-------|
| EGT Gauge 700-1700°F (1 Position) | K28PX | 10-01237 | . |
| EGT Gauge 700-1700°F (4 Positions) | K28PCX | 10-01362 | . |
| Air Temperature Gauge | K34X | 10-01363 | . |
| EGT Gauge 700-1700°F (6 Positions) | K28PDX | 10-01291 | . |
| CHT Gauge 100-700°F (1 Position) | K29PX | 10-01250 | . |
| CHT Gauge (K29PX) w/713-7D sender | K29PX | 10-00187 | . |
| CHT Gauge 100-700°F (4 Positions) | K29PCX | 10-01269 | . |
| CHT Gauge (K29PCX) w/713-7D sender | K29PCX | 10-02793 | . |
| CHT Gauge 100-700°F (6 Positions) | K29PDX | 10-01283 | . |
| CHT Gauge (K29PDX) w/713-7D sender | K29PDX | 10-00375 | . |
| Carb Temp Gauge -50 to +50°C | K30X | 10-01248 | . |
| EGT/CHT Gauge 700-1700°F/100-700°F | K31X | 10-01232 | . |
| EGT/CHT Gauge (K31X) w/713-7D Probe | K31X | 10-00161 | . |
| K31X Kit w/713-4D/713-7D Probes | K31X | 10-00180 | . |
| Dual EGT Gauge 700-1700°F | K32X | 10-01272 | . |
| Dual CHT Gauge 100-700°F | K33X | 10-01297 | . |
| Oil Temp Gauge 100-260°F | K35X | 10-01265 | . |
| Water Temp Gauge 100-260°F | K36X | 10-01388 | . |
| Fuel Pressure Gauge 0-16 PSI | K37K | 10-01663 | . |
| Oil Pressure Gauge 0-100 PSI | K38X | 10-01299 | . |
| Pressure Gauge 0-80PSI | K39X | 10-01664 | . |
| Spare CHT Senders (18mm) | 713-5W | 10-01231 | . |
| Spare CHT Senders (14mm) | 713-4W | 10-01271 | . |
| Spare EGT Senders | 713-2DVK | 10-01228 | . |
| CHT Senders (3/8-24 Bayonet) | 713-7D | 10-01238 | . |
| EGT Senders (1/4" pipe bayonet) | 713-4D | 713-4D | . |
| TSO'D 2-Conductor EGT/CHT Extension Leads with sockets and sleeves at both ends. | | | |
| Westach TSO'D EGT/CHT 6ft Extension | -- | 10-02161 | . |
| Westach TSO'D EGT/CHT 8ft Extension | -- | 10-02162 | . |

Note: Westberg 713 Series Thermocouples are for TSO'd CHT & EGT Gauges only. They have one small pin and one large gold color pin. 712 Series Thermocouples cannot be used with TSO'd Gauges.

WESTACH EGT/CHT COMBINATION KITS HOMEBUILDERS ENGINE ANALYZER KITS



Complete kits include CHT or EGT gauge, selector switch and probes for each cylinder of 4 or 6 cylinder engine. EGT kits furnished with long-life #712-2DVK probes.

| Kit | 4 Cyl. | | 6 Cyl. | |
|--------------|----------|-------|----------|-------|
| | Part No. | Price | Part No. | Price |
| 14MM CHT Kit | 10-17114 | . | 10-17214 | . |
| 18MM CHT Kit | 10-17118 | . | 10-17218 | . |
| EGT Kit | 10-17300 | . | 10-17400 | . |



HOMEBUILDERS ADD-ON KITS

Add-on kits for single-position system already installed. Consists of selector switch & 3 or 5 probes for CHT or EGT to provide analyzer for 4 or 6 cylinder engines. EGT kits furnished with long-life #712-2DVK probes.

| Kit | 4-Cyl. | | 6-Cyl. | |
|---------|----------|-------|----------|-------|
| | Part No. | Price | Part No. | Price |
| CHT Kit | 10-01064 | . | 10-01066 | . |
| EGT Kit | 10-01065 | . | 10-01067 | . |

FAA APPROVED CHT/EGT ADD-ON KITS

These kits include FAA approved Westberg selector switches and probes which can be used to convert the FAA approved kits on this page to engine analyzers.

| Kit | 4 Cyl. | | 6Cyl. | |
|--------------|----------|-------|----------|-------|
| | Part No. | Price | Part No. | Price |
| 14MM CHT Kit | 10-01068 | . | 10-01073 | . |
| 18MM CHT Kit | 10-01069 | . | 10-01072 | . |
| EGT Kit | 10-01070 | . | 10-01074 | . |

WESTACH INSTRUMENTS FOR ULTRALIGHTS



Single CHT ... 10-00419 Single EGT 10-01268
Thermocouple for CHT (14MM) P/N 10-01227
Probe for EGT P/N 10-01225

SINGLE TACH (Tachometer requires no sender.).....

| P/N | RPM | Powered By | P/N | RPM | Powered By |
|--------|--------|------------|-----------|--------|------------|
| 2CT5-2 | 0-5000 | Mag | 2CT5A-2/6 | 0-5000 | CDI |
| 2CT8-2 | 0-8000 | Mag | 2CT8A-2/6 | 0-8000 | CDI |

DUAL TACH/CHT (All CHT's are 0-600° F).....

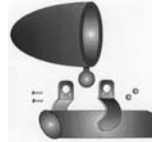
| P/N | RPM | Powered By | P/N | RPM | Powered By |
|----------|--------|------------|-------------|--------|------------|
| 2DC9-5-2 | 0-5000 | Mag | 2DC9-5A-2/6 | 0-5000 | CDI |
| 2DC9-8-2 | 0-8000 | Mag | 2DC9-8A-2/6 | 0-8000 | CDI |



WESTACH 2DC8 DUAL CHT

Cylinder Head Temp. Range: 100-700°F. Use 48" Type J thermocouples. Input: 9.81 mv @ 400F, Weight: 2.7 oz.

P/N 10-01791



BULLET SHELL MOUNTING CASE FOR 2" ROUND WESTACH GAUGES

Molded plastic housing clamps to ultralite tubing or motorcycle handle bar. Swivels 360° at any angle. Furnished with chrome plated installation hardware. P/N 10-01290.....



WESTACH TACHOMETERS FOR DUAL IGNITION

2" Round..... P/N 10-01302
3" Round..... P/N 3CT8A-2/6
2" Square..... P/N 2AT8A-2/6
3" Square..... P/N 3AT8A-2/6



WESTACH ROTOR TACH

For the rotorcraft pilot, the rotor tachometer is a valuable aid to safe flight. Utilize a state-of-the-art Hall-effect sensor to accurately gauge rotor RPM based on the rotational positions of a series of magnets which are easily mounted on the rotor shaft or hub. Sensor and magnets are supplied with the gauge along with complete assembly instructions. 12 volt DC power required. Square style, 2 1/4 inch.

0-500 Tooth ... 10-03808 0-500 Mag. Pulse ... 10-03809
0-800 Tooth ... 10-03810 0-800 Mag. Pulse ... 10-03811



WESTACH LOW POWER ADAPTER

For those instruments requiring 12V DC, this low output regulator/rectifier provides sufficient power to operate up to 2 WESTACH instruments. Converts lighting coil AC to 12V DC. Includes instructions, wiring harness.

P/N 329-LPA

THERMOCOUPLES BAYONET TYPE

Threaded Fitting with 1/8"..... P/N AN4076

Pipe thread to mate with bayonet type thermocouple.

UNIVERSAL REPLACEMENT PROBES

EGT Probe, Type K, Style 86255
P/N 11-01022
CHT Probe, Type J, Style AN 5541-1
P/N AN5541-1
CHT Probe, Type K..... P/N 11-01023
Cessna CHT Probe S2334-3 P/N 06-00703

Note: These probes will only work with a grounded system.

THERMOCOUPLE LEADS HEAVY-WEIGH AN SPEC. WIRE LEADS

8 Ohm Resistance, Iron-Constantan, 90 In.
P/N 42535
8 Ohm Resistance, Iron-Constantan, 144 In.
P/N 42536
8 Ohm Resistance, Iron-Constantan, 20 Ft.
P/N 42537
EGT E.W. Rings..... P/N 11-05672.....

LIGHT-WEIGHT 20 GA. WIRE LEADS

2 Ohm Resistance, Copper-Constantan, 10 Ft. . P/N 10-10900
2 Ohm Iron-Constantan, 5 Ft. 7 In. P/N 10-11000
8 Ohm Resistance, Iron-Constantan, 10 Ft. P/N 10-11110

Terminals on instrument end of lead are plain eye type (one for No. 8 screw and one for No. 10 screw).

IN

ISS 2-1/4" ENGINE GAUGES

This quality line of engine gauges will provide an affordable engine monitoring package for experimental aircraft. Hundreds of these gauges are flying today in various homebuilts worldwide. Used extensively in Vans RV line of aircraft. NOTE: Our gauges do not include our company name or logo on the face.

FEATURES

- 270° Sweep Electric Gauges.
- High Quality Movements in Injection Molded Cases.
- Standard Aircraft 2-1/4" hole & mounting pattern.
- Internally Lit (12V only)
- Clear & sharp lettering with appropriate operating arcs & redlines screened directly on the face.
- Electric design uses transducers & senders. No pressurized fuel & oil in the cabin
- Wires attach with nuts (Included) to 6-32 studs on instrument. No spade fittings.
- Cases have Brass Inserts for the #6 Mounting Screws.
- No Need for Instrument "Grasshopper" nuts.
- Works with Standard Stewart Warner match transducers.

CHT
(0-600°F)



Gauge P/N 10-01093.....
Screw-in Sender 10-00808.....
Gasket Sender ...10-01368

EGT
(0-1600°F)



Gauge P/N 10-01094.....
Sender P/N 10-01591.....

OIL PRESSURE
0-100 PSI GAUGE



P/N 10-01088.....
Sender P/N 10-01089.....
0-60 PSI Gauge
P/N 10-02478.....
Sender P/N 10-01085.....

OIL TEMPERATURE
(0-240°F)



Gauge P/N 10-01090.....
Sender P/N 10-01091.....

AMMETER
(40-0-40)



Gauge.....P/N 10-01080.....
Shunt.....P/N 10-01081.....

MANIFOLD PRESSURE
(10"-35")



Gauge.....P/N 10-01086.....
Sender.....P/N 10-01087.....

FUEL PRESSURE
CARB (0-16 ACI)



Gauge.....P/N 10-01082.....
Sender.....P/N 10-01083.....

FUEL PRESSURE
INJECT (0-60 PSI)



Gauge.....P/N 10-01084.....
Shunt.....P/N 10-01085.....

TACHOMETER
(0-3500 RPM)



Tach.....P/N 10-01076.....
Tach/Gen. Sender
P/N 10-01077.....
Tach./Sender Tang.
P/N 10-03148.....

VOLTMETER
(8-16V)



Gauge.....P/N 10-01092.....

FUEL LEVEL

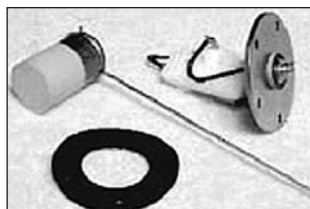


Gauge.....P/N 10-01108.....

270°
Sweep
Electrical
Gauges

REPLACEMENT LAMPS

Replacement 12V Lamp for Gauges
P/N 10-01095.....



FUEL LEVEL SENDERS

ISS Fuel Sender LH 6-12 Tank..... P/N 10-01099

ISS Fuel Sender RH 6-12 Tank P/N 10-01101

ISS Fuel Sender LH 10-15 Tank..... P/N 10-01102

ISS Fuel Sender RH 10-15 Tank P/N 10-01103

ISS Fuel Sender RH 10-15 Tank P/N 10-01103

ISS Fuel Sender LH 15-.5-24..... P/N 10-01104

ISS Fuel Sender RH 15-.5-24..... P/N 10-01104

ISS Fuel Sender RH 27-36" Tank..... P/N 10-01107

ISS Fuel Sender Gasket P/N 10-01097

SS Wire Float Arm P/N 10-01098

ENGINE INSTRUMENTS

QUALITY ROCHESTER GAUGE INSTRUMENTS

A fine line of electric instruments designed exclusively for aircraft use. Temperature compensated and guaranteed to 2% accuracy. Similar to units used in current Cessna, Piper and Beech aircraft. Standard 2-1/4" size with brilliant matte-white dials. Range markings add color and permit readings at a glance. Lighting fixture available. Recommended by Rutan Aircraft Factory for use in Long-EZ, Cozy, and similar home built using Lycoming engines. All instruments featured are for 12 volt systems. Lighting kit 105S3 fits all these gauges.



0-250°F. OIL TEMPERATURE

Green Arc..... 100°-160°F.
Yellow Arc..... 160°-220°F.
Red Line..... 245°F.
P/N 3070-62.....
Sender..... P/N 3080-37.....



0-100 PSI OIL PRESSURE

Green Arc..... 60-90 PSI
Red Line 100 PSI
P/N 3050-54.....
Sender... P/N 3060-18.....



0-20 PSI, FUEL PRESSURE

No Range Markings
P/N 3050-56.....



FUEL LEVEL

Yellow Arc/E-25%
P/N 3090-106.....
Sender..... P/N 10-02045.....
Replacement Gasket (for 10-02045)
P/N 15-716.....
Replacement Fuel Float
P/N 05-03395.....



0-600°F CYLINDER HEAD TEMP FOR LYCOMINGS

Green Arc..... 275°-425°F.
Yellow Arc..... 425°-500°F.
Red Line..... 500°F.
P/N 3070-61.....
Bayonet Type Thermocouple
P/N 3080-38.....



AMMETER, -30A - 0 - +30A

P/N 3010-50.....

No Range Markings
No Sender Required

LIGHTING KIT - P/N 105S3.....



AMMETER -60A - 0 - +60A

P/N 3010-52.....

No Range Markings
No Sender Required

MITCHELL AIRCRAFT INSTRUMENTS 2-1/4" ELECTRIC GAUGES

Mitchell Aircraft Instruments is a high quality, economical line of gauges which is ideal for the homebuilt aircraft market. These electric instruments are lighted, allow easy installation, and feature a 2 year factory warranty. Order gauges and senders separately as shown. 12V operation unless other wise noted. Gauges fit 2-1/4 panel hole. For 24 volt operation, order P/N PE-111-4074 Resistors (\$3.50 each) for each instrument.

OIL TEMPERATURE

100-250° F Gauge..... P/N 10-25000.....
100-250° F Sender (Rotax)..... P/N 10-25005.....
100-250° F Sender (LYC)..... P/N 10-25175.....
120-300° F Gauge..... P/N 10-25010.....
120-300° F Sender (Rotax)..... P/N 10-25015.....
120-300° F Sender (LYC)..... P/N 10-25180.....
90-400°F Sender..... P/N 10-03139.....

Rotax Senders are 1/8-18 NPT, Lycoming Senders are 5/8-18 VNF.

OIL PRESSURE

0-80 PSI Gauge..... P/N 10-25030.....
0-80 PSI Sender..... P/N 10-25035.....
0-100 PSI Gauge..... P/N 10-25040.....
0-100 PSI Sender..... P/N 10-25045.....
0-150 PSI Gauge..... P/N 10-25050.....
0-150 PSI Sender..... P/N 10-25055.....

FUEL PRESSURE

0-30 PSI Gauge..... P/N 10-25060.....
0-30 PSI Sender..... P/N 10-25065.....
0-15 PSI Gauge..... P/N 10-25058.....
0-15 PSI Sender..... P/N 10-25065.....

EXHAUST GAS TEMPERATURE

0-1600°F EGT Gauge..... P/N 10-02746.....
EGT Clamp probe for above EGT Gauge only.
P/N 10-02177.....
KIT - Includes Sender, Weld-on adapter and 6 Ft. Lead with/
connector. 0-1600 EGT kit P/N 10-25090.....

CYLINDER HEAD TEMPERATURE

100-600° F Gauge..... P/N 10-25070.....
120-300F Gauge..... P/N 10-02717.....
18MM Sender (Cont, Lyc)..... P/N 10-25075.....
14MM Sender (VW, Rotax)..... P/N 10-25080.....
10 Ft. CHT Lead w/connector..... P/N 10-25185.....

MITCHELL 2-1/4" MECHANICAL GAUGES

OIL TEMPERATURE

110-270°F..... P/N 10-02714.....

OIL PRESSURE

0-100 PSI..... P/N 10-02706.....
0-150 PSI..... P/N 10-02712.....

FUEL PRESSURE

0-15 PSI..... P/N 10-02702.....
0-30PSI..... P/N 10-02704.....



AMMETER

60-0-60 Ammeter

P/N 10-25115.....
P/N 10-01212 (30-0-30).....



FUEL LEVEL

P/N 10-25130(10-180 OHM).....
P/N 10-02719(0-90 OHM).....
P/N 10-02721(0-30 OHM).....
P/N 10-02722(240-33 OHM).....
Sender..... P/N 10-25135.....



VOLTMETER

P/N 10-25105 (8-16V).....
P/N 10-02747 (12-31V).....
No Sender required.



TURBO

Mechanical Turbocharger Gauge.
Gauge is mechanical. No sender
required. P/N 10-25140.....



OUTSIDE AIR TEMPERATURE

2-1/4" -10°F to +120°F

P/N 10-02715.....



CYLINDER HEAD TEMP GAUGE

For Rotax 120-300°

P/N 10-02717.....
Sender: Probe Supplied w/ Rotax Engine.



OUTSIDE AIR TEMPERATURE

2-1/4" Electric -10°F to +120°F

P/N 10-03137.....
Sender..... P/N 10-02170.....



LIGHTED QUARTZ ELECTRIC CLOCK

Features black dial
with matte white
numbers and hands.
Length: 3-1/4".

Mounts in standard 2-1/4" instru-
ment hole. Power: 14v or 28v.
FAA approved. For 28V adapter
must be used.

P/N 10-01214.....
28V Adapter Kit
P/N 10-02827.....

WIRING KIT GAUGE CONNECTOR

Fits all 2-1/4" Mitchell Gauges

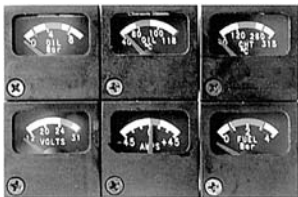
P/N 10-02724.....

IN

INSTRUMENTS

MITCHELL MINIATURE MODULAR GAUGES

This line of miniature engine gauges from Mitchell is ideal for a wide variety of general aviation applications. They measure nearly 1.5" square and are stackable. The modular design allows them to be plugged from the front of the panel. The units are internally lighted. Complete standard panels are also available as shown below.



* FAA Approved

** Do not use on Rotax. Use existing sender.

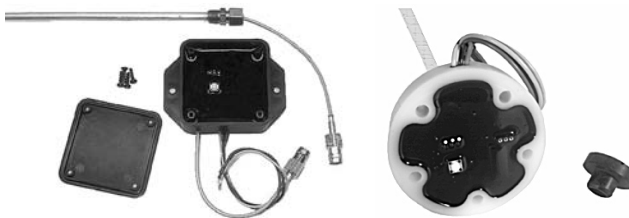
| Part No. | Gauge | Price |
|----------|-----------------------|-------|
| 10-10150 | Fuel* Pressure 15 PSI | . |
| 10-10165 | Voltmeter (28V) | . |
| 10-10152 | Fuel Pressure 30 PSI | . |
| 10-10166 | Oil Pressure (100PSI) | . |
| 10-03451 | Oil Temp. (250°) | . |
| 10-10154 | Oil Temp (300°F)* | . |
| 10-10168 | Oil Pressure (9 Bar) | . |
| 10-10155 | Oil Temp (120°C) | . |
| 10-10170 | CHT 600°F (14V) | . |
| 10-10156 | Water Temp (250°F) | . |
| 10-10172 | CHT 300°C (28V) | . |
| 10-10158 | "Right" Fuel Qty.* | . |
| 10-10174 | 45A Ammeter (12V) | . |
| 10-10160 | "Left" Fuel Qty.* | . |
| 10-10162 | "Fuel" Qty.* | . |
| 10-10176 | 75A Ammeter (12V)* | . |
| 10-10164 | Voltmeter (12V)* | . |

| Backplate w/Pigtail | Sender P/N | Sender | Price |
|---------------------|------------|--------------------------|-------|
| PM-114-6005 | 10-25065 | Fuel Pressure* | . |
| PM-114-6006 | 10-25015** | Oil Temp 1/8 - 18NPT | . |
| | 10-25180 | Oil Temp 5/8 - 18VNF | . |
| | 10-25005** | Water/Oil Temp 1/8-18NPT | . |
| | 10-25175 | Water/Oil Temp 5/8-18VNF | . |
| PM-114-6004 | 10-25135 | Fuel Level* | . |
| PM-114-6001 | | No Sender Required | . |
| PM-114-6007 | 10-25045 | Oil Pressure | . |
| PM-114-6003 | 10-25075 | 18MM CHT (Cont. Lyc) | . |
| | 10-25080 | 14MM CHT VW. Rotax | . |
| PM-114-6002 | 10-25080 | 14MM CHT (VW. Rotax) | . |
| | 10-10184 | 45 AMP Shunt | . |
| | 10-10185 | 75 AMP Shunt* | . |
| | 10-02122 | Backplate w/ Pigtail | . |

* FAA Approved ** Do not use on Rotax. Use existing sender.

If individual gauges are ordered, the appropriate backplate with pigtail (\$9.95 each) must be ordered to mount and connect the gauge. If more than one gauge is ordered to be mounted together, it is a special order cluster that requires custom backplates as shown.

PRINCETON CAPACITIVE FUEL PROBES



- **Easy Push Button Calibration** - Simple push buttons make calibration easy and accurate. No sensitive screw adjustments to make. Place the probe in tank, connect power and press EMPTY. Fill tank and press FULL. Calibration is complete.
- **Steady Readings** - Digital filtering minimizes the effects of fuel slosh providing greater accuracy.
- **Proven Design** - Designed specifically for the aircraft that are subject to harsh environments, such as vibration, temperature, and electrical noise. Probes designed for industrial applications can fail under these conditions. Proven reliability with over 4 years of history.
- **No Moving Parts** - There are not any parts to wear out. Will not require future maintenance or replacement.
- **Compatible Fuel Quantity Gauges** - UMA P/N: 18-110-1C1 (P/N 10-01717), 18-210-1C1 (P/N 10-01717); Westach P/N: 20A4V (P/N 10-01255) & 2A7V (P/N 10-01246)

Mounting Options:

- **Unique Pressfit Installation** - Can be mounted in plastic tank by drilling a 1/2" hole. A rubber grommet is used to hold the probe in place.
- **Standard SAE 5-Hole Bolt Pattern** - A backing plate and seal are used to secure the probe to the tank. Standard Lengths of 12, 18, & 24 inches. Flange mount with standard SAE 5-hole pattern, or rubber grommet press fit. Probes may be shortened up to 1/2 of their measurable length. 0, 3, or 5 inch bendable section. 2 or 5 set points.

Ordering: (LL-BB-SS-MM)

LL - Length (12, 18, or 24 inches)

BB - Bendable Section (NB= non-bendable, 3B= 3inch, 5B= 5inch)

SS - Set points (2S= Empty/Full or 5S= Empty, 1/4, 1/2, 3/4, Full)

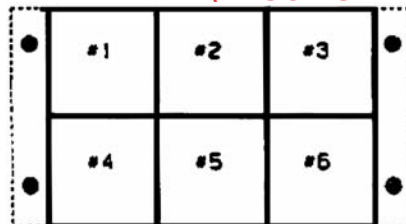
MM - Mounting method (PF= Press fit, FM= Flange Mount)

Example: A 12", non-bendable, 2 set point probe using a press fit mounting part number would be 12-NB-2S-PF

| Description | Part No. | Price |
|--|----------|----------|
| 2 set point | 10-00257 | . |
| 5 set point | 10-00258 | . |
| Standard SAE 5-hole flange mounting kit | 10-00259 | . |
| Advanced model (separate electronics, 1/8 NPT fitting) | 10-00256 | . |
| Accessories | | Part No. |
| Wire For Capacitance Fuel Probe | 11-03996 | . |

IN

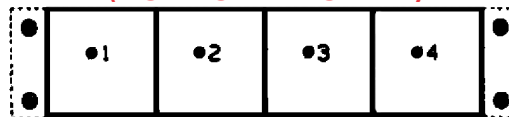
MITCHELL INSTRUMENT CLUSTERS (BLOCK STYLE)



Available in 6 gauge (pictured) or 8 gauge clusters. On 8 gauge clusters, 2 additional gauges are added to the right side of the one pictured. Specify gauge and position desired for all cluster gauge positions. Prices are for the backplane (panel) only. Add price of

- each gauge for total cluster price.
 6 gauge cluster (backplane only) P/N 10-01708
 8 gauge cluster (backplane only) P/N 10-01709

MITCHELL INSTRUMENT CLUSTERS (HORIZONTAL STYLE)



Available in 4 gauge (pictured), 5 gauge, or 6 gauge clusters. On 5 gauge and 6 gauge clusters, additional gauges are added to right side of the one pictured. Specify gauge and position desired for all cluster gauge positions. Prices are for the backplane (panel) only. Add price of each gauge for total cluster price.

- 4 gauge cluster (backplane only) P/N 10-01710
 5 gauge cluster (backplane only) P/N 10-01711
 6 gauge cluster (backplane only) P/N 10-01712

MITCHELL MODULAR GAUGE FRAMES

Modular gauge frames should be specified by part number plus identification of what function gauge (eg Oil Press., Ammeter, EGT) gets plugged in each location. Operating voltage of either 12 or 24 must also be specified. If operating voltage is not specified, 12 volt wiring will be provided. All mounting frames include backplane connectors pre-wired with labeled 18 inch leads



| Total Gauge Capacity | Configuration | Part No. | Price |
|----------------------|---------------|----------|-------|
| 2 Gauges | 2 Wide 1 High | F9 | . |
| 6 Gauges | 1 Wide 6 High | 10-02738 | . |
| 1 Gauge | 1 Gauge | 10-02964 | . |

FALCON ENGINE GAUGES

FALCON GAUGE TACHOMETERS



Falcon Gauge Tachometers feature both clockwise and standard pointer type configurations. Falcon Gauge Universal Tachometers can be used for both point and Ducati ignitions.

| Size | Description | Range | Part No. | Price |
|--------|---|----------------------------|----------|-------|
| 3 1/8" | Falcon Gauge Clockwise Tachometer | 2250-2375 RPM cruise range | 10-02273 | . |
| 2" | Falcon Gauge Standard Pointer Type Tachometer | Ducati Ignition 0-8000 RPM | 10-00831 | . |
| 2" | Falcon Gauge Standard Pointer Type Tachometer | Universal 0-8000 RPM | 10-01615 | . |
| 2 1/4" | Falcon Gauge Standard Pointer Type Tachometer | Ducati Ignition 0-8000 RPM | 10-00818 | . |
| 2 1/4" | Falcon Gauge Standard Pointer Type Tachometer | Universal 0-8000 RPM | 10-00816 | . |
| 3 1/8" | Falcon Gauge Standard Pointer Type Tachometer | Universal 0-8000 RPM | 10-00817 | . |

FALCON GAUGE CYLINDER HEAD TEMPERATURE GAUGES



Falcon Gauge Cylinder Temperature Gauges work with most 2 cycle 2 cylinder engines.



| Size | Description | Range | Part No. | Price |
|----------|---------------------------|--|----------|-------|
| 3 1/8" | Falcon Gauge CHT/CHT Dual | 100-700°F/100-700°F | 10-02280 | . |
| 3 1/8" | | 0-340°C/0-340°C | 10-02281 | . |
| 2 1/4" | | 100-700°F/100-700°F | 11-03960 | . |
| 2 1/4" | | 0-340°C/0-340°C | 10-01421 | . |
| 2" Round | Falcon Gauge CHT Single | 100-700°F/100-700°F | 10-00486 | . |
| 2" Round | | 0-340°C/0-340°C | 10-01416 | . |
| 3 1/8" | Falcon Gauge CHT Single | 100-700°F | 10-02283 | . |
| 3 1/8" | | 0-340°C | 10-02284 | . |
| 2 1/4" | | 100-700°F | 11-03958 | . |
| 2 1/4" | | 0-340°C | 11-03959 | . |
| 2" Round | | 100-700°F | 10-01412 | . |
| 2" Round | | 0-340°C | 10-01413 | . |
| 14mm | "J" Probe | 100-700°F | 10-01437 | . |
| 10mm | Falcon Gauge CHT Sender | 10mm dia. Ring 4 feet Metal Shield Wire | 10-01438 | . |
| 12mm | | 12mm dia. Ring 4 feet Metal Shield Wire | 10-02286 | . |
| 14mm | | 14mm dia. Ring 4 feet Metal Shield Wire | 10-02287 | . |
| 18mm | | 18mm dia. Ring 4 feet Metal Shield Wire | 10-02288 | . |



FALCON GAUGE FUEL QUANTITY INDICATOR

Falcon Gauge Fuel Quantity sender is an electronic capacity type. This sender is bendable and highly accurate with steady linear reading characteristics.

The 5V output senders can also be used with other brand 5V input gauges and EFIS systems. The 5V input gauges are available in single and dual range, with or without low level warning lights. The analog gauges with warning lights require the use of Falcon Gauge compatible senders, while the electronic type only require regular senders.

| Description | Model No. | Size | Part No. | Price |
|--------------------------------|-----------|---------|----------|-------|
| Single Gauge 5V Input | F2-001-5 | 2-1/4" | 10-02264 | . |
| Dual Gauge 5V Input | F2-002-5 | 2 1/4" | 10-02265 | . |
| Single Gauge 5V Input | FR-001-5 | 2" Rnd. | 10-03873 | . |
| Dual Gauge 5V Input | FR-002-5 | 2" Rnd. | 10-03874 | . |
| 12" Bendable Sender, 5V Output | FP-012-5 | 12" | 10-03419 | . |
| 24" Bendable Sender, 5V Output | FP-024-5 | 24" | 10-03421 | . |
| Single Gauge 185Ω Input | FR-001 | 2" Rnd. | 10-02266 | . |
| 12" Bendable Sender 185Ω Input | FP-012 | 12" | 10-02267 | . |
| 24" Bendable Sender 185Ω Input | FP-024 | 24" | 10-02268 | . |

FALCON ENGINE GAUGE EXTENSION CABLES

| Description | Part No. | Price |
|----------------------|----------|-------|
| 2 Conductor, 4 Feet | 10-02339 | . |
| 4 Conductor, 4 Feet | 10-02340 | . |
| 2 Conductor, 6 Feet | 10-02341 | . |
| 4 Conductor, 6 Feet | 10-02342 | . |
| 2 Conductor, 8 Feet | 10-02344 | . |
| 4 Conductor, 8 Feet | 10-02345 | . |
| 2 Conductor, 10 Feet | 10-02346 | . |
| 4 Conductor, 10 Feet | 10-02347 | . |

FALCON GAUGE EXHAUST GAS TEMPERATURE GAUGES



Falcon Gauge Exhaust Temperature Gauges work with most 2 cycle 2 cylinder engines.

| Size | Description | Range | Part No. | Price | |
|----------|----------------|--|------------|----------|---|
| 3 1/8" | EGT / EGT Dual | 700-1700°F/700-1700°F | 10-02290 | . | |
| 3 1/8" | | 400-900°C/400-900°C | 10-02291 | . | |
| 2 1/4" | | 700-1700°F/700-1700°F | 10-00487 | . | |
| 2 1/4" | | 400-900°C/400-900°C | 10-02292 | . | |
| 2" Round | | 700-1700°F/700-1700°F | 10-01453 | . | |
| 2" Round | | 400-900°C/400-900°C | 10-01454 | . | |
| 3 1/8" | | EGT Single | 400-900°F | 10-02289 | . |
| 3 1/8" | | | 700-1700°C | 10-02293 | . |
| 2 1/4" | | | 400-900°F | 10-01457 | . |
| 2 1/4" | | | 700-1700°C | 10-01458 | . |
| 2" Round | 400-900°F | | 10-01449 | . | |
| 2" Round | 700-1700°C | | 10-01458 | . | |
| 8X1.0mm | EGT Sender | 8x1.0mm Screw-in Style 4 feet Metal Shield Wire | 10-00489 | . | |
| Clamp | | 1"-1-3/4" Clamp Style 4 feet Metal Shield Wire | 10-02294 | . | |
| Clamp | | 1"-2.5" Clamp Style 4 feet Metal Shield Wire | 10-00488 | . | |



FALCON GAUGE COMBINATION GAUGES

Falcon Gauge Temperature Gauges work with most 2 cycle 2 cylinder engines.

| Size | Description | Range | Part No. | Price |
|----------|----------------------------|---|----------|-------|
| 3 1/8" | Falcon Gauge CHT/EGT Dual | 100-700°F/700-1700°F | 10-02295 | . |
| 3 1/8" | | 0-340°C/400-900°C | 10-02296 | . |
| 3 1/8" | Falcon Gauge EGT/TACH Dual | 700-1700°F/0-8000 RPM for both Ducati & point ignition | 10-02297 | . |
| 3 1/8" | | 400-900°C/0-8000 RPM for both Ducati & point ignition | 10-02298 | . |
| 3 1/8" | | 100-700°F/700-1700°F | 10-02314 | . |
| 2-1/4" | Falcon Gauge EGT/CHT Gauge | 100-700°F / 700-1700°F | 10-01404 | . |
| 2-1/4" | | 0-340°C / 400-900°C | 10-01405 | . |
| 2 1/4" | Falcon Gauge CHT/EGT Dual | 0-340°C/400-900°C | 10-02315 | . |
| 2 1/4" | | 0-340°C/0-8000 RPM | 10-02316 | . |
| 2 1/4" | Falcon Gauge EGT/TACH Dual | 100-700°F/0-8000 RPM for both Ducati & point ignition | 10-02317 | . |
| 2 1/4" | | 0-340°C/0-8000 RPM for both Ducati & point ignition | 10-02318 | . |
| 2" Round | Falcon Gauge CHT/EGT Dual | 100-700°F/700-1700°F | 10-01400 | . |
| 2" Round | | 0-340°C/400-900°C | 10-01401 | . |



FALCON GAUGE WATER TEMPERATURE / OIL PRESSURE GAUGES

Falcon Gauge Water Temperature Gauge for Water Cooling Engines.

| Description | Model No. | Size | Range | Part No. | Price |
|----------------------------------|-----------|----------|------------------------|----------|-------|
| Water Temperature Gauge | WT-001 | 2-1/4" | 100-260°F/ 40-120°C | 10-02320 | . |
| Water Temperature Gauge | WT-001R | 2" Round | 100-260°F/ 40-120°C | 10-02321 | . |
| Oil Temperature Gauge | OT-001R | 2" Round | ---- | 10-03404 | . |
| Oil Pressure / Temperature Gauge | OP-002R | 2" Round | 100-260°F / 80PSI | 10-02337 | . |
| Oil Pressure Gauge | OP-001R | 2" Round | ---- | 10-03402 | . |
| Oil Temperature Gauge | OT-001 | 2 1/4" | ---- | 10-03403 | . |
| Gauge Oil Pressure Gauge | OP-001 | 2 1/4" | ---- | 10-03405 | . |
| Oil Pressure / Temperature Gauge | OP-002 | 2 1/4" | 100-260°F / 80PSI | 10-02338 | . |
| 1/8" NPT Oil Temperature Sender | OTS-001 | --- | ---- | 10-03406 | . |
| Oil Temperature Sender | OTS-002 | --- | ---- | 10-03407 | . |

IN

MICRO - 1000 TACHS - FUEL MIZER



FUEL MIZER FUEL FLOW GAUGE

The Fuel Miser instrument, is a fuel flow gauge that is far more accurate than typical capacitance type gauges. This kit includes mounting bracket, reducer fittings and clamps and fits a 2" panel hole. This gauge is backlit and accurately measures the actual flow of fuel through the transducer and can handle a fuel flow rate of up to 45 gallons per hour. The turbine operates by means of a stainless steel shaft mounted in sapphire bearings. The transducer measures the turbine rotation by means of an infra red light which sends a signal back to the instrument. The gauge itself is menu driven and includes an audio and visual alarm that sends a signal when remaining fuel has dropped below a level that the user presets. In addition to displaying the remaining volume of fuel, this instrument displays the current fuel burn rate, the amount of fuel consumed on the current trip as well as the total amount of fuel consumed and can be incrementally adjusted for partial refueling. The gauge can be calibrated to measure in US gallons, imperial gallons, and liters. In the unlikely event that the turbine would malfunction it is fail-safe in that it will not retard fuel flow. The Fuel Miser cannot be used on an engine which has a return fuel line. Not STC'd. For experimental only and not for certified aircraft. Fuel Miser is furnished with installation manual and instructions P/N 10-00220

Note: Factory Warranty is 6 months from date of purchase.

FUEL FUNCTION:

Flow Range: Auto ranging 2.5–160 Liters/hour
0.5–43 U.S. gallons/hour
or 0.4–36 Imperial gallons/hour
Fuel Remaining: 0.999 selected units, non-volatile and resettable.

ALARM FUNCTION:

Fuel Remain alarm: Operates over full range
Alarm Signaling: Audible and visual

LOG FUNCTION:

Total Fuel Log: Auto ranging 0–999 liters, US gallons, or Imperial gallons, non-volatile & resettable
Trip Fuel Log: Auto ranging 0–999 liters, US gallons, or Imperial gallons, non-volatile & resettable

Features:

Mounting: Flush round bezel
Lighting: Red diffused lighting of keys and display
Units: Selectable in Liters, US gal., or Imperial gal.
Calibration: Front Panel adjustable
Current Drain: 70 mA (max.)



0-10,000 RPM DIGITAL TACH & HOURMETER

Records up to 9999 hours. May be either front or rear mounted. Uses an 8-yr internal battery. With 15' lead and rear-mount parts

TH200..... P/N 10-03424.....
TH201..... P/N 10-01630.....
TH202..... P/N 10-03425.....

TH201 App: Electronic Ignition - (1) spark fires per crankshaft revolution.
TH202 App: 4 Cycle Engines - (1) spark for every 2 crankshaft revolutions.
TH200 App: Ducati CDI - Twin Cyl. engines. Spark fires every 180° of crank shaft revolution.

TH200 SPECS

Model for twin cylinder engines with a spark firing every 180° of the engine crankshaft. Jet Skis generally use 1C. Exception: 3 cyl. Jet Skis generally use our special '2X' model Multi 4 cyl. = 1c wrapped around coil wire.

TH201 SPECS

Standard Model, used on engines with one spark firing on each revolution of the crankshaft. 1 cylinder, 2 stroke (reads 1x/revolution) Honda engines 4-stroke w/electronic ignition & nopoints. 2C can also be used w/ 2cyl. engine.

TH202 SPECS

Model for engines which have a spark for every 2 revolutions of the engine crankshaft such as those with a distributor w/points driven from a camshaft. Kohler 'K' series is the only Kohler model firing this way. True 4-stroke with points & distributor, NOT the firing on the exhaust stroke.



FALCON GAUGE 2 INCH TACHOMETER

0-8000 RPM TOP-SWEEP TACHS
For Single Ignition

2" Round Case (shown) P/N 10-01615.....
2-1/4" aircraft-style case P/N 10-00816.....

For Dual Ignitions

2-1/4" aircraft-style case..... P/N 10-00818.....
2" round case (Incl. Backlight)..... P/N 10-00831.....



FALCON GAUGE 3-1/8 INCH TACHOMETER

0-8000 RPM TOP-SWEEP TACH
For Ducati Ignitions

3-1/8" aircraft-style case P/N 10-00817.....

TACHOMETER APPLICATION CHART

| ENGINE | PART NO. FULL SWEEP | PART NO. TOP SWEEP | PART NO. DIGITAL |
|----------------------------|---------------------|--------------------|------------------|
| ROTAX 277 & 377 | TA130 RND | TA001 | TH201 |
| | TA131 SQ | TA006 | |
| | | TA023 | |
| ROTAX 447 Points Ignition | TA130 RND | TA001 | TH201 |
| | TA131 SQ | TA006 | |
| | | TA023 | |
| ROTAX 503 Points Ignition | TA130 RND | TA001 | TH201 |
| | TA131 SQ | TA006 | |
| | | TA023 | |
| ROTAX 532 | TA130 RND | TA001 | TH201 |
| | TA131 SQ | TA006 | |
| | | TA023 | |
| ROTAX 447 Ducatti Ignition | TA140 RND | TA020 | TH200 |
| | TA141 SQ | TA021 | |
| | | TA023 | |
| ROTAX 503 Ducatti Ignition | TA140 RND | TA020 | TH200 |
| | TA141 SQ | TA021 | |
| | | TA023 | |
| ROTAX 582 | TA140 RND | TA020 | TH200 |
| | TA141 SQ | TA021 | |
| | | TA023 | |
| ROTAX 618 | TA140 RND | TA020 | TH200 |
| | TA141 SQ | TA021 | |
| | | TA023 | |

| ENGINE | PART NO. FULL SWEEP | PART NO. TOP SWEEP | PART NO. DIGITAL |
|---|---------------------|--------------------|------------------|
| ROTAX 912 & 914 | TA150 RND | TA001 | TH200 |
| | TA151 SQ | | |
| HIRTH (all models) | TA130 RND | TA001 | TH201 |
| | TA131 SQ | TA006 | |
| | | TA023 | |
| ZENOAH (all models) | TA130 RND | TA001 | N/A |
| | TA131 SQ | TA006 | |
| | | TA023 | |
| KAWASKI (all models) | TA130 RND | TA001 | N/A |
| | TA131 SQ | TA006 | |
| | | TA023 | |
| CUYUNA (all models) | TA130 RND | TA001 | N/A |
| | TA131 SQ | TA006 | |
| | | TA023 | |
| LYCOMING (all known) | TA160* RND | | |
| | TA161* SQ | | |
| CONTINENTAL (all known) | TA160* RND | | |
| | TA161* SQ | | |
| VOLKSWAGEN (Stock Points or Slick Mags) | TA130 RND | | TH202 |
| | TA131 SQ | | |

* Requires Pulse Generator Kit.....P/N PG001.....

IN

MICROFLIGHT GAUGES

MICRO-1000 ENGINE GAUGES

Senders and probes are not included unless specifically noted. See over half of the page for senders, probes, and other accessories. 2" gauges are round. 2 1/4" gauges are square.



OIL PRESSURE ELECTRIC

MICRO-1000 oil pressure electric includes 1/8 NPT SDR.
 2 1/4" OP031..... P/N 10-01574
 2" OP030..... P/N 10-01572



OIL TEMPERATURE ELECTRIC

Includes 1/8 NPT Sender
 2 1/4" OT031..... P/N 10-01588
 2" OT030..... P/N 10-01586



HOUR METER

AC or DC Powered
 2 1/4" HO031..... P/N 10-01507
 2" HO030..... P/N 10-01506



DC VOLTMETER

2 1/4" VM031..... P/N 10-01641
 2" VM030..... P/N 10-01639



WATER TEMPERATURE

Includes 1/8 NPT Sender. All electrical gauges have air core movements.
 2 1/4" WT031..... P/N 10-01652
 2" WT030..... P/N 10-01650



AMMETER ±30 AMPS

2 1/4" AG031..... P/N 10-01319
 2" AG030..... P/N 10-01317

MICROFLIGHT SENDERS & ACCESSORIES



100# PRESSURE SENDER

HAS A 1/8" NPTF fitting.
 OP030.2..... P/N 10-01573.....



TUBING KIT

Nylon tubing with brass fittings.
 OP032.1..... P/N 10-01575.....
 OP032.2..... P/N 10-01576.....



KEY WEST REGULATOR

Advanced regulator/rectifier circuit provides steady 13.8 volt output regardless of load. Maximum output 220 watts, 16 amps. 10v signal pulse output for digital or MaxPac® tachs. Accepts AC input from 15 to 100 volts. Can be used with AC strobe. **Features:** * Extremely clean filtered DC output * Electronics designed to deliver 16 amps producing 220 watts * Efficiency: No "consumer" or "dummy" load required for proper operation * A beautiful and rugged lightweight package weighs just 16 ounces and is 3.5 x 2.5 x 1 inch * Protection from the environment: complete epoxy encapsulation to insure all-season operation * Ease of installation: crimp type ring terminals and wiring schematics provided with every unit P/N 11-03168.....



TEMPERATURE SENDERS

Single-station senders for water and oil temperature gauges.
 WT030.2..... P/N 10-01384.....
 OT030.2..... P/N 10-01587.....



SENDER ADAPTERS

Electric sender adapter. 3/8" NPT
 ADP04..... P/N 10-01311.....



METRIC ADAPTER

ADP06..... P/N 10-01313.....
 ADP07..... P/N 10-01314.....
 ADP08..... P/N 10-01315.....



FLOAT-TYPE FUEL PROBES

6-23" Probe. Adjustable, 6-23"; 240-33 ohms standard: 5-hole ASME pattern. Requires mounting kit. FGP031..... P/N 10-01489.....



UNIVERSAL PROBE MOUNT

Works well with plastic and other tank. Includes threaded attachment ring, gasket, and hardware. Standard 5-hole SAE pattern. FMK01..... P/N 10-01501.....



COLOR TINT LAMPS

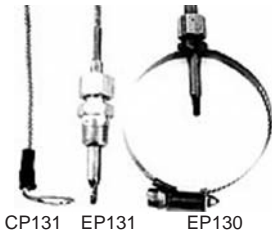
Color tint lamp boots. Set of Boots. Changes your instrument backlighting to red for night flying. LB001..... P/N 10-01556.....

APPLICATION NOTE: Most current production Rotax® engines require 1/8NPT temperature and pressure senders.

IN

MICROFLIGHT GAUGES

MICRO-1000 PYROMETERS & PROBES



CP131 EP131 EP130

Superior to any other type of pyrometer available. Unlike competing brands, these units are temperature compensated. That is, when the ambient temperature changes, MICRO-1000 pyrometers still read the same. And we guarantee that, when properly installed, these pyrometers will be accurate within 2%. Like other MICRO-1000 gauges, these units come with our standard 2-year warranty. Order gauges, probes, and extension leads separately.

NOTE: MICRO-1000 pyrometers are not compatible with other thermocouple probes. Order Micro-1000 Probes.

- 2% Accuracy • Easy-to-Read Dial • Backlighting • Standard
- Temperature Compensated • Shock & Vibration Resistant
- Designed & Built for Aircraft

MICRO-1000 EGT PROBES

- Weld-on Boss Type EP131 P/N 10-01477
- Clamp-on Type EP130..... P/N 10-01471
- Adjustable 8mm EP130R..... P/N 10-01475
- (for all Rotax w/factory Boss)
- Adjustable 1/8NPT EP132 P/N 10-01478
- Adjustable 1/4NPT EP133 P/N 10-01479

MICRO-1000 CHT PROBES

- 14mm CP130 P/N 10-00823
- 18mm CP131 P/N 10-01440
- 10mm CP132 P/N 10-01441
- 7-ft. CHT - Ext. Id. CPE130.07..... P/N 10-01442
- 15-ft. CHT - Ext. Id. CPE130.15..... P/N 10-01443
- 7-ft. EGT - Ext. Id. EPE130.07..... P/N 10-01480
- 15-ft. EGT - Ext. Id. EPE130.15..... P/N 10-01481

The CHT probe (above left) is a high quality Chrome/Constantan "E" type. A more expensive material than that of the more commonly found "J" type, the "E" type probe produces much greater accuracy at lower temperatures (less than 600°F). Extension wire is of the same material as the thermocouple to preserve the accuracy and temperature compensation qualities. NOTE: The 15' extension leads may be shortened up to seven feet. The EGT probes are high-quality Chrome/Alumel "K" types. Choose the weld-on boss type (above) for new engine installations. Choose the clamp-on type (above) to replace the existing probe. Order gauges, Micro-1000 probes and extensions separately. **Note: These are "K" type grounded probes, not for use on digital gauges. For use with Micro-1000 gauges.**

CHT

- Scaled 0-600°F
- 2-1/4" CH131..... P/N 10-01426.....
- 2" CH130..... P/N 10-01425.....

DUAL CHT

- Scaled 0-600°F
- 2-1/4" CH141..... P/N 10-01429.....
- 2" CH140..... P/N 10-01428.....

EGT

- Scaled 800-1700° F
- 2-1/4" EG131..... P/N 10-01464.....
- 2" EG130..... P/N 10-01463.....

DUAL EGT

- 2-1/4" EG141..... P/N 10-01467.....
- 2" EG140..... P/N 10-02093.....

DUAL CHT/EGT

- 2-1/4" CE141..... P/N 10-01409.....
- 2" CE140..... P/N 10-01408.....

VDO GAUGES & PROBES



CYLINDER HEAD TEMP.

- 2-1/4" ... P/N 10-01424.....
- 2" P/N 10-01423.....

0-600°F

Includes 14mm ring probe



EXHAUST GAS TEMP.

- 2-1/4" ... P/N 10-01462.....
- 2" P/N 10-01461.....

250 -1650°F

With weld-on Boss type probe



OIL PRESSURE

- 2-1/4" ... P/N 10-01570.....
- 2" P/N 10-01567.....

Includes 1/8NPT sender



OIL TEMP.

- 2-1/4" ... P/N 10-01583.....
- 2" P/N 10-01579.....

Includes 1/8NPT probe



AMMETER - 12 VDC

- 2-1/4" ... P/N 10-02335.....
- 2" P/N 10-02334.....

No shunt required



VOLTMETER-12 VDC

- 2-1/4" ... P/N 10-01638.....
- 2" P/N 10-01637.....

With color arc



FUEL LEVEL-0-240 OHM

- 2-1/4" ... P/N 10-01485.....
- 2" P/N 10-00825.....

Order only P/N 10-00826 probes for this instrument.



WATER TEMP.

- 2-1/4" ... P/N 10-01649.....
- 2" P/N 10-01646.....

Includes 1/8NPT probe



HOURLY METER-12VDC

- 2-1/4" ... P/N 10-01505.....
- 2" P/N 10-01504.....

With minute hand



FLUID TEMPERATURE GAUGE

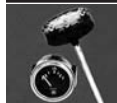
- 2" P/N 10-0180902D.....

Includes 96" capillary tubing and adapter kit.

VDO PROBES

- VDO Float Probes - 240 ohms..... P/N 10-00826.....
- Fuel Probe Mounting Ring P/N 10-01502.....
- VDO Temperature Probes - 1/8NPT
- Water Probe 1/8" NPT P/N 10-01648.....
- Oil Probe 1/8" NPT..... P/N 10-01580.....
- Oil Temp. Probe 3/8" NPT P/N 10-01582.....
- VDO CHT Probe - Type "J"
- 14mm ring type P/N 10-01439.....
- VDO EGT Probe - Type "K"
- Weld-on Boss..... P/N 10-01461.....
- Oil Pressure Sender 1/8" NPT P/N 10-01568.....

FUEL PROBE 24VOLT



The ELECTRONIC SENDING UNIT for FUEL, OIL, and POTABLE WATER tanks provides a continuous readout of the liquid level in your tank. The unit (which has no moving parts) consists of a sensor probe and an amplifier. The amplifier components, are encapsulated in an epoxy resin compound to seal out moisture and other contaminants which could affect the operation. The mounting plate assembly has the same 5 hole SAE bolt pattern mounting dimensions as the standard float sending units they replace. The meter (receiving unit) can be remotely located close by or in your dash. FUEL SENSOR PROBE (Gasoline or Diesel) - Constructed of concentric tubing. The tubes act as a capacitor that has one value in air (empty tank) and changes in value as the fuel level rises inside the probe. WATER SENSOR PROBE - The probe consists of a PVC tube with a bare stainless steel (ground) wire running along the outside and an insulated (sensor) wire through its center. The PVC tube is to hold the wires in place. The output to the meter changes as the water level rises on the sensor wire. The probes come in 12 inch increments and can be cut to any length down to the next lower increment. We prefer to build them your required size, however, for which there is no extra charge. It saves you from having to shorten and recalibrate the sender.

- Cork gasket for fuel probe kit..... P/N 10-03730
- P/N 10-03699

MICROFLIGHT GAUGES

STANDARD MICROFLIGHT ENGINE GAUGES

Standard gauges are a low cost solution for monitoring engine performance. The gauges on this and part of the next page are light-weight, inexpensive alternatives. These gauges are not temperature compensated; changes in ambient temperature will affect their readings. Unlike our MICRO-1000 gauges, they do require shock mounting. All gauges come with a 1-year warranty which covers any malfunction. Prices include probes with 4-ft. leads. Gauges leads may be extended with 18-gauge wire. "C" at end of P/N indicates temperature scale in degrees celsius.



CYLINDER HEAD TEMP.

2-1/4", 0-700°F ..P/N CH004
 2-1/4", 0-350°C ..P/N CH004C
Includes probe



EXHAUST GAS TEMP.

2-1/4",
 600-1700°FP/N EG004
 2-1/4",
 400-900°CP/N EG004C.....
Includes probe



DUAL CHT

2-1/4" ... P/N CH005
 2-1/4" ... P/N CH005C
Includes probe



DUAL EGT

2-1/4" P/N EG005
Includes probe



0-8000 RPM TACHOMETER

3-1/8" for 2-cycle engines for single
 Ignition
 Ducati Ignition... P/N TA023
For lighting coil operation
No power required.



0-8000 RPM TACHOMETER

2-1/4" for 2-Stroke Engines
 Single Ignition (all)..P/N TA006.....
 Ducati Ignition.....P/N TA021
For lighting coil operation
No power required.



CHT/EGT COMBINATION

2-1/4"P/N CE003
 2-1/4"P/N CE003C
Includes probe



CHT PROBE

"J" type sending unit with 4-ft.
 lead.
 14 MM P/N CP001
 10 mm P/N CP002.....



CYLINDER HEAD TEMP.

2", 0-700°FP/N CH001
 2", 0-350°CP/N CH001C.....
Includes probe



EXHAUST GAS TEMP.

2", 600-1700°F . P/N EG001
 2", 400-900°C ... P/N EG001C.....
700-1700°F
Includes probe



CHT/EGT COMBINATION

2"P/N CE001
 2"P/N CE001C
Includes probes



EGT PROBE

"K" type sending unit with 4-ft.
 lead.
 P/N EP001
 8 mm threaded EGT Probe
 (for new 2-stroke Rotax)
 P/N EP002



DUAL CHT

2" P/N CH002
 2" P/N CH002C
Includes probes



DUAL EGT

2"P/N EG002
 2"P/N EG002C
Includes probes



DUAL TACH/EGT

2" round gauge
 Tachometer – Universal for single or
 dual ignition.
 EGT range: 700-1700°F
 EGT probe (clamp type) sender
 included.
 P/N ET002R



0-8000 RPM TACHOMETER

2" for 2-Stroke Engines
 Single Ignition (all)
 P/N TA001
 Ducati Ignition.... P/N TA020
For lighting coil operation

IN

AIRCRAFT DIGITAL INSTRUMENTS



ADI RH60-A TACHOMETER/HOUR METER GAUGE

The RH60-A RPM/Engine hours/Elapsed time gauge is a four digit digital display of engine RPM, total engine hours and elapsed time. The RH60-A works with any engine and can be driven from a wide range of tacho signal frequencies and amplitudes. Front panel calibration is provided for spot-on accuracy to +/- 1RPM. A separate engine hours countdown alarm can be set to remind you of upcoming oil change or 100 hr maintenance due. A high RPM alarm can be set, and the RH60-A keeps track of the maximum RPM seen. When activated, the RH60-A built-in 85dB alarm will sound and the display will flash. Five levels of backlighting can be selected from, and thirteen levels of display dampening. All calibrations, alarm values and max RPM are saved to a nonvolatile memory. Terminal C can be programmed as an External Alarm output if so desired. P/N 10-02879.....



ADI MAP60-A MANIFOLD PRESSURE GAUGE

The MAP60-A, Manifold Absolute Pressure Gauge provides an accurate digital display of your engine's intake manifold absolute pressure. Commonly found and used in high performance aircraft with constant speed propellers, and/or with boost devices such as super and turbochargers. The MAP60-A is set up to use the UMA 5-60 InHg absolute pressure transducer. The display will show manifold pressure in tenth of an inch increments, from 5.0 to 60.0 InHg. The LOW and HIGH user settable alarms can be set over the entire range. The HIGH alarm in this case might be set to alert the pilot to a "OVERBOOST" condition. When activated the built-in 85dB alarm will sound and the display will flash. The External Alarm output would most likely be used to activate an annunciator/warning "OVERBOOST" condition light. Five levels of backlighting can be selected and then all setup, and alarm values will be saved to a nonvolatile memory. P/N 10-02872.....



ADI DIGITAL PRESSURE GAUGES

The P60-A DIGITAL PRESSURE GAUGE, can be used to display ENGINE OIL(AO), DRIVE OIL(ADO), WATER(AW), or FUEL(AF) pressures in PSI or Bars. It has built-in calibration curves for most popular senders manufactured by VDO, Teleflex, and Stewart-Warner (sender not included). The sender type is easily selected with the front panel keys. LOW and HIGH pressure alarms can be set over the entire range of the instrument/sender. When activated the P60-A built-in 85dB alarm will sound and the display will flash.

Five different levels of internal backlighting can be selected, and then all setup, calibrations, constants, alarm values, sender type, and lighting level are all saved to a nonvolatile memory. Terminal "C" comes Factory preset to use as an External Alarm signal. This 5V,10mA signal voltage could be used in conjunction with the optional ER-1A electronic relay to control a backup/secondary piece of equipment (electric water pump / fuel pump) or simply used to illuminate a panel warning light. NOTE: Alarm functions must be activated or enabled to utilize them.

Engine Oil Pressure Gauge..... P/N 10-02874..... Drive Oil Pressure Gauge..... P/N 10-02875.....
Water/Coolant Pressure Gauge P/N 10-02876..... Fuel Pressure Gauge P/N 10-02877.....
Hydraulic Pressure Gauge (with sender)..... P/N 10-02878.....



ADI DIGITAL TEMPERATURE GAUGES

The T60-A DIGITAL TEMPERATURE GAUGE provides an accurate digital display for Engine Oil(AO), Drive Oil(ADO), or Engine Water(AW) TEMPERATURES in either degrees F or C. It has built-in calibration curves for most popular senders manufactured by VDO, Teleflex, Stewart-Warner, and others(senders not included). Sender type is easily selected using the front panel keys. LOW and HIGH temperature alarm limits can be set over the entire range of the instrument/sender. When activated, the built-in 85dB alarm will sound and the display will flash. The alarm can be enabled or disabled with a single key press. Five different levels of internal backlighting can be selected. Then all setup, calibrations, constants, alarm values, sender type, and lighting level selected are all saved to a nonvolatile memory. Terminal "C" can be programmed as an External Alarm output.

Engine Oil temperature Gauge..... P/N 10-02881.....
Drive Oil Temperature Gauge..... P/N 10-02882..... Water/coolant temperature Gauge ... P/N 10-02883.....



The PY60-A DIGITAL EGT/CHT GAUGE works with both J and K type thermocouples to provide accurate monitoring of your engine's cylinder head or exhaust gas temperatures, from -4-2012F (-20-1100C). LOW and HIGH temperature alarm limits can be set from 32-2012F (0-1100C). When activated, the built-in 85dB alarm will sound and the display will flash. The highest temperature seen is automatically saved to a nonvolatile memory, and can be displayed or reset at any time. Five different levels of internal backlighting can be selected, then all setup, calibrations, and constants are also saved to nonvolatile memory.

Exhaust CHT Gauge P/N 10-02884..... Exhaust EGT Gauge P/N 10-02885.....



ADI DIGITAL FUEL GAUGES

The FU60-A DIGITAL FUEL QTY / FUEL FLOW GAUGE provides a highly accurate digital display of fuel remaining, trip fuel, total fuel used, fuel flow consumption rate, and "Time Remaining" at the current rate of flow. Fuel can be displayed with a resolution of 0.1 liters or gallons or as a percentage (0-100%). The FU60-A "learns" your tank and fuel sender characteristics, and is accurate with any tank shape. It is compatible with all popular resistive fuel senders, both American and European. LOW and HIGH fuel level alarm limits can be selected, then all setup, calibrations, constants, alarm values and sender type are saved to a nonvolatile memory. The FU60-A output signal on Terminal "C" may be programmed to activate an External Alarm (panel warning light)(see ACCESSORIES)... or possibly a fuel transfer pump. Should the desired "fuel transfer" mode be selected, (tFER) the pump would turn ON at the user selected LOW limit alarm setting... and OFF when the HIGH limit alarm set point is reached. The FU60-A's display will also flash during pump operation. The F60-A DIGITAL FUEL GAUGE provides an accurate digital display of fuel remaining, trip fuel and total fuel used. Fuel remaining can be displayed up to 6550 liters or gallons, or as a percentage (0-100%) with user selectable display dampening to help prevent unwanted fluctuations in rough air. The gauge display will flash during the pump's operation.

Fuel Gauge F-60-A (pictured)..... P/N 10-02868..... Fuel Flow Gauge FU-60-A..... P/N 10-02869.....



ADI V60-A VOLTMETER

The V55-A Battery/System Voltage Monitor gauge provides an accurate low cost digital instrument for battery/ system voltages between 9.5-33.0 VDC. You can set independent LOW and HIGH voltage alarms. The V55-A built-in 85dB alarm will sound and the display will flash. Five levels of backlighting can be selected and then all setup, calibration constants and alarm values are saved to nonvolatile memory. Terminal C can be selected and used as an External Alarm output signal. (5V, 10mA max). P/N 10-02886.....



ADI AM60-A DIGITAL AMMETER

The AM60-A Digital Ammeter provides an accurate low cost digital instrument for monitoring your aircraft's electrical load (amps), and is programmable to use a 5.0 to 900 amp shunt. (available separately). Up to 90.0 amps the AM60-A can display your load current in tenths of an amp. Above 90 amps current is displayed in full amps. The AM60-A can be powered by any voltage between 9.5 and 33.0 Volts. Five levels of backlighting can be selected using the front panel keys and backlighting can be turned ON/OFF remotely. All setup, calibrations, and constants are saved to nonvolatile memory. P/N 10-02864.....

Ammeter With 150A Shunt..... P/N 10-02932..... ADI AM60 85AMP Shunt only P/N 10-02893.....



ADI CT60-A CLOCK / TIMER

The CT60-A Clock/Timer is an accurate 12/24 hour format clock with a resettable down-counting timer with eight time-of-day settable alarms. The clock is Factory calibrated, but can be adjusted with the front panel switches and calibrations saved to nonvolatile memory. The clock is accurate to within five seconds per day, and is Factory calibrate to within one second per day. The CT60-A has a large LCD display, yet draws only 0.018 amps. Five levels of backlighting can be selected and all setup, calibration constants and alarm values are saved in nonvolatile memory. P/N 10-02865.....

ADI-CRUZ PRO DIGITAL ACCESSORIES

| Description | Part No. | Price | Description | Part No. | Price |
|---------------------------------------|----------|-------|-------------------------------|----------|-------|
| 6061 8 Hole, Aluminum Gauge Cluster | 10-02890 | . | Electronic Relay - ER-1A | 10-02887 | . |
| 6061 6 Hole, Aluminum Gauge Cluster | 10-02889 | . | DC Ammeter Shunts | 10-02893 | . |
| Hydraulic Pressure Transducer TDM2500 | 10-02888 | . | Type K Thermocouple AD-2000TK | 10-02895 | . |

IN

TL ELEKTRONICS INSTRUMENTS

COMBINED ENGINE INSTRUMENT



• High performance, small dimensions & weight - an ideal instrument suitable for all types of engines • Set value limits at 2 levels (Warning & Alarm) for all measured values. In case these values are exceeded the instrument will warn you in time of any possible engine damage • Configure display to show temperature, pressure, rotations, battery voltage, engine hours, OAT, fuel consumption as you wish using the configuration program delivered with the instrument. Size: 3-1/8"

| | |
|--|--------------------|
| Digital eng. instr. for combine engine values measuring | P/N 10-00893 |
| Thermocouple probe for EGT (type K) M8x1 screw type - for all engines | P/N 10-00894 |
| Thermocouple probe for CHT (type J) 12mm hole - for all engines | P/N 10-00895 |
| Thermocouple probe for CHT (type J) 14mm hole - for all engines | P/N 10-00896 |
| Thermocouple probe for CHT (type J) 18mm hole - for all engines | P/N 10-00897 |
| Oil or water temp. sender (0 to 110°C/230°F) for Rotax 2-stroke | P/N 10-00898 |
| Oil or water temp. sender (0 to 150°C/300°F) for Rotax 4-stroke | P/N 10-00899 |
| Passive oil pressure sender (0 to 145 PSI, 1/8"-NPT) for all engines | P/N 10-00904 |
| Active oil pressure sender (0 to 145 PSI, 1/8"-NPT) for all engines | P/N 10-00905 |
| Metal hi-quality flow sensor (0-30 gph)-all engines | P/N 10-00906 |
| Passive speed sensor-all eng. (inductive sensor) | P/N 10-00907 |
| Active speed sensor-all engines (hall effect 3-wire sensor) 5-30V power supply req. | P/N 10-00909 |
| Active speed sensor-all engines (hall effect 3-wire sensor) 5V. | P/N 10-00910 |

FUEL COMPUTER



• Measure immediate fuel flow of your engine in liters/hour or liters/100 km and average fuel consumption • Set limit values at 2 levels (Warning & Alarm), for all measured values. In case these values are exceeded, the instrument will warn you prior possible failure or damage of the engine • Display at any time the fuel levels in the left, right or both fuel tanks. Size: 2-1/4"

| | |
|--|--------------------|
| Fuel computer without fuel-flow sensor | P/N 10-00870 |
| Metal high-quality flow sensor for all engines ... | P/N 10-00871 |
| Passive resistive fuel level sender (all aircraft) | P/N 10-00872 |
| Fuel Qty Sender Float (240-30 OHM) | P/N 10-00056 |
| Active cap. fuel level sender (all aircraft) | P/N 10-00798 |
| Active fuel pressure sender (all aircraft) | P/N 10-00873 |

INTERCOM



• Intelligently managed voice activators (VOX) • Listen to your favorite music e.g. from CD/cassette directly to your headphones or attach your intercom to your mobile telephone • Control your intercom digitally using keys & displays • Record and play pre-takeoff or landing checklist directly to your headphones (checklist can easily be created on your PC and recorded into the intercom) • In case of accident simply switch on emergency broadcast, which will be re-played at short intervals and transmitted using a RDST w/pre-recorded message. Size: 2-1/4"

| | |
|---|--------------------|
| Intercom w/voice alarm, checklist & digital voice rec. | P/N 10-00867 |
| Connection cable for mobile phone | P/N 10-00868 |
| Connection cable to VHF airband-transceiver ... | P/N 10-00869 |

ALTIMETER WITH ENCODER



• 2 instruments for the price of one - altimeter & mode C encoder for all types of transponder • Set value limits at 2 levels (Warning & Alarm) for multiples • Display QNH or QFE levels with the option of setting zero • The instrument will provide a warning if an insufficient oxygen altitude is reached • The instrument will signal low altitude, e.g. after opening of undercarriage, MDA, approach. Size: 2-1/4"

P/N 10-00891

VOLT-AMPERE METER



• First volt-ampere meter with 3-phase measurement of voltage, current & frequency • Connect up to 3 circuits for measuring current and voltage, for example instrument panel circuit, light circuit and flash and other circuit • Check the activity of the three-phase voltage converter for an artificial horizon using your voltmeter with the option of checking 400 Hz frequency • Set value limits at two levels (Warning and Alarm) for minimum & maximum voltage and current. Set the form of display either by gradual switching of voltage and current on the display at intervals chosen by you (SCAN function) or by displaying lowest or highest current-voltage. Size: 2-1/4"

| | |
|---|--------------------|
| Digital volt-ampere meter & frequency meter | P/N 10-00883 |
| Current shunt sensor for measuring to 50amps (for all aircraft) | P/N 10-00884 |

ACOUSTIC VERTICAL SPEED INDICATOR



TL-3624 is suitable for most aircraft whether they be airplanes or whether they be gliders. • Measure climb & descent rate with high level of accuracy using the integrated or averaging memory with selectable averaging time • Set value limits at 2 levels (Warning & Alarm) for climb and descent rate • Use acoustic climb & descent rate signals using an external loudspeaker. Size: 2-1/4"

P/N 10-00892

RPM & ENGINE HOURS



• Measure rotations & engine hours with the option to trigger the counting from a certain engine rotation rate (by your choice) so that you can divide taxing from flight time • Set value limits at 2 levels (Warning & Alarm) for all measured values. In case these values are exceeded the instrument will warn you in time of any possible engine damage • Several separate users with pilot/student option - suitable for several owners or in flight schools, where the instructor selects the student and the time will be measured only against his/her name. Size: 2-1/4"

| | |
|---|--------------------|
| Digital RPM w/ engine-clock & stop-watch | P/N 10-00886 |
| Digital RPM w/ engine-clock, stop-watch & internal speed sensor | P/N 10-00887 |

THERMOMETER



• Use the thermometer to measure up to 4 temperatures and oil pressure • Use the automatic choke function using the modeler's servo regulated by thermometer according to any of the measured temperatures e.g. CHT • Set value limits at 2 levels (Warning and Alarm) for all measured values. In case these values are exceeded the instrument will warn you at time of any possible engine damage • Set the form of display either by gradual switching of measured temperatures on the display at intervals selected by you (SCAN function) or displaying the closest temperatures to the limit values that you have set. Size: 2-1/4"

| | |
|---|--------------------|
| Therm. for 4 temp. & press. w/choke control | P/N 10-00874 |
| Thermocouple probe for CHT (type J) 12mm hole - for all engines | P/N 10-00876 |
| Thermocouple probe for CHT (type J) 14mm hole - for all engines | P/N 10-00877 |
| Oil or water temp. sender (0 to 150°C/300°F) for Rotax 4-stroke | P/N 10-00879 |

G ACCELEROMETER



• Using the accelerometer measure the operational values of your aircraft on the vertical axis • Set value limits at 2 levels (Warning and Alarm) for all measured values. In case these values are exceeded the instrument will warn you in time of any possible damage to the aircraft • Always be informed of values approaching the limits, which could result in damage to the aircraft • Always be aware of exceeded values from the previous flight after switching on the instrument • Start of logging is carried out by a switch on the undercarriage or by an internal / external pressure sensor on attaining your selected speed. Size: 2-1/4"

| | |
|---|--------------------|
| Digital accelerometer | P/N 10-00889 |
| Digital accelerometer w/ internal airspeed sens. | P/N 10-00890 |

TL-3424-RAS ACCELEROMETER



The TL-3424 is complete weight acceleration management. The instrument incorporates a high-precision sensor for measuring acceleration in the vertical axis. The SAS version also incorporates a sensor for measuring the indicated airspeed, which enables the activation of memory recording. Both versions enable to utilize an undercarriage scanner that can also activate memory recording.

P/N 10-02312

TL INSTRUMENTS ARE FOR EXPERIMENTAL AIRCRAFT ONLY.

IN

AE FUEL GUARDIAN

AE FUEL GUARDIAN LOW FUEL ANNUNCIATION SYSTEM



This system gets your attention before you have to switch tanks. When the annunciator light flashes, you will know your precise fuel quantity and also the time to engine shut-down for that tank. HOW DOES IT WORK? - The optical fuel sensor is a non-contact sensor mounted in a single hole in the fuel tank. It operates by bouncing a beam of light into the sensors lens. If it is reflected back into the sensor, there is no liquid present. If it is not reflected back, it is dissipated into the liquid media. The sensor output is pulled down, or activated. The electronics constantly monitors the sensor outputs of both tanks. When a low fuel level is detected, the appropriate light starts to blink, getting the pilot's attention immediately. After the pilot sees the alarm, he can press the acknowledge button. This action turns the light on solid (continuous) denoting a low fuel quantity. This function of the annunciator eliminates the distracting flashing action of the lights for the pilot, yet he can still see that he has a low fuel indication.

The AE Fuel Guardian also has an audio output that can be wired into the aircraft intercom or audio system if desired. The audio beep is only present when the annunciator lights are flashing.

The AE Fuel Guardian annunciator lights can also be wired into the aircraft dimmer bus if desired for night flight. This system is 100% solid state and is compatible with 12VDC or 24VDC electrical systems. The installer sets the sensors to provide low fuel warning at whatever level is desired. System includes (2) annunciator panel lights, (2) optical sensors, (1) push button, Sensor drive and annunciator electronics enclosure, wiring, and lettering decals. For Experimental aircraft only.

Kit With One Sensor..... P/N 10-01811.....
 Kit With Two Sensor..... P/N 10-00399.....

AE AIRSPEED SWITCH & RELAY BOARD



RELAY BOARD USE: Control your Flap & Elevator Trim motors

This board allows you to use any inexpensive switch [Single Pole, Double Throw, (ON)-OFF-(ON), Spring Loaded, 3 Position] to control your flap and elevator trim motors.

You can series as many switches as you desire control your flap & elevator trim motors. Free connection diagrams for relay boards and airspeed switch for several typical systems.

AIRSPEED RELAY USE:

Flap Deployment Protection at High Airspeeds

When our relay board is used with our airspeed switch, you can protect you flaps from being actuated in the downward direction when your airspeed is too high (above the white arc). We provide the end user with easy connection diagrams for several different systems.

Automatic Speed Adjust for Elevator Trim Motors

Many have complained about the fast adjustment speed of elevator trim motors at high airspeeds. When our relay board is used with our airspeed switch, it eliminates this problem. You will have two speeds, fast for slower airspeeds, and slower for high airspeeds. The slower speed is adjusted by supplying this relay board a lower motor drive voltage.

RELAY BOARD SPECIFICATIONS

Each board includes two independent, Single Pole, Double Throw Relays

Relay contacts are protected against inductive sparking generated from switching inductive loads such as motors. For use on 12Vdc systems. Switch currents up to 10 Amps. Boards are stackable to 3 levels high for saving panel space. Mounting hardware included

AE Relay Board One..... P/N 10-01814.....
 AE Relay Board Two Staked..... P/N 10-01815.....
 AE Relay Board Three Staked..... P/N 10-01816.....
 AE Airspeed Switch & Board..... P/N 10-01817.....

AE LOW OIL LEVEL SENSOR



This sensor is a "float type" Low Oil Level Sensor that can be installed in the bottom of an oil sump using spare drain holes. When a low oil condition is sensed, a NC contact will open, indicating a low oil level. This sensor was designed for the high vibration environment of an aircraft engine.

It is also available with electronics and a flashing LED indicator. This sensor indicates a low oil level that is less than 4 quarts in a Lycoming O-360-A1A. This sensor is compatible with many engines.

This sensor package was designed to be "Fail Safe". By "Fail Safe", they mean that if you utilize this sensor in the oil drain plug position, and you forget to reconnect the sensor to the electronics after an oil change, the panel light will come on indicating a low level. This scenario also holds true if you lose electrical connection to the sensor.



A small, reliable, light weight electronics package is provided with the sensor to allow its fail safe mode of operation. This electronics package is easily "wire tied" up under the instrument panel along with all the other instrument wiring. No mounting hardware is required. The electronics is powered by +12Vdc. It can be made 24V compatible by adding a small zener diode in series with the electronics. See below.

AE Low Oil Level Sensor P/N 10-01812.....
 AE Low Oil Level Sensor w/ electric P/N 10-01813.....
 Flap Positioning System FPS-Plus-nt P/N 11-02981.....
 Flap position System W/ Elevated Trim Compensation P/N 11-02980.....

IK TECHNOLOGIES

AIM-1 AIRCRAFT INFORMATION MONITOR



If you're a "numbers" kind of guy or gal, this is the choice for you. The compact, all-in-one AIM-1 features a large-character, back-lit, sunlight-readable LCD screen that displays clearly labeled engine information -- no guessing what the numbers mean.

Cylinder head temperatures (CHTs) and exhaust gas temperatures (EGTs) for four cylinders are displayed simultaneously on bright, color-coded LED bargraphs, allowing for rapid scanning, comparison and instant recognition of normal (green), cautionary (yellow) or warning (red) conditions. Pressing the "MODE" button displays the precise numeric value of each CHT and EGT on the LCD screen.

Want to see what you're squawking? A touch of the "change screen" button displays your Mode C Altitude, which can then be offset by inputting barometric pressure or equivalent field elevation.

Outside air temperature, density altitude and a comprehensive, customized checklist are available as options.

P/N 11-03367.....

| Sensors / Senders | | |
|--|----------|-------|
| Description | Part No. | Price |
| UMA 1E1 Oil Pressure Sender | 10-00007 | . |
| UMA 1B3 Oil Temperature Sender | 10-00418 | . |
| FloScan Fuel Flow Sensor | 11-01203 | . |
| Westach Hall Effect Sensor Bendix 720-14RB | 10-00863 | . |
| (not req. for electronic ignition) Slick 720-14R | 10-00861 | . |

IK-2000 AIRCRAFT INFORMATION MONITOR



The glass cockpit of the "future" has already become the standard in today's commercial and business aircraft. Why should you build & fly a contemporary aircraft with instruments designed half a century ago? Aircraft Spruce announces a breakthrough in instrumentation that will allow you, the experimental airplane builder/pilot, to enjoy all the benefits

of a state-of-the-art multifunction flight & engine monitoring system at a fraction of the cost of similar systems currently available.

Six independent microprocessors are used to acquire, measure and display data in the I-K 2000, ensuring continued instrument operation in the unlikely event of a processor or power-supply failure. This monitor was built with reliability in mind. Multiple displays can be used in a single aircraft. Ideal for tandem airplanes such as Vari-EZ, Long-EZ, Berkut, etc.

For experimental aircraft only. These devices are not presently STC-ed or PMA-ed. May be possible to install in certificated aircraft with FAA 337 field approval.

6 Cyl. System P/N 11-03368
 FADEC Interface P/N 11-03367

AEROSPACE LOGIC

AEROSPACE LOGIC CHT/EGT INDICATORS



Available in 4 or 6 cylinder configurations • Supports most type K thermocouple probes • Displays information in °C & °F with automatic conversion of all setup parameters • Accuracy to within 1°F • Displays temps from 0°F – 1900°C / 0°C—1040°C (EGT); 0°F – 700°C / 0°C—371°C(HT) • High speed scan and acquisition rates. While others update information every 5 seconds and more, our instrument provides precise information every 1 second! • Analog bar type and digital display Select between any of these powerful display pages:

- 1) Any specific cylinder. Choose the cylinder you wish to monitor and change to the next whenever you wish.
 - 2) Sequential step through each cylinder with 5 second delay.
 - 3) Auto select. Selects the hottest cylinder, updated every 1 second.
 - 4) Switch between any selectable function and the auto function and return to the last monitored setting without any data loss!
- User programmable high and low limits • Internal and external brightness control (user programmable) • 9V-33V operating range • Only 2.2" deep • Fits std 2.25" mounting holes • Full 1 year warranty.

| Part No. | Model No. | Description | Cylinders | Price |
|----------|--------------|---|-----------|-------|
| 10-00447 | CHT-100-4 | Cylinder Head Temperature Instrument | 4 | . |
| 10-02154 | CHT-100-4V | Cylinder Head Temperature Instrument with Built in Voltmeter | 4 | . |
| 10-00449 | CHT-100-4RP | Cylinder Head Temperature Instrument with 18mm Ring Probes | 4 | . |
| 10-01752 | CHT-100-4VRP | Cylinder Head Temperature Instrument with 18mm Ring Probes and built in Voltmeter | 4 | . |
| 10-00723 | CHT-100-4BP | Cylinder Head Temperature Instrument with Bayonet Probes | 4 | . |
| 10-01754 | CHT-100-4VBP | Cylinder Head Temperature Instrument with Bayonet Probes and Built in Voltmeter | 4 | . |
| 10-00454 | CHT-100-6 | Cylinder Head Temperature Instrument | 6 | . |
| 10-01755 | CHT-100-6V | Cylinder Head Temperature Instrument with Built in Voltmeter | 6 | . |
| 10-01756 | CHT-100-6RP | Cylinder Head Temperature Instrument with 18mm Ring Probes | 6 | . |
| 10-01757 | CHT-100-6VRP | Cylinder Head Temperature Instrument with 18mm Ring Probes and built in Voltmeter | 6 | . |
| 10-01758 | CHT-100-6BP | Cylinder Head Temperature Instrument with Bayonet Probes | 6 | . |
| 10-01759 | CHT-100-6VBP | Cylinder Head Temperature Instrument with Bayonet Probes and Built in Voltmeter | 6 | . |
| 10-01719 | CT1-F | Clock and Outside Air Temperature Degrees F° | ALL | . |
| 10-01761 | CT1-C | Clock and Outside Air Temperature Degrees C° | ALL | . |
| 10-00439 | EGT-100-4 | Exhaust Gas Temperature Instrument | 4 | . |
| 10-00441 | EGT-100-4P | Exhaust Gas Temperature Instrument with Probes | 4 | . |
| 10-01762 | EGT-100-4V | Exhaust Gas Temperature Instrument with Built in Voltmeter | 4 | . |
| 10-01763 | EGT-100-4VP | Exhaust Gas Temperature Instrument with Probes and Built in Voltmeter | 4 | . |
| 10-00443 | EGT-100-6 | Exhaust Gas Temperature Instrument | 6 | . |
| 10-00445 | EGT-100-6P | Exhaust Gas Temperature Instrument with Probes | 6 | . |
| 10-01764 | EGT-100-6V | Exhaust Gas Temperature Instrument with Built in Voltmeter | 6 | . |
| 10-01765 | EGT-100-6VP | Exhaust Gas Temperature Instrument with Probes and Built in Voltmeter | 6 | . |



AEROSPACE LOGIC FUEL PRESSURE/AMMETER/VOLTMETER

Fuel Pressure and Ammeter kit. Includes instrument with integrated voltmeter, solid state fuel pressure sender and 30A current shunt.

| Part no. | Model No. | Description | Price |
|----------|-------------|---|-------|
| 10-01773 | FP-100-K30 | Fuel Pressure, Ammeter, and Voltmeter Instrument w/ External 30A Shunt | . |
| 10-01774 | FP-100-K60 | Fuel Pressure, Ammeter, and Voltmeter Instrument w/ External 60A Shunt | . |
| 10-01775 | FP-100-K100 | Fuel Pressure, Ammeter, and Voltmeter Instrument w/ External 100A Shunt | . |



AEROSPACE LOGIC INTELLIGENT TACHOMETER

Intelligent Tachometer Kit. Works with all magneto based ignition systems. Complete with instrument, data download cables, all sensors and installation hardware. For experimental aircraft, TSO and STC in progress.

P/N 10-01776.....



AEROSPACE LOGIC FL-100 DUAL FUEL LEVEL INDICATORS

Displays fuel level of two separate tanks on color coded bar graph indicators and a digital readout of fuel quantity on a 4-digit display. Fully user programmable from the front panel. For use with 0-5V sensors/ transducers. Fits standard 2-1/4" mounting hole. Voltage: 9-33 VDC. Displays fuel in US gallons.

Features:

- Viewable in direct sunlight
- Custom design color bar display
- Multi-color sunlight visible
- InGaAlP/GaN LED technology
- Analog/digital readout of fuel levels
- 100,00 hours operating life
- Color-coded fuel level quantities
- Low fuel level alarms
- Internal over temperature shutoff .25 second scan rate
- Dual processor monitoring with 1sec. error shutoff
- Floating point mathematical compensation for tank & sensor linearity
- 256 times measurement validation before display

| Part No. | Model No. | Description | Price |
|----------|-----------------|--|-------|
| 10-00304 | FL-100-R | Dual Fuel level Indicator for Senders with a Maximum Resistance of 300 Ohms | . |
| 10-01767 | FL-100-R (44) | Dual Fuel level Indicator for Senders with a Maximum Resistance of 44 Ohms | . |
| 10-01768 | FL-100-R (67) | Dual Fuel level Indicator for Senders with a Maximum Resistance of 67 Ohms | . |
| 10-01769 | FL-100-R (108) | Dual Fuel level Indicator for Senders with a Maximum Resistance of 108 Ohms | . |
| 10-01770 | FL-100-R (711M) | Dual Fuel level Indicator for Use with Cessna Pennycap Capacitive Fuel Senders | . |
| 10-01771 | FL-100-6 | Dual Fuel Level Indicator for Senders with a DC Voltage Output of 0v-5v | . |



AEROSPACE LOGIC OIL PRESSURE & TEMPERATURE

Your OL-100 Oil Pressure and Temperature Indicator will provide you with years of reliable service and generally outlast the life of your aircraft. Every reading you will see displayed on your instrument has been validated at least 256 times before you see it. This all happens in less than a second. When you see the result you know the instrument is functioning correctly as it is monitored by an independent microprocessor just to ensure that it is functioning correctly. In turn the main processor validates the independent monitoring processor.

| Part No. | Model No. | Description | Price |
|----------|------------|--|-------|
| 10-01777 | OL-100-T | Oil Pressure and Temperature Instrument | . |
| 10-01778 | OL-100-TV | Oil Pressure and Temperature Instrument with Built in Voltmeter | . |
| 10-01779 | OL-100-TK | Oil Pressure and Temperature Instrument with Pressure and Temperature Senders | . |
| 10-01780 | OL-100-TKV | Oil Pressure and Temperature Instrument with Pressure and Temperature Senders and Built in Voltmeter | . |



AEROSPACE LOGIC VOLTMETER / AMMETER

Voltmeter and Ammeter kit. Includes instrument and current shunt.

| Part No. | Model No. | Description | Price |
|----------|-------------|---|-------|
| 10-01782 | VA-100-K30 | Voltmeter and Ammeter Instrument with 30A External Shunt | . |
| 10-01783 | VA-100-K60 | Voltmeter and Ammeter Instrument with 60A External Shunt | . |
| 10-01784 | VA-100-K100 | Voltmeter and Ammeter Instrument with 100A External Shunt | . |



AEROSPACE LOGIC CLOCK & OUTSIDE AIR TEMPERATURE

Clock and Outside Air Temperature kit choose °F or °C. Includes instrument and digital temperature sensor. For experimental aircraft, TSO and STC in progress.

P/N 10-01761.....

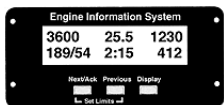


AEROSPACE LOGIC CLOCK & OUTSIDE AIR TEMPERATURE

Manifold and fuel pressure combination instrument. Instrument contains an integrated manifold pressure sensor and requires 0.5v-4.5v fuel pressure input (0-100 PSI at full scale) Features: • Manifold Pressure 0.2-50 in.Hg • Fuel Pressure 0-60 PSI • Use as either manifold, fuel or both pressure instrument • Programmable display formats • Integrated MP sensor • Remote mount FP sender • External alarm output • All limits and functions are user programmable P/N 10-01766.....

FLIGHT/ENGINE MONITORS – SKYSPORTS

SUPER ENGINE INFORMATION SYSTEM (EIS)



Complete engine instrumentation packages available in various models for nearly all 2 & 4-stroke engines. The EIS includes 6 display pages. Combination pages provide convenient grouping of 6 or 7 engine parameters. Labeled pages are used by the alarm system with its external red warning light to make unsafe engine conditions immediately apparent. 2-stroke models provide tach, dual EGT, dual CHT, fluid temperature, auxiliary input, hourmeter, flight timer, voltmeter and outside air temperature. Four-stroke models include all of this, plus oil pressure, a second auxiliary input and a 10 rpm resolution tachometer. All models also available with the fuel flow option (including totalizer and time to empty). The 2-stroke model is available w/altimeter/rate-of-climb. The instrument has been proven in thousands of installations worldwide. Excellent quality and robust design makes this instrument highly reliable. Systems include probes and pre-wired cables, or may be purchased individually. Requires (5) 15/16" w x 2-3/4" h x 2-1/2" d panel space. Specify engine and aircraft makes and models, standard systems furnished with gasket type CHT senders and hose clamp type EGT senders. Threaded senders available at additional cost.

Lifetime warranty for manufacturer defects

| Description | Model | Part No. | Price |
|---|-----------|----------|-------|
| EIS System for Cont./Lyc./Franklin | 4000 | 10-00285 | . |
| EIS System for 4 Stroke | 4000 | 10-28002 | . |
| EIS Fuel Flow Option | OPT-FF-01 | 10-28004 | . |
| 2-stroke, 4 Cylinder | 4002 | 10-00280 | . |
| Rotax 912/912S/914 | 2004 | 10-00281 | . |
| Rotax HKS | 2004 | 10-00282 | . |
| EIS system for Jabiru 4 Cyl. | 4000 | 10-00283 | . |
| EIS system for Jabiru 6 Cyl. | 6000 | 10-00284 | . |
| Cont./Lyc./Franklin 6 Cyl. | 6000 | 10-00286 | . |
| EIS Lyc/Cont 6 Cylinder (Package for Lycoming/Continental 6-cylinder engines includes EIS Model 6000 Instrument, 6 EGT probes, 6 CHT bayonet-type CHT probes with adapters, Oil temperature Sensor, Oil Pressure Sensor, and pre-wired cables.) | 6000P | 11-03421 | . |
| Super EIS 2-stroke package | 2000 | 10-28000 | . |
| 2-stroke Altimeter/rate-of-climb pkg | 2000 | 10-28003 | . |



VISION MICROSYSTEMS VM1000C ENGINE/FLIGHT MONITOR

The VM1000C gives you the unsurpassed benefit of a fully transfective sunlight readable color display ("The brighter it gets the better it looks"). The full color display gives you the benefit of immediate recognition of a current or potential problem, unlike other displays using small low resolution digits and tiny bars. The kits are supplied with aviation quality probes and transducers. **Features:** •Manifold pressure •Percent power •EGT lean system •Oil pressure •Turbine inlet temp. •Oil temp. •Outside air temp. •Carb air temp. •CylinderSentry™ (CHT condition monitor) •Exclusive Autotrack™ keeps watch over your engine for unexpected changes. •Warn master caution instantly alerts you of an engine problem •RPM, Hobbs Time, Tach Time •Electrical system •Volts & amps •Fuel computer sys. •Fuel flow •Fuel remaining •Hours endurance •Fuel burned •Fuel level sys(em(uses either the VMI capacitance probes or resistive float sensors)

| ENGINE PACKAGES (Includes sensors & harnesses less fuel flow transducer) | | |
|---|----------|-------|
| Description | Part No. | Price |
| VM100C 4 Cylinder Fuel Injected | 10-00612 | . |
| VM100C 4 Cylinder Fuel Injected with Fuel Flow | 10-00613 | . |
| VM100C 6 Cylinder Fuel Injected | 10-00614 | . |
| VM100C 6 Cylinder Fuel Injected with Fuel Flow | 10-00615 | . |
| VM1000C 4 Cylinder Carbureted | 10-02024 | . |
| VM1000C 4 Cylinder Carbureted with Fuel Flow | 10-02025 | . |
| VM1000C 6 Cylinder Carbureted | 10-02026 | . |
| VM1000C 6 Cylinder Carbureted with Fuel Flow | 10-02027 | . |
| OPTIONS (Not included with the engine packages, price based on purchase with kit) | | |
| VM1000C T.I.T With Harness | 10-00616 | . |
| VM1000C EGT Probe | 10-00617 | . |
| VM1000C CHT Bayonet Style Probe | 10-00618 | . |
| VM1000C OAT with Harness | 10-27095 | . |
| VM1000C Carb. Temperature | 10-02481 | . |
| REPLACEMENT PARTS (if not purchased as a kit, for VM1000C ONLY) | | |
| EGT (grounded for quick response), Hose Clamp 1" to 2" | 10-02635 | . |
| CHT (grounded for quick response), 3/8-24 UNF | 10-02636 | . |
| FF-201B3 to 45 GPH (1/4 NPT FloScan transducer) | 10-02637 | . |
| TIT With harness | 10-02638 | . |
| OAT with Harness | 10-02639 | . |

IN



SKYSPORTS CAPACITIVE FUEL SYSTEMS

There is simply no better fuel measurement device than the SkySports capacitance solid state fuel systems. Using a special, solid state capacitance probe, all moving parts are eliminated. Adapts to many different tanks, multiple tanks, and difficult mounting installations.

Systems are available in 12 and 24V configurations, or self-contained, battery powered units. Probes are available bendable, and cuttable, and the entire system is easy to install. Calibrations takes just seconds. Multiple probes can be "summed" on a single gauge, or can drive multiple gauges.

The kits include: probe (s) as specified, gauge as specified, 8 feet multiconductor wire, longer lengths available on request, electrical connectors, AN bolts, mounting hardware (aluminum flange and gasket, or rubber seal grommet and well-nuts), instrument mount screws, cable ties and instructions.

| Voltage | Length | Gauge | Bend | Indicator | Part# | Set Price | Probe Price |
|---------|--------|-------|------|-----------|-----------|-----------|-------------|
| 12 | 06 | S | | | FS1206S | . | . |
| 12 | 12 | S | | | FS1212S | . | . |
| 12 | 12 | S | | L | FS1212SL | . | . |
| 12 | 12 | S | | H | FS1212SH | . | . |
| 12 | 12 | S | 3 | | FS1212S3 | . | . |
| 12 | 12 | S | 3 | L | FS1212S3L | . | . |
| 12 | 12 | S | 5 | | FS1212S5 | . | . |
| 12 | 12 | S | 5 | L | FS1212S5L | . | . |
| 12 | 12 | S | | | FS1212S | . | . |
| 12 | 12 | S | 3 | | FS1212S3 | . | . |
| 12 | 12 | S | 3 | L | FS1212S3L | . | . |
| 12 | 12 | S | 5 | | FS1212S5 | . | . |
| 12 | 12 | S | 5 | L | FS1212S5L | . | . |
| 12 | 24 | S | | | FS1224S | . | . |
| 12 | 24 | S | | L | FS1224SL | . | . |
| 12 | 24 | S | 3 | | FS1224S3 | . | . |
| 12 | 24 | S | 3 | L | FS1224S3L | . | . |
| 12 | 24 | S | 5 | | FS1224S5 | . | . |
| 12 | 24 | S | 5 | L | FS1224S5L | . | . |
| 12 | 24 | S | | | FS1224S | . | . |
| 12 | 24 | S | 3 | | FS1224S3 | . | . |
| 12 | 24 | S | 3 | L | FS1224S3L | . | . |
| 12 | 24 | S | 5 | | FS1224S5 | . | . |
| 12 | 24 | S | 5 | L | FS1224S5L | . | . |
| 12 | 36 | S | | | FS1236S | . | . |
| 12 | 12 | W | | | FS1212W | . | . |
| 12 | 24 | W | | | FS1224W | . | . |



US-8A, STCd / PMAd, ULTIMATE ENGINE ANALYZER

Simultaneously displays EGT and CHT for Singles. (For Twins, call for model designation). May require two US-8As, depending on your requirements). Automatic Diagnostic Assist helps diagnose engine problems such as fouled plugs, burned valves, intake leaks, low compression, etc. Impressive Features Include: Auto Scan up to 16 temperature channels, Reprogrammable Temp Limits From the Front Panel (unavailable on competition's gauges in this category), Auto Detection of hottest EGT and hottest CHT + pilot-programmed Over-Temp and Under-Temp limits!, Programmable Scan Rate for each channel displayed (rather than competition making that decision for you). One Degree, STEADY Resolution! Only 6lbs., Standard 2-1/4" hole (or use an EI adaptor plate for 3-1/8" holes) Choose up to 16 probes (w/ cables): EGT, CHT, OAT, Carb Temp, Oil Temp

SINGLE-ENGINE US-8A PKG PRICES

| Model | Description | Part No. | Price |
|---|---|----------|-------|
| US-8A-4 | 4-cylinder engines without a Primary CHT gauge already installed. Includes 4 EGT probes, 4 CHT probes and 8 ea 6-ft harnesses | 10-00595 | . |
| US-8A-4G | 4-cylinder pkg for a/c w/ Primary CHT gauge already installed. Includes 4 EGT probes, 3 CHT probes, 1 P-102 Piggy Back CHT probe and 8 ea 6 ft harnesses | 10-03283 | . |
| US-8A-6 | 6-cylinder pkg for a/c without a Primary CHT gauge already installed. Includes 6 EGT probes, 6 CHT probes & 12 ea 6-ft harnesses | 10-00596 | . |
| US-8A-6G | 6-cylinder pkg for a/c with a Primary CHT gauge already installed. Includes 6 EGT probes, 5 CHT probes, 1 P-102 Piggy Back CHT probe and 12 ea 6-ft harnesses | 10-03284 | . |
| NOTE: The UBG-16 can accommodate to 16 probes (w/ cables): EGT, CHT, OAT, Carb Temp, and / or Oil Temp | | | |
| TWIN-ENGINE US-8A PKG PRICES: | | | |
| US-8A-4T | 4-cylinder Twin pkg for a/c without Primary CHT gauges already installed. 4 EGTs L&R and 4 CHTs L&R. Includes 8 EGT probes, 8 CHT probes and 16 ea 20-ft harnesses. | 10-00597 | . |
| US-8A-4G-T | 4-cylinder Twin pkg for a/c with Primary CHT gauges already installed. 4 EGTs L&R and 4 CHTs L&R. Includes 8 EGT probes, 6 CHT probes, 2 P-102 Piggy Back CHT probes and 16 ea 20-ft harnesses. | 10-00602 | . |
| US-8A-6-T | 6-cyl Twin pkg (scans all EGTs L&R + 2 CHTs L&R). Includes 12 EGT probes (for 6 channels of EGT on both engines), 4 gasket CHT probes (for 2 channels of CHT on each engine), plus 16 ea 20-ft harnesses. (For more than 12 EGTs and 2 CHTs L&R, + add'l temps, order 2 US-8As) | 10-00598 | . |



SR-8A ENGINE ANALYZER

STCd, PMAd - EGT's, CHT's TIT, Oil Temp, OAT, Carb. Temp + others, up to 8 channels. Manual and Auto Diagnostics (Scan) Modes. Auto Detects the hottest EGT or CHT. Factory-set EGT Over-Temp Limit (1650°F). Factory-set EGT Under-Temp Limit (1100°F). Factory-set CHT Over-Temp Limit (500°F). Differential Limit set from back panel (95°F or 195°F). Selectable Scan Rate + Number of Channels to be Scanned. 2 1/4" Mount. 5.35" Depth. 16 Oz. Instrument. 1° F Resolution. Accuracy; 1/2%. Superior Sunlight Viewability. Backlit. Operates from 7.5 to 35 volts @at .3 amps.

| Model | Description | Part No. | Price |
|---------|--|----------|-------|
| SR-8A | SR-8A Instrument only (no probes or cables) | 10-25220 | . |
| SR-8A-4 | 4 Cyl. SR-8A Package w/ 4 p-110 EGT probes, 4 P-100 CHT probes, 8 ea 6' Cables (uses all 8 inputs) | 10-00599 | . |
| SR-8A-6 | 6 Cyl. SR-8A Package w/ 6 P-110 EGT probes, 2 P-100 CHT probes, 8 ea 6' Cables (uses all 8 inputs) | 10-00603 | . |



UBG-16 ULTIMATE BAR GRAPH ENGINE ANALYZER

STCd and PMAd - Automatically helps detect engine problems before they become safety hazards or expensive repairs! • 32 PILOT-PROGRAMMABLE LIMITS provide a High and Low Alarm for EACH of the UBG's 16 channels! • NORMALIZED MODE with LONG-TERM MEMORY. • LEAN MODE with "TRUE PEAK DETECT" • DATA RECORDING with UNIQUE EXPANDABLE CAPABILITY. Stores up to 690 hours of data for every channel being monitored on the UBG-16. The UBG-16 can be set up to monitor: EGT, CHT, TIT, Oil, Outside Air, Carburetor, cowl and other temperatures. As well as Oil, Fuel, Manifold Pressure, Gyro Vacuum, R.P.M, and fuel flow, Bus voltage and Amps.

| Model | Description | Part No. | Price |
|-----------|---|----------|-------|
| UBG-16-4M | 4-Cylinder Package. Includes 4 EGT probes, 4 CHT probes, 12 ea 6' harnesses and Data Recorder (MUX-8A) | 10-00593 | . |
| UBG-16-6M | 6-Cylinder Package. Includes 6 EGT probes, 6 CHT probes, 12 ea 6' harnesses, and Data Recorder (MUX-8A) | 10-00594 | . |
| EGView | Software for analyzing downloaded software | 10-01219 | . |

E.I. DIGITAL/GRAPHIC INSTRUMENTS

These Digital/Graphic Instruments are solid state and hold their accuracy over time and a range of environmental conditions. The colorful Graphic Analog display emits green, yellow, or red lights enabling the pilot to spot problems immediately without interpreting a needle. Gauges mount in 2-1/4" instrument holes.



TACHOMETER - R-1, TACHOMETER: STCd, PMA'd and TSO'd as PRIMARY REPLACEMENT. Features a 210 degree graphic analog display with green, yellow, and red LEDs. Accurate 10 RPM resolution digital display. Flight Timer. Tach Timer. Peak RPM Recorder. Automatic Mag Drop Calculation. Connects to both "P" leads through isolators (no magnetic pick-ups required). 2 1/4" Mount. 3.65" Depth. 10 Oz. Unit. Superior sunlight viewability. Backlit. Operates from 7.5 to 30 volts @ .3 amps. Note: This instrument may come with labels on the faceplate rather than silkscreening, depending on you're a/c's required markings..

P/N 10-25200



OIL PRESSURE/TEMPERATURE - OPT-1, OIL TEMP/PRESSURE: STCd, PMAd and TSO'd as PRIMARY REPLACEMENT. OPT-1 features dual 90 degree graphic analog displays w/ green, yellow, and red LEDs. Accurate to 1 PSI and 1°F Resolution. External Oil Press and Temp Transducers (no oil in the cockpit). 2 1/4" Mount. 3.65" Depth. 22 Oz. Kit. Superior sunlight viewability. Backlit. Operates from 7.5 - 35 volts @ .3 amps. Note: This instrument may come with labels on the faceplate rather than silkscreening, depending on you're a/c's required markings.

P/N 10-25205



MANIFOLD PRESSURE - M-1, MANIFOLD PRESSURE. STCd, PMA'd & TSO'd as PRIMARY REPLACEMENT. 210 degree graphic analog display w/ green, yellow, and red LEDs. Accurate 1" Mercury Resolution digital display. Connects to std pressure line through 1/4" male flare union. 2 1/4" Mount. 3.65" Depth. 13 Oz. Unit. Viewable in direct sunlight. Backlit.. Operates from 7.5 to 30 volts @ .3 amps. Note: This instrument may come with labels on the faceplate rather than silkscreening, depending on you're a/c's required markings.

P/N 10-25210



VOLTS/AMPS - VA-1A, VOLTS/AMP. STCd, PMAd as PRIMARY REPLACEMENT. Internal Shunt. Discharge @ High Voltage Warning Lights. 100 amp capability. .1 volt & .1 amp 1% Resolution. Accuracy: 2 1/4" Mount. 2.5" Depth. 9 Oz. Unit. Viewable in direct sunlight. Backlit. Operates from 7.0 to 40 volts @ .1 amp.

P/N 10-00809VA-1A (internal shunt)

VA-1A-XX, VOLTS/AMP - STCd, PMAd as PRIMARY REPLACEMENT. (For use with External Shunt. Discharge and High Voltage Warning Lights. 100 amp capability (or order VA-1A-300 for 300-amp capability). .1 volt and .1 amp Resolution. Accuracy: 1%. 2 1/4" Mount. 2.5" Depth. 9 Oz. Unit. Superior sunlight viewability. Backlit. Operates from 7.0 to 40 volts @ .1 amp.

P/N 10-01378VA-1A-50 (S-50 external shunt)

P/N 10-01394VA-1A-300 (S-300 external shunt)

P/N 10-03207RSVA-3 Remote Switch

The UBG-16 input channels. Any of the following options can be added at any time. Each option uses 1 input channel unless otherwise noted.

| Model | Description | Part No. | Price |
|--------------|--|----------|-------|
| FM -FLOW -60 | Flow Transducer Use w/ engine-driven fuel pumps up to 350 HP. 1/4" female NPT. .6-70+ GPH, .6 PSI drop @ 30 GPH, 2.3 PSI drop @ 60 GPH | 10-25343 | . |
| FM -FLOW -90 | TRANSDUCER For 350 to 550 HP engines or gravity-feed engines, 1/4" NPT, 2 to 125+ GPH, .05 PSI drop @ 20 GPH, .2 PSI drop @ 40 GPH. | 10-02208 | . |
| FM-FP | Secondary Fuel Pressure Includes PT-30GA Pressure Transducer. (Can be used with The UBG-16 and also with the FP-5L (Fuel Flow/Pressure w/ GPS Interface instrument) | 10-25337 | . |
| FM-OP | Secondary Oil Pressure Includes PT-100GA Pressure Transducer. (For use with UBG-16 or FP-5(L). | 10-25336 | . |
| FM-RPM | Secondary RPM Connects directly to the Mag Switch. (For use with UBG-16 or FP-5(L) | 10-25341 | . |
| FM-VA | Secondary Volts/Amps w/S-50 Shunt Volts uses 1 input channel and Amps uses 1 input channel (i.e., monitoring volts and amps require the use of two of the UBG-16's input channels. | 10-25342 | . |
| FM-GYRO | Gyro Vacuum Includes Pressure Transducer. | 10-25339 | . |
| FM-MP | Secondary Manifold Pressure Includes Pressure Transducer. | 10-25338 | . |



ELECTRONICS INTERNATIONAL INSTRUMENTS



FP-5 FUEL FLOW + HORSEPOWER

PMA_d and STC_d - Same amazing Fuel Flow/Horsepower Instrument as our FP-5L, but without GPS interface. Features: • HORSEPOWER to 1% hp • FLOW Displayed in Gallons, Pounds, Liters or British Gallons. • AUTOMATIC K-Factor Calibration for UNSURPASSED • ACCURACY. • FUEL USED Displays "Used for Flight" and "Used Since Fill Up" • FUEL REMAINING Displays fuel remaining to 1/10 gallon. • SCAN MODES Manual and Automatic. • RECURRING FUEL USED ALARM Pilot Programmable! • AUXILIARY Channel To monitor one of the following options: EGT, OAT, Carb Temp, Oil Temp, Manifold Pressure, Gyro Vacuum, RPM, Volts or Amps • Pilot Two LOW FUEL ALARMS Pilot Programmable! • TIME TO EMPTY automatically calculated and displayed. Specs: 2-1/4" mount, 3.65" deep, 28 oz. pkg. Backlit. Superior Viewing in Sunlight. External Warning Line. Operates from 7.5 to 30 volts @ .3 amps.

| Model | Description | Part No. | Price |
|----------|---|----------|-------|
| FP-5 | Instrument Only FUEL FLOW w/ HP (instrument only, no transducers) | 10-25300 | . |
| FP-5-60 | FUEL FLOW w/ HP w/ FT-60 flow xdr, up to 350HP, engine-driven fuel pump | 10-25304 | . |
| FP-5-90 | FUEL FLOW w/ HP, w/ FT-90 Flow Transducer, for aircraft w/ 350-550 HP or without an engine-driven fuel pump | 10-00260 | . |
| FP-5-180 | FUEL FLOW w/ HP, includes HIGH FLOW Transducer (for aircraft w/ more than 550HP) | 10-03208 | . |



FP-5L FUEL FLOW, PRESSURE, HORSEPOWER AND GPS PMA_d & STC_d PRIMARY REPLACEMENT INSTRUMENT

Positively the best Fuel Flow/Horsepower Instrument there is! Nothing else even comes close. The FP-5L's High-Powered Features include: • HORSEPOWER, to 1 percent hp. No other fuel gauge provides this! • FLOW, displayed in Gallons, Pounds, Liters or British Gallons. • AUTOMATIC K-Factor Calibration for UNSURPASSED ACCURACY. • FUEL DISPLAYS: "Used for Flight", "Used Since Fill Up", "MPG", "Fuel Required to. Destination", "Fuel Remaining", "Time to Empty." • SCAN MODES: Manual and Automatic. • RECURRING FUEL USED ALARM Pilot Programmable. • 2 LOW FUEL ALARMS Pilot Programmable w/ Red Warning LED. • FUEL REMAINING displayed to 1/10 Gal. • AUTOMATICALLY CALCULATES AND DISPLAYS "Time to Empty", "Fuel Req to Dest," and "Fuel Reserve.". Displays Nautical and Statute Miles per Gallon. Multiple Data Outputs & Inputs, Handhelds & Panel Mounts. One-of-a-kind AUXILIARY Channel can be used to monitor an additional function (choose one):EGT, TIT, CHT, OAT, Carb Temp, Oil Temp, Cowl Temp, Fuel Pressure, Gyro Vacuum, Manifold Pressure, Volts or Amps. Specs: 2-1/4" mount, 3.65" deep, 28 oz. pkg. Backlit for Night Operation, Superior Sunlight Viewability, External Warning Line. Operates from 7.5 to 30 volts @ .3 amps.

| Models | Description | Part No. | Price |
|-----------|---|----------|-------|
| FP-5L | Fuel Flow w/ Horsepower & GPS input/output (instrument only; no transducers) | 10-01217 | . |
| FP-5L-60 | Fuel Flow w/ Horsepower & GPS input/output; includes FT-60 Flow Transducer (for aircraft w/ up to 350 HP & an engine-driven fuel pump). | 10-25310 | . |
| FP-5L-90 | Fuel Flow w/ Horsepower & GPS input/output, includes FT-90 Flow Transducer | 10-01045 | . |
| FP-5L-180 | Fuel Flow w/ Horsepower & GPS input/output, includes FT-90 Flow Transducer | 10-01050 | . |

FP-5 & FP-5L AUXILIARY OPTIONS

| Models | Description | Part No. | Price |
|--|---|----------|-------|
| The FP-5 & FP-5L feature an Auxiliary Channel. Any one of the following choices can be added to at any time. | | | |
| FFDM-1 w/ FT-60 | FUEL FLOW Differential Module, for aircraft with a Pressure Carburetor. Includes FT-60 or FT-90 Flow Transducer to measure the returned fuel. Please specify FT-60 or FT-90. DOES NOT use up the FP-5's Auxiliary channel. | 10-25325 | . |
| FFDM-1 w/ FT-90 | FUEL FLOW Differential Module, for aircraft with a Pressure Carburetor. Includes FT-60 or FT-90 Flow Transducer to measure the returned fuel. Please specify FT-60 or FT-90. DOES NOT use up the FP-5's Auxiliary channel. | 10-03190 | . |
| FM-Temp-P-110 | EGT hose clamp probe and 6' cable. Compensates HP reading when leaning. | 10-02188 | . |
| FM-Temp-P-128 | OAT or CARB Temp probe (1/4"-28 thread) and 6' cable | 10-02769 | . |
| FM-Temp-P-120 | Secondary OIL Temp probe (5/8"-18 thread) and 6' cable | 10-02770 | . |
| FM-Temp-P-111 | Secondary TIT or OIL Temp probe (1/8" NPT adjustable depth) and 6' cable | 10-02765 | . |
| FM-Temp-P-112 | Secondary TIT or OIL Temp probe (7/16-20 thread adjust. depth) and 6' cable | 10-02766 | . |
| FM-Temp-P-114 | Secondary TIT or OIL Temp probe (1/4" NPT adjust. depth) and 6' cable | 10-02767 | . |
| FM-OP | Secondary OIL PRESSURE. Includes PT-100GA Pressure Transducer | 10-25336 | . |
| FM-FP | Secondary Fuel Pressure. Includes PT-30GA Pressure Transducer | 10-25337 | . |
| FM-MP | Secondary Manifold Pressure. Includes Pressure Transducer | 10-25338 | . |
| FM-RPM 6C | Secondary RPM. Connects directly to the Mag Switch | 10-01786 | . |
| FM-Gyro | Gyro Vacuum. Includes Pressure Transducer | 10-25339 | . |
| FM-VA | Secondary Volts or Amps (one or the other) w/ S-50 amp shunt. | 10-25341 | . |
| AV-17 | Voice Annunciator. Connects through the Audio Panel or Intercom. The 1"x1" control panel mounts on your instrument panel. The 4.1"x 2.6"x 1.7" control box mounts under the instrument panel. See all Annunciator Panels on our "Accessories" page. | 10-00181 | . |

E.I. INSTRUMENTS

The entire line of Electronics International digital instruments offers precise readings at exceptional prices. All gauges are accurate to 1%. They are FAA-approved under STC No. 1626NM. Furnished complete with all probes & leads.



10-01355



10-01339



10-01348



10-01373

| Single-Engine: | Description | Part No. | Price | Single-Engine: | Description | Part No. | Price |
|----------------|---|----------|-------|---|--|----------|-------|
| E-1 | Single-Channel EGT or CHT, STC _d , TSO _d , PMA _d 2 1/4" Mount, 2.5" Depth, 12 Oz. Kit. | 10-01355 | . | EC-1P | STC _d /PMA _d /TSO _d PRIMARY replacement Instruments w/ OverTemp Lights. | 10-00807 | . |
| C-1 | EGT, CHT or TIT, PRIMARY REPLACEMENTS STC _d , TSO _d , PMA _d w/ Over-Temp Warning Light, 2 1/4" Mount, 2.5" Depth, 12 Oz. | 10-01338 | . | TC-1P | STC _d /PMA _d /TSO _d PRIMARY replacement Instruments w/ OverTemp Lights. | 10-02736 | . |
| T-1P | EGT, CHT or TIT, PRIMARY REPLACEMENTS STC _d , TSO _d , PMA _d w/ Over-Temp Warning Light, 2 1/4" Mount, 2.5" Depth, 12 Oz. | 10-01373 | . | FOR TWINS - Orders for following instruments MUST specify type of probes: EGT hose clamp, TIT (hose clamp, 1/8" NPT, 1/4" NPT or 7/16 x 20). CHT, and OverTemp Limits. | | | |
| E-1P | EGT, CHT or TIT, PRIMARY REPLACEMENTS STC _d , TSO _d , PMA _d w/ Over-Temp Warning Light, 2 1/4" Mount, 2.5" Depth, 12 Oz. | 10-02762 | . | EE-1P | Dual Display EGT (1 L & 1 R), Over-Temp Lights, 3-1/8" mount | 10-01447 | . |
| C-1P | EGT, CHT or TIT, PRIMARY REPLACEMENTS STC _d , TSO _d , PMA _d w/ Over-Temp Warning Light, 2 1/4" Mount, 2.5" Depth, 12 Oz. | 10-01339 | . | CC-1P | Dual Display CHT (1 L & 1 R), Over-Temp Lights, 3-1/8" mount | 10-02735 | . |
| EC-1 | Switchable from EGT to CHT (1 of ea), STC _d , TSO _d & PMA _d . 2 1/4" Mount, 2.5" Depth, 16 oz | 10-01358 | . | TT-1P | Dual Display TIT (1 L & 1 R), Over-Temp Lights, 3-1/8" mount | 10-02733 | . |
| EAC-1 | STC _d , TSO _d , PMA _d . - EGT/OAT/CHT Ice Zone Warning Light (from 10 to 39 degrees Celsius). | 10-00806 | . | EC-1PT | Dual Display 1 EGT & 1 CHT w/ OverTemp Lights, 3-1/8" mount | 10-02731 | . |
| CA-1 | STC _d , TSO _d , PMA _d - CARB TEMP/OAT w/ Ice Zone Warning Light. (from 10 to 39 degrees Celsius) | 10-01351 | . | TC-1PT | Dual Display 1 TIT & 1 CHT w/ OverTemp Lights, 3-1/8" mount | 10-02732 | . |
| A-1 | OAT w/ Ice Zone Warning Light, STC _d , PMA _d , TSO _d (light comes on between 10 and 39 degrees F). | 10-01307 | . | FOR TWINS - Not Primary Replacement Instruments, but STC _d , PMA _d , TSO _d . Same order requirements and specifications as above: | | | |
| E-4 | EGT and CHT instruments, STC _d , TSO _d and PMA _d . Four Channels (EGT or CHT) | 10-01356 | . | E-2 | (one display, switchable from left to right engine, either EGT or CHT) | 10-00098 | . |
| C-4 | EGT and CHT instruments, STC _d , TSO _d and PMA _d . Four Channels (EGT or CHT) | 10-01348 | . | C-2 | (one display, switchable from EGT, L/R and CHT L/R). | 10-01661 | . |
| E-6 | EGT and CHT instruments, STC _d , TSO _d and PMA _d . Six Channels | 10-01357 | . | EC-2 | (one display, switchable from EGT, L/R and CHT L/R). | 10-01359 | . |
| C-6 | EGT and CHT instruments, STC _d , TSO _d and PMA _d . Six Channels | 10-01350 | . | | | | |

ELECTRONICS INTERNATIONAL INSTRUMENTS



MVP-50P GLASS PANEL ENGINE & SYSTEM MONITOR

MVP-50P is Certified Primary Replacement. 5.55" x 5.15" x 2.4" Deep Engine and System Monitoring: The MVP-50P replaces over 15 Engine Instruments and 50 Functions in a single, full color, enhanced TFT glass display instrument. It features excellent viewability, even in direct sunlight. The MVP-50 is an unrivaled Engine and Aircraft System Monitor with an easy-to-read and easy-to-use format. There are Pilot-Programmable colors, ranges and limits and a voice alarm for each instrument displayed. Its "System Page" displays trims, flaps, wheel status lights, many system parameters and annunciators. This is the most powerful engine and system analyzer on the market, featuring the following displays: Bar Graph (with Scan and Hottest Cylinder modes), Rich-of-Peak, Lean-of-Peak, Full Digital, Normalized and Differential. The MVP-50P's instant red and yellow visual warnings, as well as voice annunciators for all Programmed Limits, eliminate the need to constantly scan an entire panel for possible problems. In-Flight Data: The MVP-50P provides many "Flight Data Screens" to reduce cockpit clutter and pilot workload. Some of these screens are: Fuel Management, Timers, Clocks and Date, Weight and Balance, Data Recording, Custom Checklists (Start, Taxi, Run-up w/ Mag Drop, Take Off, Landing, Emergency and more!), Custom Flight Plans, General Information (Aircraft Performance, Engine Diagnostics, VSI Lights, Airspeed, VFR Minimums, Altitude Table, Light Gun Signals, Transponder Codes, Frequencies, Real-Time Out (providing telemetry for UAV racers, etc.), plus additional Screens, including: Flight Log, Max Data Log, Min Data Log and others. And it's easy to create your own Custom Screens and download them to the MVP-50P through its USB port. Compatible with OP Technologies and Chelton. EGView Charting Software is also available for use with the MVP-50P. Other Functions Included: Help Screen; EGT & CHT Differentials; Shockcooling; Horsepower; Weight & Balance Data and Graph; GPS Interface and Data; Fuel Efficiency; Fuel Used for Trip; Fuel Used Since Fill Up; Time to Empty; Distance to Empty; Fuel; Time and Distance to Way Point; Fuel Reserve; Time Reserve; Distance Reserve; Up and Down Timers; Flight and Tach Timers; Engine Hours; Date; Local and Zulu Time; Voice Warnings; Data Recording; selectable .33 – 6 min., 665 hours @ 6 seconds!

| Experimental | Description | Part No. | Price | Experimental | Description | Part No. | Price | Certified | Description | Part No. | Price |
|--------------|------------------|----------|-------|-----------------|------------------------------|----------|-------|-------------|----------------------|----------|-------|
| MVP-50P-4 | 4-Cylinder Pkg | 10-01192 | . | MVP-50P-9 | 9-Cyl. Radial Pkg | 10-03176 | . | MVP-50P-4-C | 4 Cylinder Certified | 10-03867 | . |
| MVP-50P-6 | 6-Cylinder Pkg | 10-01191 | . | MVP-50P-12W | 12-Cylinder Water-Cooled Pkg | 10-03177 | . | MVP-50P-6-C | 6 Cylinder Certified | 10-03868 | . |
| MVP-50P-7 | 7-Cylinder Pkg | 10-03174 | . | MVP-50P-4-FADEC | 4-Cyl. Aerosance Pkg | 10-03173 | . | MVP-50P-8-C | 8 Cylinder Certified | 10-03869 | . |
| MVP-50P-8 | 8-Cylinder Pkg | 10-03175 | . | MVP-50P-6-FADEC | 6-Cyl. Aerosance Pkg | 10-03172 | . | | | | |
| MVP-50P-8W | Water-Cooled Pkg | 10-03178 | . | | | | | | | | |

OPTIONAL OUTPUT INTERFACES AVAILABLE FOR MVP PKGS LISTED ABOVE

| Models | Description | Part No. | Price |
|---------------------------------|--|----------|----------|
| -OPT | Allows the MVP to provide engine data to an OP Technologies unit. | 10-03169 | \$667.00 |
| -RTDO | Real-Time Data Out. Can be used to provide telemetry for UAV's, racers and other applications. | 10-03168 | . |
| ACCESSORIES FOR MVP PKGS | | | |
| EGView | EGView Charting Software. Use for analyzing and downloading data to the MVP-50P. | 10-01219 | . |
| USB-64 | USB Memory Stick, 64 MB or larger. Used to upload and download data to the MVP-50P. | 10-03186 | . |
| GP-1-MVP | LED Intensity Control Pot. External pot used to control the display intensity. | 10-03211 | . |
| EDC-33P-4/6 | 4/6 Cylinder Engine Data Converter. Adding a second EDC to the MVP allows. Additional pressures, annunciators and other functions to be monitored on the MVP (uses the Input Port 3 on the MVP). | 10-03184 | . |
| MVP-50P Head Only | Display unit only! May be used to display parameters in a second location Display Only | 10-01193 | . |

TEMPERATURE PROBES FOR MVP-50P & MVP-50T

| Models | Description | Part No. | Price | Models | Description | Part No. | Price |
|---------------|--|----------|-------|-------------|---|----------|-------|
| P-100-MVP | CHT probe, screw-in, 3/8"-24 | 10-03212 | . | P-111-MVP | Std TIT probe, 1/8" NPT, .187" D | 10-03222 | . |
| P-101-MVP | CHT probe, Military Bayonet | 10-03213 | . | P-111-F-MVP | Fast Response TIT probe, 1/8" NPT, .187" D | 10-03223 | . |
| A-101-MVP | CHT Adaptor for P-101 Probe, 3/8"-24 | 10-03216 | . | P-112-MVP | Std TIT probe, 7/16"-20, .187" D | 10-03224 | . |
| P-102-18-MVP | CHT probe, 18mm gasket | 10-03214 | . | P-114-MVP | Std TIT probe, 1/4" NPT, .187" D | 10-03225 | . |
| P-102-14-MVP | CHT probe, 14mm gasket | 10-03217 | . | P-114-F-MVP | Fast Response TIT probe, 1/4" NPT, .125" D | 10-03226 | . |
| P-102-12-MVP | CHT probe, 12mm gasket | 10-03218 | . | P-120-MVP | Oil Temp probe, 5/8"-18 | 10-03227 | . |
| P-102-3/8-MVP | CHT probe, 3/8" gasket, piggy-backs on a primary CHT probe | 10-03219 | . | P-128-MVP | OAT/Carb Temp probe, 1/4"-28 | 10-03228 | . |
| P-110-MVP | Std EGT/TIT probe, Hose Clamp Type, .187"D | 10-03220 | . | P-104-MVP | Universal Temp probe, #6 hole | 10-03229 | . |
| P-110-F-MVP | Fast-Response EGT/TIT probe, Hose Clamp Type, .125"D | 10-03221 | . | XDS-6' | One 6 ft TC harness w/ crimped D-Sub pins. Use to interface any temperature Probe to the MVP system. Specify length at time of order. | 10-03192 | . |

PRESSURE TRANSDUCERS AND MODULES

(Each includes a Cbl-4D-6' harness when ordered w/ the MVP-50 & MVP-50T)

| | | | |
|---------------|---|----------|---|
| PT-30GA-MVP | Pressure Transducer, 0 to 40 PSI (see Accessories page for details) | 10-03232 | . |
| PT-100GA-MVP | Pressure Transducer, 0 to 120 PSI (see Accessories page for details) | 10-03233 | . |
| PT-300GA-MVP | Pressure Transducer, 0 to 300 PSI (see Accessories page for details) | 10-03235 | . |
| PT-3000S-MVP | Pressure Transducer, 0 to 3000 PSI (see Accessories page for details) | 10-03236 | . |
| PT-30ABS-MVP | Absolute Pressure Transducer, 0 to 36 In Hg (Manifold Press or Cabin Altitude) | 10-03238 | . |
| PT-30ALT-MVP | Altitude Transducer | 10-03239 | . |
| PT-60ABS-MVP | Absolute Pressure Transducer, 0 to 70 In Hg (Manifold Pressure) | 10-03240 | . |
| PT-05Diff-MVP | Differential Pressure Transducer, 0 to 60 In Hg (Vac Pressure or Cabin Diff Pressure) | 10-03241 | . |
| PT-04H20-MVP | Differential Pressure Transducer, 0 to 5 In H20 | 10-03242 | . |
| FM-PR-MVP | Allows an EDC temperature channel to measure a pressure (operates w/ any EI MVP Pressure Transducer). Pressure transducer sold separately. | 10-03204 | . |
| DPIM-1-30-MVP | Differential Pressure Interface Module for aircraft that require fuel pressure to be Measured in reference to the upper deck. Includes a PT-30GA pressure transducer to measure the upper deck pressure. | 10-03205 | . |
| Cbl-4D-6' | One 6' 4-wire cable with crimped D-Sub pins. Used to interface any pressure transducer, fuel flow transducer or fuel level probe to the MVP system. Add \$.95 per foot to the price for anything over the standard 6' length. | 10-03183 | . |

FUEL FLOW TRANSDUCERS AND MODULES

| | | | |
|-----------------|--|----------|---|
| FT-60 | Fuel Flow Transducer (Red Cube), .6 to 70+ GPH | 10-01196 | . |
| FT-90 | Fuel Flow Transducer (Gold Cube), 3 to 125+ GPH | 10-01224 | . |
| FT-180 | Fuel Flow Transducer (Black Cube), 5 to 250+ GPH | 10-01197 | . |
| FFDM-1-MVP-FT60 | Fuel Flow Differential Module for aircraft w/ a pressure carburetor. Includes FT-60 or FT-90 transducer to measure the returned fuel. Please specify FT-60 or FT-90 at time of your order. | 10-03244 | . |
| FFDM-1-MVP-FT90 | returned fuel. Please specify FT-60 or FT-90 at time of your order. | 10-03245 | . |
| FM-Flow-P | Measures Fuel Flow from a pulsed injector signal. | 10-03206 | . |

FUEL LEVEL PROBES AND MODULES

| | | | |
|------------------|---|----------|---|
| RELM-4-12 | Resistive Fuel Level Module. Must be used w/ EI's "EDC" to measure up to 4 Resistive Fuel Level Sensors. | 10-02772 | . |
| RFLM-4--24 | | 10-03231 | . |
| P-300C | 3/4" Capacitive Fuel Level Probe w/ Accessories. (see our Accessories Page for details.) Specify Probe length at time of order. | 10-00382 | . |
| P-300C-Mini-1/8" | | 10-03193 | . |
| P-300C-Mini-1/4" | 3/16" Capacitive Fuel Level Probe (see our Accessories Page for details) | 10-03194 | . |

VOLTS AND AMPS MODULES AND SHUNTS

| | | | |
|---------------|--|----------|---|
| FM-VA-MVP-50 | Volts/Amps Module. Allows any temperature or pressure channel on EI's EDC to measure Voltage and Current on a separate bus. Comes w/ an S-50 or S-300 shunt. | 10-03247 | . |
| FM-VA-MVP-300 | | 10-03248 | . |

MVP SCREEN ANNUNCIATOR INTERFACE UNITS

| | | | |
|--------|--|----------|---|
| VI-221 | Voltage Interface Unit. Allows any temperature or fuel level channel on our EDC to measure the output voltage of any device. This voltage measurement can then be used to drive an annunciator (Canopy Latch, Gear Lights, Baggage Door, etc.) that will be displayed on the MVP screen. | 10-03187 | . |
|--------|--|----------|---|

ELECTRONICS INTERNATIONAL INSTRUMENTS



ELECTRONICS INTERNATIONAL PANEL PACKAGES

PACKAGE A - Includes: 1. US-8: All EGT's, all CHT's, OAT, carb. Temp, 16 programmable upper limits, 16 programmable lower limits, 2 programmable differential limits and a programmable shock-cooling limit. 2. FP-5: Fuel flow, Rem, used time to empty, fuel pressure, 2 programmable low fuel limits, 1 programmable time to empty limit, programmable high and low pressure limits, programmable K factor, programmable fuel weight and programmable display for gallons or pounds. 3. R-1: RPM w/high warning, tach time and flight time. 4. M-1: Manifold pressure to .1" Hg. w/high warning. 5. OPT-1: Oil pressure and oil temperature w/high and low warnings. 6. VA-1A: Volts and amps with discharge and high voltage warnings. • Total pkg will fit in a 5" x 7.5" space with no external boxes. • Includes all probes, 6' cables, transducers, accessories and a free LED front panel intensity control pot. **CALL FOR SPECIAL PRICES**

PACKAGE B - Includes: 1. EAC-1: One channel of EGT, CHT and OAT. The EGT and CHT may be upgraded to an analyzer with the addition of a remote switch. 2. FP-5: Fuel flow, Rem, used, time to empty, fuel pressure, 2 programmable low fuel limits, 1 programmable time to empty limit, programmable high and low pressure limits, programmable K factor, programmable fuel weight and programmable display for gallons or pounds. 3. R-1: RPM w/high warning, tach time and flight time. 4. M-1: Manifold pressure to .1" Hg. w/high warning. 5. OPT-1: Oil pressure and oil temperature w/high and low warnings. 6. VA-1A: Volts and amps with discharge and high voltage warnings. • Total pkg will fit in a 5" x 7.5" space with no external boxes. • Includes all probes, 6' cables, transducers, accessories & a free LED front panel intensity control pot. **CALL FOR SPECIAL PRICES**



SUPER CLOCK INSTRUMENTS

ASC-5A - Displays Local & Zulu Time in 12 or 24 hr format, Up & Down Timers w/ alarms, Altitude (as seen by ATC), and OAT. Several programmable alarms, including Assigned Altitude, Level Off, Deviation Alarm and an Approach Alarm + a recurring alarm to alert you at a programmable interval, for checking fuel. P/N 10-02914

SC-5 - Displays Local (12 or 24-hour format) & Zulu Time. 10-year Lithium battery keeps the clock running even if the a/c battery is removed. Displays an Up Timer, which starts running when the engine is started, acting as an automatic Flight Timer. The Up Timer may be started, stopped or reset. Recurring Alarm may be set to alert you at appropriate time intervals, e.g., if set for 30 minutes, there will be an alarm at 30 minutes, 60 minutes, 90 minutes, etc. Alarm can be used as a reminder to check fuel level or switch tanks at set time intervals. P/N 10-01612



FUEL LEVEL INSTRUMENTS

For TC holders, STC holders or Experimental Aircraft No STCs. FL-1CA Fuel Level Instrument. The FL-1CA is to be used w/ EI's P-300C Capacitive Fuel Probe (custom order probe length from 6" to 20'). The FL-1CA features a 210 degree Arc of LEDs for an excellent "field of vision" reference and a Digital Display. Can display in gallons (one or one-half gallon increments), pounds or liters. Specifications: 2 1/4" Mount, 3.65" Depth, 10 Oz. Unit. Viewable in direct sunlight and Backlit for night operations.

| Model | Description | Part No. | Price |
|--------------|---|----------|-------|
| FL-1CA | The FL-1CA is to be used w/ EI's P-300C capacitive fuel probe (order from 6" to 20' long). 210 degree LED arc + a digital display. Can display in gallons (one or one-half gallon increments), pounds or liters. Specifications: 2 1/4" Mount, 3.65" Depth, 10 Oz. Unit, Viewable in direct sunlight and Backlit for night operations. | 10-00386 | . |
| FL-1RA-12/24 | The FL-2RA-12 designed to be used on a 12-volt system w/ resistive fuel probes. Features a 210 degree LED arc + a digital display. Max resistance between 90-270 ohms. Can display in gallons (one or one-half gallon increments), pounds or liters. Specifications: 2 1/4" Mount, 3.65" Depth, 10 Oz. Unit, Viewable in direct sunlight and Backlit. | 12V | . |
| | | 24V | . |
| FL-2CA | The FL-2 is a fuel level instrument featuring dual 90 degree LED arcs + a digital display. The FL-2 can display in gallons (one or one-half gallon increments), pounds or liters. Specifications: 2 1/4" Mount, 3.65" Depth, 10 Oz. Unit, Viewable in direct sunlight, Backlit, Operates from 7.5 to 35 volts at .3 amps. | 11-03788 | . |
| FL-2RA-12/24 | The FL-2 is a fuel level instrument featuring dual 90 degree LED analog displays and a digital display. The FL-2 can display in gallons (one or one-half gallon increments), pounds or liters. FL-2 Specifications: 2 1/4" Mount, 3.65" Depth, 10 Oz. Unit, Viewable in direct sunlight, Backlit, Operates from 7.5 to 35 volts at .3 amps. Please specify 12/24 volt at the time of order. | 11-03789 | . |
| FL-2RA-24 | The FL-2 is a fuel level instrument featuring dual 90 degree LED analog displays and a digital display. The FL-2 can display in gallons (one or one-half gallon increments), pounds or liters. FL-2 Specifications: 2 1/4" Mount, 3.65" Depth, 10 Oz. Unit, Viewable in direct sunlight, Backlit, Operates from 7.5 to 35 volts at .3 amps. Please specify 12/24 volt at the time of order. | 11-07104 | . |



MVP-50T GLASS PANEL MULTI-FUNCTION DISPLAY

Replaces 15 engine gauges and 50 functions. Remarkable full-color, enhanced TFT Glass Display (excellent viewability, even in direct sunlight) Pilot-Programmable Colors, Range Markings, Limits and Voice Alarms (for each parameter monitored) "System Page" to display Trims, Flaps, Wheel Status Lights, and many other system parameters and annunciators. 27 Pilot-Customized Annunciators at the top of the "Main Page". Fuel Management, Timers, Clocks, Date, Weight & Balance. Data Recording (.33 - 6 min, 665 hours @ 6 seconds). Pilot-Customized Checklists and Flight Plans. General Info, Flight Log, Start Log, Max & Min Data. Pilot easily can generate Custom Screens and download them to the MVP-50P through the USB port. Help Screen, GPS Interface and Data, Fuel Efficiency, Fuel Used for the Trip, Fuel Used Since Fill Up, Time to Empty, Distance to Empty, Fuel to Way Point, Time to Way Point, Distance to Way Point, Fuel Reserve, Time Reserve, Distance Reserve, Up Timer, Down Timer, Flight Timer, Engine Hours, Cycles, Date, Local and Zulu Time. Other functions, such as Fuel Level, Gyro Vac, Hydraulic Pressure, etc., may be added by purchasing an appropriate probe & harness, or transducer, etc. See our Accessories, "Probes and Transducers" section on previous page. Using your current Resistive Fuel probes require our FFLM-4-XX to interface with the MVP-50T System. Torque, Oil Pressure & Temperature, Fuel Flow & Pressure, OAT, Amps, Volts, Multiple Fuel Screens, Pre-wired Harness, N1 and N2 hookups. Includes EDC (Engine Data Converter), cables and harnesses, transducers, shunt (for amps), USB Download/Upload Memory Stick, and our AV-17CP (Voice Warning Control Panel). Only 5.55"x 5.15"x 2.4" deep

| Models | Description | Part No. | Price |
|--|--|----------|------------|
| MVP-50T-PT6 | Pratt & Whitney PT-6 Turbo Prop Pkg | 10-03160 | . |
| MVP-50T-W | Walters Engine Turbo Prop Pkg | 10-03161 | . |
| MVP-50T-G | Garrett Turbo Prop Pkg | 10-03162 | . |
| MVP-50T-L | Lycoming Turbo Prop Pkg | 10-03163 | . |
| MVP-50T-A | Allison Turbo Prop Pkg | 10-03164 | . |
| MVP-50T-J85 | General Electric J85 Jet Engine Pkg | 10-03165 | . |
| MVP-50T-L39 | L39 Aircraft Pkg | 10-03166 | . |
| MVP-50T-WJ33 | WJ33 Aircraft Pkg | 10-03201 | . |
| OPTIONAL INTERFACES AVAILABLE FOR PKGS LISTED ABOVE | | | |
| -OPT | Allows the MVP to provide Engine Data to an OP Technologies unit. | 10-03169 | \$667.00 |
| -RTDO | Real-Time Data Out. Can be used to provide Telemetry Data for UAV's, racers and other applications. | 10-03168 | . |
| ACCESSORIES | | | |
| USB-64 | USB Memory Stick, 64 MB or larger. Used to upload & download data to the MVP. | 10-03186 | . |
| CP-1-MVP | LED Intensity Control Pot. External pot used to control the display intensity. | 10-03211 | . |
| EDC-33T | Turbo Prop/Jet Engine Data Converter. Adding this second EDC to the MVP allows monitoring of additional temperatures, pressures, annunciators and other functions. | 10-03185 | . |
| MVP-50T Display Head | May be used to display parameters in a second location. (display only) | 10-03202 | \$3,550.00 |

INSTRUMENTS FOR TURBOPROP AIRCRAFT



| Model | Description | Part No. | Price |
|--------------|---|----------|-------|
| 10-03249 | RPM INSTRUMENT, TSOD, PMAd (no STCs). Digital 1% Resolution Display + 210 degree LED arc display with green, yellow and red LEDs. 2 1/4" Mount, 3.65" Depth, 10 Oz. Viewable in direct sunlight, Backlit, Operates from 7.5 to 30 volts @ .3 amps. | 10-03249 | . |
| R-1-N1 | RPM INSTRUMENT, TSOD, PMAd (no STCs). Digital 1% Resolution Display + 210 degree LED arc display with green, yellow and red LEDs. 2 1/4" Mount, 3.65" Depth, 10 Oz. Viewable in direct sunlight, Backlit, Operates from 7.5 to 30 volts @ .3 amps. | 10-03264 | . |
| R-1-N2 | RPM Instrument displayed in RPM. TSOD, PMAd (no STCs). Digital 10 RPM Resolution Display + 210 degree LED arc display with green, yellow and red LEDs. 2-1/4" Mount, 3.65" Depth. | 10-03265 | . |
| M-1T | PRESSURE OR TORQUE INSTRUMENT, TSOD, PMAd (no STCs). 1 PSI or 1% Resolution + 210 degree LED arc display with green, yellow and red LEDs. 2 1/4" Mount, 3.65" Depth, 10 Oz. Instrument. Backlit. | 10-03266 | . |
| M-1-ITT | INERT-Turbine Temperature Instrument IN Celsius. TSOD/PMAd (no STCs). Digital display (1 degree C resolution) + 210 degree LED arc with green, yellow and red LEDs. 2 1/4" Mount, 3.65" Depth, 10 Oz. | 10-03267 | . |
| M-1-TOT | Turbine Outlet Temperature INC. TSOD/PMAd (no STCs). | 10-03267 | . |
| OPT-1-FV-60 | AC BUS VOLTAGE & FREQUENCY, TSOD/PMAd (no STCs). The "-60" instrument is for a 60 Hz. bus and the "-400" instrument is for a 400 Hz. bus. Accurate Digital Display can be switched between Voltage and Frequency, displays in Volts and Hz. 2 1/4" Mount, 3.65" Depth, 10 Oz. Instrument. | 10-03268 | . |
| OPT-1-FV-400 | AC BUS VOLTAGE & FREQUENCY, TSOD/PMAd (no STCs). The "-60" instrument is for a 60 Hz. bus and the "-400" instrument is for a 400 Hz. bus. Accurate Digital Display can be switched between Voltage and Frequency, displays in Volts and Hz. 2 1/4" Mount, 3.65" Depth, 10 Oz. Instrument. | 10-03269 | . |

ELECTRONICS INTERNATIONAL ACCESSORIES

AP-7H OR AP-7V LED ANNUNCIATOR PANEL



(H = Horizontal Mount; V = Vertical Mount) When mounted in front of the pilot, the AV-7 Annunciator Panel's bright red LEDs give a quick warning of any out-of-limit condition. Can be connected to these E.I. instruments: US-8A or SR-8A, FP-5(L) and/or FL-2, R-1, M-1, and OPT-1. A control switch will dim or turn off the warning LEDs. Simple to install (requires only 8 ea. 1/2" holes to mount). Connect to a small 3" x 2" x 1" Control Box tie wrapped to a wire bundle under the instrument panel. Size: 5.3" x .9", 10 Oz. Kit, Operates on a 12 or 24-volt system. Includes: Annunciator Panel, Control Box and all wires and connectors.

Vertical..... P/N 10-03288
Horizontal (Pictured)... P/N 10-03289

AL-1(X) CHROME ANNUNCIATOR LIGHT



(X) = "R" for Red, "Y" for Yellow, "B" for Blue, "G" for Green or "O" for Orange. The AL-1 makes an excellent indicator light for displaying boost pump on, gear status, power on, flags, etc. Also, it can be used as a remote warning light for any E.I. instrument featuring an external warning line. The AL-1 is more attractive, operates on less power and is smaller than old-fashioned indicator lights.

The AL-1 has a service life of over 1000 times that of incandescent bulbs. Mounts in a 5/16" hole. Size: .4" diameter x 1" depth. Operates on a 12 or 24-volt system. Comes with 32" leads.

P/N 10-03291



AV-17 VOICE ANNUNCIATOR

The AV-17 can provide up to 17 verbal warnings through your headset, ending the need to constantly scan the instrument panel. Eliminate concern about missing an alarm at a critical moment. The instant a monitored alarm occurs, the Voice Annunciator will chime in the headset and a pleasant female voice will announce a phrase, such as: "Check Oil Pressure," or "Check Altitude," etc. The AV-17's voice alarm in the headset provides an instant and clear understanding of what's going on in the cockpit without the hassle of having to scan instruments, decipher functions, interpret readings or translate numerous bells, buzzes or beeps. The AV-17 connects to the headset through the Audio Panel or Intercom or may be connected directly to the headset. The AV-17 receives most of its warning signals from any one or more of Electronics International's instruments which feature a warning light. However, other alarm inputs can be received from any warning device that drives a horn or light. It is not necessary to activate all 17 of the AV-17's warnings. A "Check Bus Voltage" warning is built into each AV-17. Further voice alarms can be activated as EI instruments are added to the panel. The AV-17 is compact. A 4.1" x 2.6 x 1.7" Control Box tie wraps under the instrument panel. A 1" x 1" Control Panel mounts on the aircraft instrument panel. The Control Panel allows you to turn the Voice Annunciator on or off, and allows you to acknowledge, and thereby deactivate, any active alarm for either 1 minute or 10 minutes. The AV-17 voice alarms are activated by pulling the appropriate control line to ground (0 volts).

AVI-1 MODULE - This Module allows a positive voltage to activate one AV-17 control line. Use with the AV-17 when utilizing inputs from gauges other than Electronics International's.

AV-17..... P/N 10-00181
AVI-1..... P/N 10-03292

FIELD TEST DEVICES

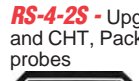
| Models | Description | Part No. | Price |
|---------|--|----------|-------|
| FCD-T | Outputs a calibrated temperature signal. May be used to test any E.I. temperature instrument (approximately 1400°F). | 10-03294 | . |
| FCD-FF | Outputs a variable fuel flow signal. | 10-03295 | . |
| FCD-FP | Outputs a variable fuel pressure signal (0 to 50+ PSI). | 10-03296 | . |
| FCD-OP | Outputs a variable oil pressure signal (0 to 100+ PSI). | 10-03297 | . |
| FCD-RPM | Outputs a variable RPM signal (800 to 2800 RPM). | 10-03298 | . |
| FCD-AMP | Outputs a 50mV signal. Used to test the VA-1A-XX Volt/Amp Instrument. | 10-03301 | . |
| FCD-CFL | Outputs a variable capacitive fuel level signal. | 10-03302 | . |
| FCD-RFL | Outputs a variable resistive (0-250 ohms) fuel level signal. | 10-03303 | . |

REMOTE SWITCHES

A remote switch may be used to upgrade many single-channel E.I. instruments to multi-channel EGT and/or CHT engine analyzers. This is an excellent way to insure your engine is operating properly. Specifications for all switches: Body - 1"x 1"x 1.5" depth, front panel - 2"x 1.15", STC'd / PMA'd



RS-4-1S - Upgrades any unit to read four channels of EGT or CHT, Package includes: Unit, (3) 6' cables, (3) probes. Specify probe type with order. P/N 11-01688



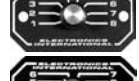
RS-4-2S - Upgrades any two channel unit to read four channels of EGT and CHT, Package includes: Unit, (6) 6' cables, (3) EGT probes, (3) CHT probes P/N 11-01689



RS-6-1S - Upgrades any unit to read six channels of EGT or CHT, Package includes: Unit, (5) 6' cables, (5) probes. Specify probe type with order. P/N 11-01690



RS-6-2S - Upgrades any 2 channel unit to read six channels of EGT and CHT, Package includes: Unit, (10) 6' cables, (5) EGT probes, (5) CHT probes P/N 11-01691



RS-8-1S - Upgrades any unit to read eight channels of EGT or CHT, Package includes: Unit, (7) 6' cables, (7) probes. Specify probe type with order. P/N 11-01692



RS-12-1S - Upgrades any unit to read 12 channels of EGT or CHT, Package includes: Unit, (11) 6' cables, (11) probes. Specify probe type with order. P/N 11-01693

PRIMARY REMOTE SWITCHES

REMOTE SWITCHES for use w/ EI 1 or 2 channel EGT/CHT instruments. STC'd, PMA'd Electronics International gauges are available to replace your Primary Engine Instruments. Available for single and twin engine applications.

RS-5-1PS - Upgrades any primary TIT/CHT unit to read 4 channels of EGT or CHT, Package includes: Unit, (4) 6' cables, (4) probes. 15 oz. kit Specify probe type with order..... P/N 11-01694

RS-5-2PS - Upgrades any primary TIT/CHT unit to read 4 channels of EGT and CHT, Package includes: Unit, (8) 6' cables, (4) EGT probes, (4) CHT probes. 2.2 lb. kit..... P/N 11-01695

RS-7-1PS - Upgrades any primary TIT/CHT unit to read 6 channels of EGT or CHT, Package includes: Unit, (6) 6' cables, (6) probes. 27 oz. kit. Specify probe type with order..... P/N 11-01696

RS-7-2PS - Upgrades any primary TIT/CHT unit to read 6 channels of EGT and CHT, Package includes: Unit, (12) 6' cables, (6) EGT probes, (6) CHT probes. 3.2 lb. kit..... P/N 11-01697

PROBES

P-100 CHT Probe; screw-in type, Standard with most kits. Can be used in a pressure environment. 700°F max. P/N 10-00808

P101 - CHT Probe; Military Bayonet type, 1/4 turn locking for quick removal. To be used with the A-101 adaptor. 700°F max. P/N 10-00438

A101 - CHT Adaptor; 3/8" - 24, to be used with the P-101 CHT probe. P/N 10-00374

P-102 - CHT Probe; Gasket type, 18mm, 700°F maximum. P/N 10-01368

P-110 - EGT/TIT Probe; Hose clamp type, used with 13/64" hole. Standard with most kits. Weight: 1.6 oz. P/N 10-01591

FAST RESPONSE P-110 - EGT/TIT Probe; Hose clamp type, used with .130" hole. Optional with most kits. Weight: 1.6 oz. P/N 10-00376

Probe only P/N 10-00376

Probe w/6' cable..... P/N 10-00377

P-111 - TIT Probe; 1/8" NPT with adjustable depth. (with cable) P/N 10-25235

P-112 - TIT Probe; 7/16"-20, with adjustable depth. (without cable) P/N 10-00378

P-114 - TIT Probe; 1/4" NPT with adjustable depth. (without cable) P/N 10-00379

P-120 - Oil Temp. Probe; Can be used in a pressure environment, 700°F max. P/N 10-25245

P-128 - OAT/Carb Temp. Probe; uses a precision connector, can be used in a pressure environment, 700°F max. P/N 10-00301

P-104 - Universal Probe; Used to measure surface temperatures, 700°F max. P/N 10-00380



ENGINE MONITORS



GRAPHIC ENGINE MONITOR (SINGLE ENGINE)

Graphic Engine Monitor - STC'd Single Engine - Normally Aspirated 4 or 6 Cylinder. The GEM 602 is designed for use with all 4 or 6 cylinder piston engine aircraft. The instrument graphically displays up to 12 critical engine temperatures in a single instrument in an easy-to-read bar-graph format on a brilliant plasma display. **Features:** Displays up to 12 EGT, CHT temperatures. Lean Mode: is used during cruise to identify the leanest cylinder. Lean Mode can be entered at any time. The GEM's microprocessor analyzes EGT temperatures and indicates the leanest cylinder by blinking the appropriate column. Monitor Mode: each time that Monitor Mode is entered, the GEM microprocessor stores the EGT values into memory. Should any cylinder's EGT subsequently rise 50°F or more, the corresponding column will begin blinking to signal change in fuel flow or ignition. Test Mode: is designed into the GEM system should trouble be suspected. Entering the test Mode causes each bar column to stack up, a bar at a time, until fully illuminated, then blank. Each successive column until all six have been done. Automatic selection of the correct number of cylinders. Automatic intensity control for all lighting conditions. Whether you fly a home-built, war bird, or latest model aircraft, the GEM 602 provides a complete picture of EGT and CHT at a glance.

| P/N | Model | Description | Price |
|----------|--------|-------------------------------------|-------|
| 10-18805 | GEM603 | Single Engine, 4 cyl., turbocharged | . |
| 10-18810 | GEM603 | Single Engine, 6 cyl., turbocharged | . |

GEM PROBES

GEM 602 Wire Harness P/N 10-03576
 #2870 EGT Probe /ea.
 #2852 CHT Spring Probe /ea.
 #2853 CHT Gasket Probe /ea.
 #2855 CHT Adapter Probe* /ea.
 #2856 CHT Probe** /ea.
 *Use with factory spring probe **Use with 3/8 x 24 threaded factory probe



3 UNIVERSAL ENGINE MONITOR

The E3 universal engine monitor combines in one compact 2.25" format instrument all that is needed to monitor most smaller aircraft engines from two-stroke ultralight engines to medium sized four strokes such as from Rotax, Continental and Lycoming. Also most automotive engine conversions can benefit from the use of the E3 engine monitor. P/N 11-06442

INSIGHT G3 GRAPHIC ENGINE MONITOR



TC CHT PRIMARY STC PENDING - Single Engine - Normally Aspirated or Turbo-Charged with SD Data Card for 4, 6 or 9 Cylinder. **ALL NEW G3 UNITS ARE FACTORY CALIBRATED.** Combines all the ergonomic advantages of the original GEM 602/603/610 with greatly enhanced capabilities including: **Features:** • Bright bold LCD color display with many screens, and dozens of new functions • 100 times the power of the previous generation • 100 thousand times the data log space (Never run out of space) • Engine vibration measurement and analysis • Specialized analysis for propeller balance, turbulence and even landing shock • Integrates, logs data from G3, TAS Air Data and GPS for the complete picture • SD Card stores all engine, air, winds aloft and fuel data (No more lost data) • Entire aircraft life history directly on SD card in PC compatible form • Specific functionality for safe Lean of Peak operation with no detonation • Oil Temperature and Pressure • Manifold Pressure, Fuel Flow and RPM • OAT • Carburetor and Alternator Temperature • Fully compatible with GEM 602, 603 and 610 Installations (Easy Upgrade) • Buss Voltage

G3 Systems (4 Cylinder) P/N 10-03195
 G3 Systems (6 Cylinder) P/N 10-03196
Upgrade from GEM 602, 603, 610 to G3
 4 Cylinder Upgrade P/N 10-03198
 6 Cylinder Upgrade P/N 10-03197



INSIGHT TRUE FLOW 500

A new concept in fuel flow computers, True Flow 500 is designed to give pilots a simple and efficient way of reading fuel information directly on the GPS fuel pages. Eliminates tedious installation and set-up procedure and set-up procedures that are required for other fuel flow computers. Install True Flow 500 on top of the engine and connect fuel lines, GPS power, ground and RS232 RX input. Works on fuel injected or carbureted engines, but not on carbureted engines with a fuel return line. Many other STC's for installation on certificated aircraft. P/N 11-01913

GEMINI 1200 SYSTEM (TWIN ENGINE)



Graphic Engine Monitor - TC & FAA PRIMARY STC PENDING
 Twin Engine - Normally Aspirated or Turbo-Charged with Data logging for 2, 4, 6, 7, 8 and 9 Cylinder.
 Designed for twins, the GEMINI 1200 has all of the same advanced features as the GEM 610.

ALL NEW 1200 UNITS ARE FACTORY CALIBRATED.
Features:•Display up to 30 temperatures. •IAT Temperature. •Side-by-side display of Left/Right or Front/Rear Engines. •4 digit readout of any EGT, CHT, TIT, OAT and IAT.

| P/N | Model | Description | Price |
|----------|----------|----------------------------------|-------|
| 10-18815 | GEMINI | Twin Engine, 4 cyl., normal asp. | . |
| 10-18820 | GEMINI | Twin engine, 6 cyl., normal asp. | . |
| 10-18825 | GEMINI | Twin Engine, 4 cyl., turbo (1T) | . |
| 10-18830 | GEMINI | Twin Engine, 4 cyl., turbo (2T) | . |
| 10-18835 | GEMINI | Twin Engine, 6 cyl., turbo (1T) | . |
| 10-18840 | GEMINI | Twin Engine, 6 cyl., turbo (2T) | . |
| 10-02142 | 1200-021 | Insight OAT Probe | . |

GEM 610/1200 NOW WITH PRIMARY INSTRUMENT REPLACEMENT STC

GEM-610 SYSTEMS



Graphic Engine Monitor - TC & FAA PRIMARY STC PENDING Single Engine - Normally Aspirated or Turbo-Charged with Data logging for 4 or 6 Cylinder. ALL NEW GEM 610 UNITS ARE FACTORY CALIBRATED.
Features:•Selectable Fahrenheit/Celsius Temperatures.

•Normalization Mode: allows easy observation of any change in EGT during cruise flight. The GEM will memorize current EGT indications and electronically adjust bar graph display to align all EGT columns with the "Reference Asterisk". Any change in EGT will instantly obvious. •Lean Mode: is used during cruise to identify the leanest cylinder. Lean Mode can be entered at any time. The GEM's microprocessor analyzes EGT temperatures and indicates the leanest cylinder by blinking the appropriate column. •Monitor Mode: GEM continuously indicates actual EGT pattern in optimum resolution. Real CHT shown for each cylinder. •Trend Indicators. •OAT Sensing. •Dual TIT Annunciators. •Soft Hobbs Meter/Clock Calendar. •Automatic Data Logging of Vital Engine Temperatures into non-volatile memory. •Wireless Infrared Interface •Software configurable. •Back-lit CHT scale. •Automatic self-test at start-up. •More than a decade after the GEM revolutionized engine monitoring, GEM 610 is "The Next Generation" in engine monitoring and diagnostic systems. Specifications: •Size: 2-1/4" panel mount. •Weight installed is 3 lbs. •Power: 10-30VDC.

| | |
|--|--------------------|
| Single Engine 4-cyl. GEM-610..... | P/N 10-18845 |
| Single Engine 6-cyl. GEM-610..... | P/N 10-18846 |
| Single Engine 4-cyl. turbo GEM-610 | P/N 10-18805 |
| Single Engine 6-cyl. turbo GEM-610 | P/N 10-18810 |

J.P. INSTRUMENTS FUEL SCAN -450



Provides continuous display of fuel burned in gal/hour (liter and lbs. available on special order). Also provides total fuel used, fuel remaining, endurance in hours and minutes, fuel re-quired to next waypoint, fuel reserve at next waypoint, and nautical miles/gal. Que lights indicate which function is being displayed in lower display. Auto button starts an automatic scan of the functions. Step button can index info forward or backward. Will mate with an old Shadin or Hoskins system, and will talk to a panel mount or handheld GPS. Fits in standard 2.25" instrument hole and weighs only 5oz. Depth: 1.5". Complete with instrument harness and a Flow Scan 201 or 231 transducer. Ideal for experimental aircraft. FuelScan 450 is FAA approved for certified aircraft. This comes with a Fuel Pump Transducer. The Components Included with FS450: • FS 450 unit • 450 Fuel Flow Harness • Aeroquip Red Firesleeve • 201 Xducer • Install Manual with Pilots Guide, STC, and FMS

| | |
|---|-------------------|
| FS 450 Scanner Fuel Pump..... | P/N 10-00135..... |
| Fuel Scan 450 Gravity Fed+ | P/N 10-00134..... |
| FS-450R Fuel Scan Rotax (2 Transducers for aircraft with return fuel line)..... | P/N 10-00266..... |
| FS450-M Twin Engine..... | P/N 10-00735..... |
| FS-450M-3 3-1/8" Twin Engine | P/N 10-03692..... |

CALL FOR SPECIAL PRICE!

EDM 711



Primary version of EDM 700/800 system to replace original engine gauges. FAA approved. 700/800 one function included. Primary options are TIT oil Temperature, and CHT.

| | |
|---------------------------------------|--------------------|
| EDM711-4C (configured as 700) | P/N 10-00641 |
| EDM711-6C (configured as 700) | P/N 10-00642 |
| EDM711-4C (configured as 800) | P/N 10-00643 |
| EDM711-6C (configured as 800) | P/N 10-03858 |
| Add primary functions to EDM711 | P/N 10-00647 |
| Add Fuel Flow to EDM711 | P/N 10-00650 |

ENGINE SCANNERS



J.P. INSTRUMENTS EDM-700 DIGITAL AND ANALOG EGT/CHT SCANNERS

All pilots know that to run their engines at peak performance means maximum efficiency! Maximum efficiency translates to substantial savings in fuel burned and engine maintenance. JPI's EDM-700 assures pilots of **Peak Precision Engine Performance Simply and Economically**. The EDM-700 includes: Computer assisted diagnostics for troubleshooting the entire system, 2-1/4" panel mount, Normalize mode, Graphics resolution, Automatically finds the first EGT to peak, display of OIL, OAT, IAT, CDT, voltage, shock cooling of two TIT's, one degree temperature resolution, selectable °C or °F, all functions have Hi/Lo pilot programmable limits, supplied with JPI's well known, grounded, fast response probes, TSO quality, FAA TSO/STC approved, 3 year warranty. All probes, harness, and hardware included. **Data Recording** - All EDM-700 and EDM-760 systems come with data recording and provide long term trend monitoring for maintaining ultimate engine health. Data Recording capability records and stores all displayed parameters and, at a later time, transfer the info to a palmtop or laptop PC. Retrieve all the data stored in the EDM-700 and 760 or only the new data recorded since your last retrieval. In either case, no data is erased in the EDM unit. PC program supplied with the unit will graph the data for display and use by other programs, such as MS Excel or Lotus 123. EDM-700 or 760 Data Recording contains a date and time clock. You may also program an aircraft ID, such as your aircraft registration no. or your name that will appear in the output data file.

Systems include EGT & CHT probes, harness, memory module, leads, and hardware

EDM SINGLE ENGINE SYSTEMS

| Description | Part No. | Price |
|---|-----------------|--------------|
| EDM-700-4C 2-1/4" (No Fuel Flow) | 10-00262 | . |
| EDM-700-4C 3-1/8" (No Fuel Flow) | 10-02008 | . |
| EDM 700-4C with Fuel Flow 201 2-1/4" (Fuel Pump) | 10-00263 | . |
| EDM-700-4C with Fuel Flow 201 3-1/8" (Fuel Pump) | 10-02009 | . |
| EDM 700-4C with Fuel Flow 231 2-1/4" (Gravity Fed) | 10-02845 | . |
| EDM 700-4C with Fuel Flow 231 3-1/8" (Gravity Fed) | 10-02849 | . |
| EDM-700-6C 2-1/4" (No Fuel Flow) | 10-00264 | . |
| EDM-700-6C 3-1/8" (No Fuel Flow) | 10-02012 | . |
| EDM 700-6C with Fuel Flow 201 2-1/4" (Fuel Pump) | 10-00265 | . |
| EDM 700-6C with Fuel Flow 201 3-1/8" (Fuel Pump) | 10-02013 | . |
| EDM 700-6C with Fuel Flow 231 2-1/4" (Gravity Fed) | 10-02844 | . |
| EDM 700-6C with Fuel Flow 231 3-1/8" (Gravity Fed) | 10-02846 | . |
| EDM-700-8C 2-1/4" (No Fuel Flow) | 10-28095 | . |
| EDM-700-8C 3-1/8" (No Fuel Flow) | 10-02016 | . |
| EDM 700-8C with Fuel Flow 201 2-1/4" (Fuel Pump) | 10-02852 | . |
| EDM 700-8C with Fuel Flow 201 3-1/8" (Fuel Pump) | 10-02017 | . |
| EDM 700-8C with Fuel Flow 231 2-1/4" (Gravity Fed) | 10-02853 | . |
| EDM 700-8C with Fuel Flow 231 3-1/8" (Gravity Fed) | 10-02841 | . |
| EDM-700-9C 2-1/4" (No Fuel Flow) | 10-28100 | . |
| EDM-700-9C 3-1/8" (No Fuel Flow) | 10-02018 | . |
| EDM 700-9C with Fuel Flow 201 2-1/4" (Fuel Pump) | 10-02861 | . |
| EDM 700-9C with Fuel Flow 201 3-1/8" (Fuel Pump) | 10-02019 | . |
| EDM 700-9C with Fuel Flow 231 2-1/4" (Gravity Fed) | 10-02862 | . |
| EDM 700-9C with Fuel Flow 231 3-1/8" (Gravity Fed) | 10-02842 | . |
| Trade-in Price for EDM 700. Basic Gem, (Use old System wire harness and EGT/CHT/TIT Probes) | 10-03611 | . |
| Accessories | | |
| Description | Part No. | Price |
| EDM 700 Transducer (Fuel Pump) | 10-27089 | . |
| EDM 700 Transducer (Gravity) | 10-27094 | . |
| JPI EDM RPM Option | 10-01720 | . |
| TIT,Turbine Inlet Temperature Probe and Sensor | 10-27090 | . |
| EDM-700/800/900 OAT Probe | 10-27095 | . |
| 700/760/800 Oil Temperature Probe & Sender | 10-27100 | . |
| EDM 700 Induction Air Temperature Probe | 10-02277 | . |
| EDM 700 Compressor Discharge Temperature Probe | 10-02278 | . |
| EDM 700 IAT/CDT Induction Air & Compressor Temperature | 10-27105 | . |
| 5050-T CHT Bayonet Probe | 10-18500 | . |
| M-113 CHT Gasket Probe | 10-27093 | . |
| JPI Probe M113-3/8 | 10-03689 | . |
| M-111 Replacement EGT Probe | 10-00830 | . |
| M-5050-A CHT Adaptor Probe | 10-27092 | . |
| EDM PC Interface Cable | 10-27112 | . |
| EDM HP Interface Cable | 10-27111 | . |

BASIC EDM-760 TWIN ENGINE SYSTEMS

The value of Digital engine temperatures for precision engine monitoring is well documented. JPI has merged the Analog and digital information into one gauge. The EDM-760 monitors 29 channels of information with 14 columns of analog information. All EDM's have a built in voltmeter monitoring high and low system voltage. All the enhancements found on the single engine EDM-700 are available in the Twin engine EDM-760, including: Digital display of OAT, TIT, OIL, CARB, IAT, CDT, and EGT/CHT, Shock Cooling displayed in degrees per minute with alarms, Normalize Mode levels the bar graph display for instant identification of engine trends during cruise, Automatically finds first cylinder to peak on each engine. EDM-760 is shipped complete including everything necessary for installation. The package contains Quick response EGT probes, Bayonet CHT probes w/wiring harness, memory module, insulating sleeves, terminals w/mounting screws. Options like Oat, Oil & CDT/IAT are available and can be added later. 3 year warranty on electronics. Size: 3-1/8" display with 14 columns, installed weight = 6 lbs. RS-232 Output port and 1 TIT function are included in the system.

| Description | Part No. | Price |
|--|-----------------|--------------|
| EDM-760-6C 3-1/8" (No Fuel Flow) | 10-28080 | . |
| EDM-760-6C with Fuel Flow 201 3-1/8" (Fuel Pump) | 10-00640 | . |
| EDM-760-6C with Fuel Flow 231 3-1/8" (Gravity Fed) | 10-02851 | . |
| EDM-760-4C 3-1/8" (No Fuel Flow) | 10-28085 | . |
| EDM-760-4C with Fuel Flow 201 3-1/8" (Fuel Pump) | 10-00639 | . |
| EDM-760-4C with Fuel Flow 231 3-1/8" (Gravity Fed) | 10-02847 | . |
| ACCESSORIES | | |
| Description | Part No. | Price |
| EDM PC Interface Cable + | 10-27112 | . |
| EZ Trends (Free with new instrument) | 10-27113 | . |

All Systems which include Fuel Flow come with Transducers. 201 Transducer is for Aircraft with Fuel Pumps. 231 Transducer is for Gravity Fed Aircraft.



SLIM LINE DIGITAL ENGINE INSTRUMENTS BY J.P. INSTRUMENTS

These compact engine instruments from have a bright red display and feature central remote and individual alarms on all gauges. The gauges are easily stackable in a homebuilt aircraft panel, and come complete with sensors. Specify voltage. NOT FAA APPROVED.

TACHOMETER - Features quartz crystal and accuracy of 1 RPM. Resolution is 10RPM and includes red line alarm. Specify engine and magneto models, number of cylinders, voltage, and red line. P/N 10-24900

Manifold Pressure - Features resolution of 0.1 inches mercury, accuracy of 0.1" Hg, solid state sensor, and over boost alarm. Range: 0-50" P/N 10-24910

Outside Air Temperature (O.A.T.) - Features resolution of 1° and has range of -40 to 195°F. P/N 10-24940

Oil Temperature - Features resolution of 1° and over temperature alarm of 235 F. P/N 10-24960

Volt/Ammeter - Features resolution of 0.1 volts/amps and discharge alarm. Ammeter Shunt - (100 Amp) P/N 10-24925

Oil Pressure - gives readout in PSI and features resolution of 1 PSI and an under pressure alarm. P/N 10-24930

Turbine Inlet Temperature (T.I.T) - Features resolution of 1° or 10° and a Hi-temperature alarm at 1650° F. P/N 10-24950

Fuel Pressure - Features Resolution of 1 PSI and under pressure alarm. Slimline Carb 1-8 PSI P/N 10-24970-30B

Slimline Injected 10-32 PSI P/N 10-24970-30A

ENGINE SCANNERS — FUEL COMPUTERS



JPI EDM-730/830

The EDM-730/830 revolutionizes engine monitoring by the integration of brilliant full color graphical LCD display with the extremely popular EDM 700/800 series functionally and yet reduces the package size to the smallest on the market! The EDM-730 packs more features, functionality, and information onto its large full color screen than any other monitor available and features larger characters for easier reading. Oil pressure has also been added to the entire EDM series line. Mounting is a breeze due to its standard 3-1/8" format, and because it can be mounted in either portrait or landscape orientation, thus accommodating virtually any panel configuration. Depth behind the panel is an amazing 2-1/2". The unit is "Plug and Play" compatible with existing EDM-700/800 units. Full Color LCD Display: * More Graphics * Large digits for easy reading. * Full color parameter range markings. * FAA STC/TSO approved. Package Form Factor: * Standard 3-1/8" Mounting from the front. * Face is offset from center to better fit in spaces where other equipment is currently located. * Can be mounted in four different face orientations to satisfy tough mounting scenarios. * Depth is nearly the same as the height of a business card, 2.5". * Plug and play compatible with the JPI EDM-700/800 harnesses for easy upgrade. * Front mounted USB jack for easy software upgrades and data downloads.

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| Model | Part No. | Price |
|----------------------|----------|-------|
| EDM-730-4Cyl | 10-03701 | . |
| EDM-730-4C W/ FF 201 | 10-03717 | . |
| EDM-730-4C W/ FF 231 | 10-03718 | . |
| EDM-730-6C | 10-03703 | . |
| EDM-730-6C W/ FF 201 | 10-03719 | . |
| EDM-730-6C W/ FF 231 | 10-03720 | . |
| EDM-730-7C | 11-07753 | . |
| EDM-730-7C W/ FF 201 | 11-07754 | . |
| EDM-730-7C W/ FF 231 | 11-07755 | . |
| EDM-730-8C | 11-07756 | . |
| EDM-730-8C W/ FF 201 | 11-07757 | . |
| EDM-730-8C W/ FF 231 | 11-07758 | . |
| EDM-730-9C | 11-07759 | . |
| EDM-730-9C W/ FF 201 | 11-07760 | . |
| EDM-730-9C W/ FF 231 | 11-07761 | . |
| EDM-830-4C W/ FF 201 | 10-03721 | . |
| EDM-830-4C W/ FF 231 | 10-03723 | . |
| EDM-830-6C W/FF 201 | 10-03724 | . |
| EDM-830-6C W/FF 231 | 10-03725 | . |
| EDM-830-7C W/ FF 201 | 11-07762 | . |
| EDM-830-7C W/ FF 231 | 11-07763 | . |
| EDM-830-8C W/ FF 201 | 11-07764 | . |
| EDM-830-8C W/ FF 231 | 11-07765 | . |
| EDM-830-9C W/ FF 201 | 11-07766 | . |
| EDM-830-9C W/ FF 231 | 11-07767 | . |

UPGRADE YOUR EDM 700 TO THE EDM 730, OR YOUR EDM 800 TO THE EDM 830.

| Description | Part No. | Price |
|--------------------|----------|-------|
| EDM 700 to EDM 730 | 10-03863 | . |
| EDM 800 to EDM 830 | 10-03864 | . |

JPI EDM 800 DIGITAL/ANALOG SCANNERS WITH AUTOMATIC HORSEPOWER COMPUTING

Dot identifies cylinder associated w/digital info. Automatically advances.

Missing bars indicate CHT Trend. Highest CHT even by 1° show as CHT bar.

EGT (1340°F) left side CHT (376°F) right side

Step button can index info forward or backward. All programming done from front panel simply with 2 buttons, no switches or toggles.



Percent of HP using RPM/MAP/OAT, memory & fuel flow shown constantly.

Last column displays Turbine Inlet Temp or Oil Temp.

Adjustable column height.

Digital display of 24 functions such as DigiScan® Fuel Flow, OAT, TIT, IAT, CDT, & Oil Temp. LF, Lean Find, automatically finds first & last cylinder to peak. Displays histogram of each cylinder that peaks.

The EDM-800 instrument has all the advanced functions of the EDM-700, but incorporates some new features that can only be found on JPI products. No longer do pilots have to waste time looking up and guessing the present percentage of horsepower (HP). There are new easily readable digits located at the top of the EDM display which continually show the percentage of horsepower being used, and can also display RPM. What is truly unique about this new feature is that it can also display HP over lean. HP can be displayed for either carbureted or injected engines, even if they are turbocharged. Now you can be sure that you are within the horsepower limits of your engine, and in IFR conditions, this can be quite a task. At the present time HP is only available on single engine 4 and 6 cylinder engines. The EDM-800 calculates percent of horsepower in an Over lean condition. Lycoming & Continental horsepower charts stop at peak EGT on the first cylinder to peak. Gami has developed a method of going over lean on all cylinders. When you are over lean, every ounce of fuel is burned and used to create horsepower and heat. Cooling is accomplished by excess air in the combustion chamber. JPI has developed an algorithm to calculate horsepower based on fuel consumption and other factors. To obtain HP in this over lean condition you must have an EDM-800 engine analyzer which includes fuel flow, RPM, MAP, OAT, Memory and Gami tuned injectors. In addition to JPI's HP function, the EDM-800 also has a Memory Module that can store up to 25 hours of engine data, which can be downloaded to a laptop or palmtop PC. When using the memory function, all functions of the EDM will be recorded, including Fuel Flow and HP.

| Description | Part No. | Price |
|---|----------|-------|
| EDM-800-4C w/Fuel Flow 201 2-1/4"(Fuel Pump) | 10-02854 | . |
| EDM-800-4C w/Fuel Flow 201 3-1/8"(Fuel Pump) | 10-02021 | . |
| EDM 800-4C w/Fuel Flow 231 2-1/4"(Gravity Fed) | 10-02855 | . |
| EDM 800-4C w/ Fuel Flow 231 3-1/8"(Gravity Fed) | 10-02843 | . |
| EDM-800-6C w/Fuel Flow 201 2-1/4"(Fuel Pump) | 10-02856 | . |
| EDM-800-6C w/Fuel Flow 201 3-1/8"(Fuel Pump) | 10-02857 | . |
| EDM 800-6C w/Fuel Flow 231 2-1/4"(Gravity Fed) | 10-02859 | . |
| EDM 800-6C w/Fuel Flow 231 3-1/8"(Gravity Fed) | 10-02858 | . |

IN



EDM 930 & 930T PRIMARY

True TFT Transflective Custom Display - Display brightness increases with ambient brightness, always sunlight readable. All gages have a Variable Scale and alarm limit to fit your engine. New form factor, panel size: 6" w X 4" h X 2.9" d. Records all engine parameters at 2 to 255 second intervals. Plot the data with EZplot. All probes and transducers supplied. High Flow transducer (120 GPH) included in EDM930T Compatible with and transmits RS-232 data to most MFD's, also sold less the display.

ducers supplied. High Flow transducer (120 GPH) included in EDM930T Compatible with and transmits RS-232 data to most MFD's, also sold less the display.

PISTON FUNCTIONS: • Tachometer/Hobbs • Manifold Air Press • 6 EGT/CHT • Oil Temp. • Oil Press • Fuel Quantity • Fuel Press • OAT • Carb. • Temp • TIT, TIT-2 • CDT • GMT • Volts/Amps 1-2 • Differential EGT • Shock cooling • GPH • Fuel remaining • Fuel Endurance • Fuel required to GPS waypoint • Fuel used • Percent of horse power • Receives data from any GPS and transmits data to any GPS.

FAA TSO PRIMARY

| |
|---|
| EDM-930-4cyl. - Primary Unit STC'd.....P.N 10-02111 |
| EDM-930-6cyl. - Primary Unit STC'd.....P/N 10-02112 |
| EDM-930-7cyl. - Primary Unit STC'd.....P/N 10-02632 |
| EDM-930-8cyl. - Primary Unit STC'd.....P/N 10-02633 |
| EDM-930-9cyl. - Primary Unit STC'd.....P/N 10-02634 |



J.P. INSTRUMENTS EDM-960

The EDM-960 is the latest graphic engine analyzer for Piston Engine Twins from JP Instruments. The EDM-960, STC'd as Primary engine instrument, takes the best from their EDM-760 and adds total engine display monitoring including Tach, % Horsepower, Hobbs, Manifold Pressure, EGT, CHT, Oil Pressure, Oil Temp, Fuel Flow, Outside Air Temp, Volts, and Amps plus optional Fuel Pressure, Fuel Quantity, and Turbine Inlet Temp. Each individual engine display has a scale and alarm limit to fit your particular airplane. As with the popular EDM-760, the EDM-960 has internal memory that records all engine parameters that can be recalled and displayed on your computer to keep track of the health of your engine. Plus: warnings for shock cooling and excess temperatures, leaning assist for both "lean of peak, and "rich of peak".

| Description | Part No. | Price |
|----------------|----------|-------|
| JPI EDM-960-4C | 10-03727 | . |
| JPI EDM-960-6C | 10-03726 | . |
| JPI EDM-960-7C | 11-07750 | . |
| JPI EDM-960-8C | 11-07751 | . |
| JPI EDM-960-9C | 11-07752 | . |

FUEL TOTALIZERS - FUEL GAUGES

SHADIN MINIFLO TOTALIZERS



MINIFLO SYSTEMS - Miniflo is the miniature fuel flow meter which constantly displays fuel flow in the lower windows. The fuel used and fuel remaining functions are continuously computed and can be displayed in the upper window by pressing the appropriate button. Endurance (time remaining) can be displayed in the upper window by using the rotary switch. STC's for most aircraft. Power: 12-28V DC Furnished in gallons readout (pounds also available). Weight: 31 oz. (meter & transducer). Size: 3.25" x 1.25" x 7.5". Miniflo now provides all features of standard Miniflo system plus a Loran interface as described in Digiflo above. This gives the pilot NM/Gal, Gallons to Destination and Gallons of Reserve. Specify aircraft and engine model on all Miniflo orders. Prices vary according to aircraft model.

Single Engine/Loran GPS Miniflo P/N 10-24735.....

SHADIN DIGIFLOW TOTALIZERS



Digiflo-L is a Digital Fuel Management System designed to provide complete fuel management information under real flight conditions without any manual entry of data (after entry of the initial fuel on board information). Digiflo-L is connected to the engine fuel flow transducer for fuel flow information and to the Loran-C or GPS receiver serial

port for navigation data (ground speed, distance and estimated time en route). This system is also capable of transmitting the fuel information to the Bendix/King KLN-88, KLN-90, and Garmin GPS navigation receivers, for additional calculations and display of fuel management data.

Single Engine/Loran GPS Digiflo P/N 10-02212..... **Please Call**
Twin Engine/Loran GPS Digiflo..... P/N 10-02213..... **Please Call**

SHADIN F/ADC-200 FUEL/AIR DATA COMPUTER



The affordable Shadin F/ADC-200 Fuel/Air data computer maximizes aircraft range and fuel economy by providing automatic updating to your GPS for true air speed, winds aloft, wind components, density altitude, OAT, pressure altitude, fuel flow rate, fuel used, fuel required to destination, fuel endurance, and more. Interfaces with most popular GPS units including Bendix King KLN series, Garmin 150, 155, 165, Trimble

2000/3000 series, and Arnav. Please specify aircraft make/model, engine make/model, serial number of aircraft, and GPS make/model at time of order. P/N 10-24768..... **Please Call**

IMPORTANT: For all Shadin orders, please specify engine make and model number; aircraft make and model number; specify gallons, pounds or liters on readout and if Loran or GPS will interface. Specify make and model.

SHADIN SYSTEMS PRICING

Prices for Shadin Microflo, Digiflo, & Miniflo systems vary according to aircraft/engine models. Call Aircraft Spruce for your best pricing on any Shadin system. Aircraft Spruce guarantees to meet or beat any competitor's current advertised prices.



FREE FLIGHT TRA 3000 RADAR ALTIMETER / INDICATOR

The TRA 3000 Radar Altimeter, combined with the TRI40 Radar Indicator, provides precise AGL information from 2,500 feet down to 40 feet. This real-time system offers an extra measure of operational safety during landing, navigation, and hovering. It is especially useful in flying search and rescue missions, forestry operations, pipeline maintenance, offshore helicopter operations, aeromedical emergency medical services, border patrol, and electronic news gathering operations. The transmitter / receiver and antenna fit in a single lightweight & aerodynamic unit that is easy to install.

TRA 3000 Radar Altimeter P/N 10-02522.....
TRI 40 System Altimeter..... P/N 10-02519.....

FREE FLIGHT TRA 3500 RADAR ALTIMETER / INDICATOR



The TRA 3500 Radar Altimeter, combined with the TRI40 Radar Indicator, provides precise AGL information from 2,500 feet down to ground level and consists of a remote unit and dual antennas for greater accuracy. ARINC analog outputs allow seamless integration with other on-board equipment such as flight director systems. Its patented "anti-rotor-modulation" capability prevents altitude wandering while hovering in a helicopter. This real-time radar altimeter system offers an extra measure of operational safety during landing, navigation, and hovering. It is especially useful in flying search and rescue missions, forestry operations, pipeline maintenance, offshore helicopter operations, aeromedical emergency medical services, border patrol, and electronic news gathering operations.

TRA 3500/TRI 40 Altimeter P/N 10-02523.....
TRA 3500 Radar Altimeter P/N 10-02520.....

FUEL LEVEL SYSTEM BY DATCON



This Datcon fuel gauge and senders are designed for use with 12 volt electrical systems in automotive, marine and homebuilt aircraft applications. The gauges have a round 2" diameter case with chrome bezel. Mounting brackets and instructions are furnished. 240-33 Ohms.

.....Gauge No. 100177 with steel case P/N 100177
Lighting Kit (12V) P/N 06215-00

UNIVERSAL SENDER FOR DATCON GAUGES



This Fuel Level Sender has removable mounting plate which can rotate 180° to mount on either right hand or left hand position. For tanks 6"-15" deep.

P/N 05-16710.....

STEARMAN FLOAT-TYPE FUEL SIGHT GAUGE



Float type fuel sight gauge used in Stearman dusters. Plastic tube with fuel level marking and 3/4" male pipe thread fitting. 16" long overall, 8" tank depth. 5-1/2" travel. Use AN867-6 Aluminum

Welding Flange to mate with above gauge. P/N 10435
Aluminum Welding Flange to mate with above gauge. P/N AN867-6.....

SPIRAL ACTION FUEL GAUGE



A precision magnetic gauge for narrow vertical tanks. Rubber float travels on spiral rod to record fuel level on hermetically sealed side-reading dial marked E, 1/4, 1/2, 3/4, F. All aluminum construction. Housing has 1-1/2" NPT male threads for connection to threaded bushing (see below). Available in three lengths:

Length 'L' 15", Float Travel 12-3/4" P/N 05-16900.....
Length 'L' 19", Float Travel 16-3/4" P/N 05-17000.....



Welding Bushings - 6061 aluminum, 2-1/4" O.D., 1/4" wall. Available in 1" & 2" length. Use with welding ring to provide base for attaching to fuel tank with bolts or rivets. Ring may be welded at any point along bushing to permit depth adjustment. Specify bushing length. For use with Spiral Action Gauge.

1" Bushing P/N 10362-1

2" Bushing P/N 10362-2



Welding Ring - 6061 aluminum, 4-3/8" O.D., 2-1/4" I.D. to fit above welding bushings. For use with Spiral Action Gauge. P/N 10363.....

MECHANICAL FUEL GAUGE



Lever-action gauge measures fuel level from full to empty on fractional dial. Matte-white markings on 2" black dial with red "No Take-off" sector below the 1/4 full mark. Cork float has 4" travel. Wire arm 12" long may be cut off to required length, wire bent to 90° angle to secure cork float. 1-13/16" between mounting hole centers. Hermetically sealed dial assembly has magnetically driven, silicone-damped or position pointer to prevent flutter. P/N 05-16700.....

Accessories

Replacement Fuel Float P/N 05-03395.....
Weld Adapt FLANGE 10361 P/N 10361.....
Gasket for 05-16700..... P/N 15-4.....

ULTRALIGHT FUEL FLOW METERS



For ultralight engines, a fuel totalizer provides instantaneous fuel flow rate, fuel used, fuel remaining, time remaining and user settable alarms. Easy to calibrate and simple to use. Install included transducer in fuel line, hook up 12VDC, and go fly! Available in gallons or liters for most twocycle engines.

30LPH W/ Standard P/N MGU001L.....
8GPH W/ Standard P/N MGU001G.....
45LPH W/ High F P/N MGU002L.....
14GPH W/ Transmitting P/N MGU002G.....
Rotax 912 Liter P/N MGU912L.....
Rotax 912 8GPH P/N MGU912G.....
Navman Fuel Flow P/N MIZ001.....

LUSCOMBE/AERONCA TYPE FUEL GAUGE



This direct reading fuel quantity gauge is usable in tank depths up to 9" such as Luscombe & Aeronca. Not FAA approved. Excellent for homebuilt aircraft. Displays fuel level from full to empty. Size: 1-1/2" diameter face.

Fuel Gauge P/N 05-00029
Rebuild kit for Fuel Gauge P/N 05-00031

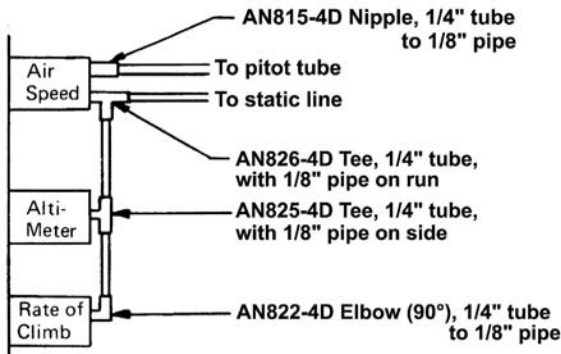
IN

FUEL COMPUTER — INSTRUMENT HOOK-UPS

SELECTING FITTINGS FOR INSTRUMENT HOOKUPS

1. Make sketch of instrument layout.
2. Draw lines showing routing of tubing from instruments to the fire wall or other locations.
3. Determine diameters of instrument lines. 1/4" diameter tubing is used for most instruments. The artificial horizon and directional gyro should have at least 3/8" diameter lines.
4. Select the required AN or Nylo-Seal fittings.

EXAMPLE NO. 1: HOOKUP OF AIRSPEED, ALTIMETER, & RATE OF CLIMB



The aluminum lines (1/4-in. diameter) will be flared and attached to the fittings with AN818-4D nuts and AN819-4D sleeves.

EXAMPLES OF EQUIVALENT AN-TYPE AND NYLO-SEAL FITTINGS

| AN Fitting | Thread Size | Nylo-Seal Fitting |
|------------------|----------------------------|-------------------|
| AN816-4D Nipple | 1/4 tube x 1/8 pipe | 268-N 1/4 |
| AN816-6D Nipple | 3/8 tube x 1/4 pipe | 268-N 3/8 |
| AN818-4D Nut | 1/4 tube | Nuts and Sleeves |
| AN818-6D Nut | 3/8 tube | are included with |
| AN819-4D Sleeve | 1/4 tube | all Nylo-Seal |
| AN819-6D Sleeve | 3/8 tube | fittings. |
| AN822-4D Elbow | 1/4 tube x 1/8 pipe | 269-N 1/4 x 1/8 |
| AN825-4D Tee | 1/4 tube, 1/8 pipe on run | 272-N 1/4 x 1/8 |
| AN826-4D Tee | 1/4 tube, 1/8 pipe on side | 271-N 1/4 x 1/8 |
| AN912-1D Bushing | 1/4 pipe x 1/8 pipe | No Equivalent |

*Use AN816 Nipple and Nyloseal 266-N Female Connector to transition from AN-type fittings to Nyloseal fittings.

Each connection between the aluminum lines and the fittings requires either all AN818-4D nut and AN819-4D sleeve (1/4-in. line) or an AN818-6D nut and an AN819-6D sleeve for 3/8-in. line.

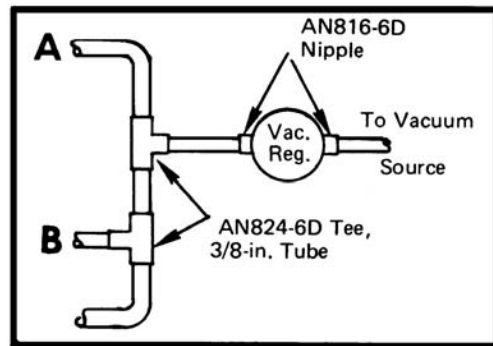
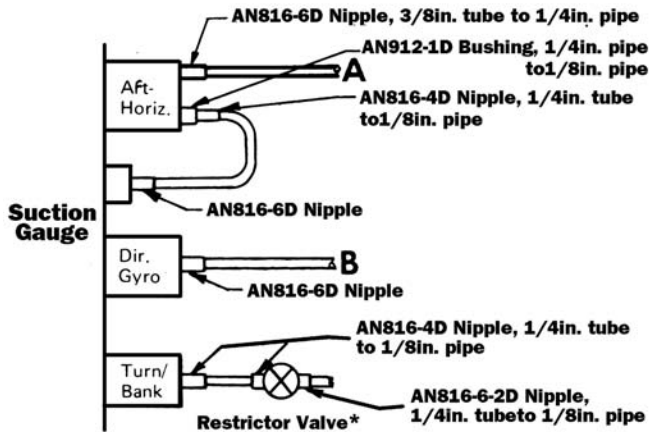
*Turn/Back vacuum set at 2 In. Hg.



HELPFUL HINTS

It is good practice to put some form of water trap in both the pitot and static lines. It should be placed at the lowest practical point in the system between the pressure source and the instrument. The trap can be a simple T-fitting with a cap:

EXAMPLE NO. 2: HOOKUP OF GYRO INSTRUMENTS



IN

ARNAV FUEL COMPUTERS

The FC-10 fuel computer fits into a 2.25 inch instrument hole, and can provide a wealth of information to the pilot. The unit provides information on how much fuel has been burned, how much is still on board, the endurance at the current engine power, and even has a low fuel annunciator that comes in when fuel level falls to the point indicated by the pilot. The fuel computer can be quickly calibrated to calculate at gallons, liters, kilograms, or imperial gallons. The compact unit uses a fuel flow transducer that is attached to the fuel line at the fuel manifold on the engine. The unit has an appropriate serial output that will allow its fuel data to be exported to most LORAN and GPS systems. This makes them more powerful flight management tools by allowing them to access the onboard fuel information. Twin engine pilots will need a second unit, the FT-10. It monitors the second engine and provides that information to the FC-10 for pilot display. The twin installation requires two 2.25 inch holes – one for each monitor. The FT-10 monitors the fuel flow to the second engine, and sends information to the FC-10 that monitors the total fuel used and the total fuel on board. The FC-10 system is STC'd as the primary fuel instrument on all Bonanza and Debonair aircraft except Turbo Bonanzas after 1981. The FC-10/FT-10 system is STC'd for the same function in all 55 and 58 Barons, the Duke series and the Twin Bonanza.



FT-10 Fuel Totalizer displays fuel flow and fuel burned. FT-10 w/116-0201 piston transducer, single engine
 P/N 10-00023

FC/FT-10 twin engine piston fuel flow system. • FC-10 • FT-10 • Piston Transducer (2)
 P/N 10-00024

WHEN ORDERING, PLEASE SPECIFY ENGINE MAKE & MODEL.

OVERHAULED INSTRUMENTS

OVERHAULED INSTRUMENTS

These instruments are overhauled and certified at our affiliated instrument repair facility and are available on an outright purchase basis (stock permitting). For outright purchase, you will be billed the purchase price plus core charge. Core charge is credited upon return of acceptable core. We can also overhaul your instrument at the price shown, and no core charge will be billed. Allow 2-3 weeks for overhaul of your instrument. If in stock, outright purchases can ship within 2 days. Warranty details are included with the instrument.

To send in your instrument for overhaul or to return a core, please contact Aircraft Spruce Customer Service in advance for an RMA number and then ship instrument to Aircraft Spruce East in Georgia.

| Model | Description | Core Charge | PN | Price |
|---------------------------------|--------------------------------|-------------|----------|-------|
| Overhauled 5000 Series Standard | Attitude Gyro | . | 10-03111 | . |
| Overhauled 4000 Series Standard | Directional Gyro | . | 10-03114 | . |
| Overhauled 1U367-002-2 | Attitude Gyro | . | 10-03117 | . |
| Overhauled 1U367-006-6 | Attitude Gyro | . | 10-03118 | . |
| Overhauled 5934 Series | Altimeter | . | 10-03119 | . |
| Overhauled 5950 Series | Altimeter | . | 10-03120 | . |
| Overhauled 371 Series | Altimeter | . | 10-03121 | . |
| Overhauled 671 Series | Altimeter | . | 10-03122 | . |
| Overhauled 7000 Series | VSI (Vertical Speed Indicator) | . | 10-03123 | . |
| Overhauled 8000 Series | Airspeed Indicator | . | 10-03125 | . |
| Overhauled 8025 Series | Airspeed Indicator | . | 10-03126 | . |
| Overhauled 8030 Series | Airspeed Indicator | . | 10-03127 | . |
| Overhauled 8040 Series | Airspeed Indicator | . | 10-03128 | . |
| Overhauled 8100 Series | Airspeed Indicator | . | 10-03129 | . |
| Overhauled 8125 Series | Airspeed Indicator | . | 10-03130 | . |
| Overhauled 8130 Series | Airspeed Indicator | . | 10-03131 | . |
| Overhauled 8140 Series | Airspeed Indicator | . | 10-03132 | . |
| Overhauled EA-5171 thru EA-5176 | Airspeed Indicator | . | 10-03133 | . |

IN

GILL BATTERIES



Founded in 1920 in Redlands, CA, Gill has become the OEM original equipment battery for Raytheon, Cessna, Learjet, Mooney, Piper, Ayres, Airtractor, Maule, and many other manufacturers. Gill's 600 series batteries have proven to be the high performance, high discharge lead-acid batteries need by jet and turbo-prop aircraft. Gill's line of sealed recombinant batteries are now available in most popular sizes and are FAA approved. Gill also provides batteries for battery powered carts which are available by special order.

NOTE: Part Numbers with an asterisk (*) ship with acid.



G-35

| 12 VOLT DRY CHARGED BATTERIES FOR GENERAL AVIATION SINGLE & TWIN ENGINE AIRCRAFT | | | | | | | |
|--|-----------------|--------------------------|--------------|--------------------|--|-----------|-------|
| Model | AH @ 1 hr. rate | 30 Min. Emer. Cap.(amps) | Wt. (filled) | Electrolyte (qts.) | Application (Aircraft) | Part No. | Price |
| G-25 | 18 | 30 | 23.8 | 2 | Aerostar: 600, 601, 601P Beech: 19, 23, 24, 55, 58, 77 Cessna: 120, 140, 150, 170, 172, 175, 177, 310, 320, 340 Piper: PA-11, PA-36, PA-38 | 11-01833* | . |
| G-35 | 23 | 40 | 28.7 | 3 | Beech: 17, 18, 19, 23, 24, 33, 35, 36, 50, 76 Bell: 47G-5 Cessna: 180, 182, 185, 188, 195, 206, 207, 210 Mooney: M20, M20B, M20D, M20G, M20J, M20K Piper: PA-11, PA-12, PA-14, PA-16, PA-18, PA-22-25, PA-28, PA-30, PA-32, PA-34, PA-39, PA-44 | 11-01832* | . |
| G-35M | 23 | 40 | 30.7 | 3 | Maule: M-4-210, -4-210C, -4-230C, -4-180C, -5-210C, -5-220C, -5-200, -5-235C, -5-180C, -6-235, -6-180, M-7-235, MX-7-180, MX-7-235 | 11-03791* | . |
| G-88 | 65 | 108 | 78.0 | 8 | Ayres Corp. S-2R | 11-04011* | . |
| | | | | | | 11-01673 | . |
| | | | | | | 11-01672 | . |
| | | | | | | 11-03624 | . |
| | | | | | | 11-01685 | . |



G-242

| 24 VOLT DRY CHARGED BATTERIES FOR GENERAL AVIATION SINGLE & TWIN ENGINE AIRCRAFT | | | | | | | |
|--|-----------------|--------------------------|--------------|----------------------|--|-----------|-------|
| Model | AH @ 1 hr. rate | 30 Min. Emer. Cap.(amps) | Wt. (filled) | Electrolyte (quarts) | Application (Aircraft) | Part No. | Price |
| G-240 | 8 | 13 | 23.0 | 3 | Cessna 152, 172, 182 | 11-01655* | . |
| G-241 | 8 | 13 | 24.0 | 3 | Cessna 152, 172, 182, 172R, 172S | 11-01683 | . |
| G-242 | 10 | 17 | 27.0 | 3 | Cessna: 152, 172, 177, 182, 207, 210, 336, 337 Piper: PA-23, PA-31, PA-36 | 11-01656* | . |
| G-243 | 10 | 17 | 28.0 | 3 | Cessna: 152, 182, A152, 172, 172R, 172RG, 172S, T182, R182, TR182, T303, 210 (S/N 21059503 & ON), T210M, T210N, T210R, 188, 188A, 188B, A188, A188A, A188B AND T188C Cirrus: SR20, SR22 Slingsby Aviation, Ltd.: T67M260, T67M260-T3A | 11-01681 | . |
| G-244 | 18 | 30 | 38.5 | 4 | Beech: A60 Cessna: 310, 335, 340, 402, 404, 414, 421 Piper: PA-31 | 11-01657* | . |
| G-245 | 18 | 30 | 39.5 | 4 | | 11-01675 | . |
| G-246 | 19 | 32 | 41.5 | 4 | Airtractor: AT-300, AT-400 Piper: PA-23, PA-31 | 11-01658* | . |
| G-247 | 19 | 32 | 42.5 | 4 | Piper PA-31P-350 | 11-01543 | . |
| | | | | | | 11-01660* | . |
| | | | | | | 11-01670 | . |
| | | | | | | 11-01661* | . |
| | | | | | | 11-01680 | . |
| | | | | | | 11-01772* | . |
| | | | | | | 11-01662 | . |



G-25

| 12 VOLT VRLA BATTERIES FOR GENERAL AVIATION SINGLE & TWIN ENGINE AIRCRAFT (SEALED) | | | | | | | |
|--|-----------------|--------------------|--------------|--|--|----------|-------|
| Model | AH @ 1 hr. rate | 30 Min. Cap.(amps) | Wt. (filled) | | Application (Aircraft) | Part No. | Price |
| G-25S | 18 | 30 | 25.0 | | Cessna: 120, 140, 150, 150A, 150B, 150C, 150D, 150E, 150F, 150G, 150H, 150J, 150K, 150L, 150M, 170, 170A, 170B, 172, 172A, 172B, 172C, 172D, 172E, 172G, 172F (USAF T-41A), 172H (USAF T-41A), 172I, 172K, 172L, 172M, 172N, 172P, 172Q, 172R, 172S, 175, 175A, 175B, 175C, 177, 177A, 177B, 310, 310A (USAF U-3A), 310B, 310C, 310D, 310E (USAF-U-3B), 320, 320-1, 320A, 320B, 320C, 320D, 320E, 320F, 340 Piper: PA-11, PA-36-285, PA-36-300, PA-36-375, PA-38-112 Aerostar: PA-60-600 (Aerostar 600), PA-60-601 (Aerostar 601), PA-60-601P (Aerostar 601P), PA-60-602P (Aerostar 602P) Raytheon: 19A, 23, A24, D55, E55, E55A, 58, 58A, 77 Sky International: A-1, S-1S, S-1T, S-2, S-2A, S-2S, S-2B | 11-01316 | . |
| G-35S | 23 | 40 | 29.0 | | Beechcraft: 23, 35, 36, 50, 76 G-35S Bell: 47G-5 Cessna: 180, 182, 185, 188, 195, 206, 207, 210 Maule: M-4-210, -220, -180, M-5-180, -210, -220, -235, -200, -210TC, M-6-180, -235, M-7-235, MX-7-180, MX-7-235, MXT-7-180, MT-7-235, MX-7-160, MXT-7-160, MX-7-180A, MXT-7-180A, MX-7-180B, M-8-235 Mooney: M20, M20B, M20D, M20G, M20J, M20K Piper: PA-12, PA-14, PA-16, PA-18, PA-22, PA-23, PA-24, PA-25, PA-28, PA-30, PA-32, PA-34, PA-39, PA-44 | 11-01679 | . |



G-246

| 200 SERIES 24 VOLT VALVE REGULATED LEAD ACID BATTERIES (SEALED) | | | | | | | |
|---|-----------------|---------------------|--------------|--|--|----------|-------|
| Model | AH @ 1 hr. rate | 30 Min. Cap. (amps) | Wt. (filled) | | Application (Aircraft) | Part No. | Price |
| G-243S | 13 | 20 | 28.8 | | Cessna: 152, 182, A152, 172, 172R, 172RG, 172S, T182, R182, TR182, T303, 210 (S/N 21059503 & ON), T210M, T210N, T210R, 188, 188A, 188B, A188, A188A, A188B AND T188C Cirrus: SR20, SR22 Mooney: M20M, M20R Slingsby Aviation, Ltd.: T67M260, T67M260-T3A | 11-01666 | . |

Free UPS Ground* Shipping in 48 States No UPS Hazardous Charge ~ Pay Price of Battery - That's It! FULL MFG. WARRANTY - SHIPPED SAME DAY ORDERED *Batteries up to 50 lbs.

NOTE: The data in the "Application" section above is intended as a reference guide only. Some installations may vary and require airframe or battery box modification. Some applications may require field approval and some listings are pending FAA approval. Verify correct battery model for your aircraft before ordering. Dry charged Gill Batteries are furnished with electrolyte (except overseas) unless requested otherwise.

GILL 12/24 VOLT CHARGER



Perfectly packaged, this compact charger is big on performance. Offering adjustable amperage for 12 & 24V batteries, digital 24-hour timer, LED display, constant voltage and constant current for the most efficient way to charge. Wt: 9 lbs. This unit is switchable from 100 Volt to 220 Volt.

P/N 11-01540

GILL 24 VDC CHARGER







Small, lightweight. 'Smart' state-of-the-art software. Charger starts when battery requires charge •Adjusts to all Gill 24V batteries. LED progress indicators: indicates battery charge level. 'Smart' Circuit will not overcharge battery. Circuit Protection - reverse & short protection •Sleep mode when battery is charged. Specifications: Input: 110-120VAC @ 60 HZ 3.4 amps, Output: 27 VDC Nominal 7.7 Amps, Oper. Temp.: 23-104°F, Wt: 3.3 lbs.

P/N 11-01541

GILL BATTERIES

24 VOLT DRY CHARGED BATTERIES FOR TURBO PROP AND JET APPLICATION

| Model | AH 1hr. rate | 30min E.C. (amps) | Wt.lbs (filled) | Electrolyte (quarts) | Application (Aircraft) | Part No. | Price |
|---|---------------|---------------------|-----------------|--|--|----------|-------|
|  G-641 | | | | | | | |
| G-6381E | 43 | 70 | 80 | 9 | Dassault: Fan Jet Falcon Series C-F Raytheon Beech: 65-90, 65-A90, 65-A90-1(JU-21A, U-21A, RU-21A, RU-21D, U-21G, RU-21H), 65-A90-4(RU-21E, RU-21H), B90, C90, E90, F90, 99, 99A, 100, A99, A99A, A100, A100A, B100, 200, A100-1(U-21J), 200C, 200CT, 200T, A200(C-12A) OR (C-12C), A200CT(C-12D), OR (FWC-12D) OR (RC-12D), OR (C-12F) OR (RC-12G) OR (RG-12H) OR (RC-12K) OR (RC-12P), B200, B200C, (C-12F) OR (UC-12F) OR (UC-12M) OR (C-12R), B200CT, B200T, 300, B300, 300LW, B300C, MU-300-10, 400, 400T, Hawker 1000 Bell: 204B, 205A, 205B, 205A-1, 212, 222U, 412 Cessna: 208, 208B, 425, 441, 500, 501, 550, 551, S550, 560, 560XL Embraer: EMB-110P1, EMB-110P2 Learjet: 23, 24 series, 25 series, 28 series, 29 series, 35 series, 36 series, 31, 31A, 55, 55B, 55C series Gulfstream: G-159 Israel Aircraft Industries: 1121, 1121A, 1121B, 1123, 1124 Lockheed-GA: 1329-23 series Mitsubishi: MU-2B, MU-2B-10, -15, -20, -25, -26, 26A, -30, -35, -36, -36A, -40, -60 Pilatus: Pilatus-PC-12 Piper: PA-31T, -31T1, -31T2, PA-42 and PA-42-720 Rockwell: NA-265 series; Aero Commander: 680T, 680V, 680W, 690, 690A Sukorsky: S-76A, S-76B, S-76C Socata Group Aerospatiale: TBM-700 | 11-01545 | . |
| G-638E | 37 | 60 | 73 | 9 | Dassault: Fan Jet Falcon Series C-F Beech: 65-90, 65-A90, B90, B100, C90, E90, 99, 99A, 100, A99, A99A, A100, A100A, F90 Embraer: EMB-110P1, EMB-110P2 Learjet: 23, 24 series, 25 series, 28 series, 29 series, 31, 31A, 35 series, 36 series, 55, 55C Gulfstream: G-159 Israel Aircraft Ind.: 1121, 1121A, 1121B, 1123, 1124 Lockheed-GA: 1329-23 series, 23A, 23D, 23E Mitsubishi: MU-2B, MU-2B-10, -15, -20, -25, -26, -26A, -30, -35, -36, -36A, -40, -60 Rockwell: NA-265 series; Aero Commander: 680T, 680V, 680W | 11-02215 | . |
| G-639E | 24 | 40 | 55 | 5 | British Aerospace: DH.125-400A, HS.125-600A, HS.125-700A, BH.125-600A, BAE.125-800A, Jetstream series 3101 Hawker Siddeley, Beechcraft Hawker: DH.125, HS.125, BH.125 Messerschmitt-Bolkow-Blohm GMBH: BO-105S | 11-01607 | . |
| G-640E | 14 | 25 | 40 | 3 | Beech: 65, A65, 65-80, 65-A80, 65-B80, 65-88, 70 | 11-04160 | . |
| G-641 | 18 | 30 | 41.5 | 4 | Bell: 206, 206A, 206B, 206B-1, 206L, 206L-1, 206L-3 McDonnell Douglas (Hughes): 369, 369H, 369HM, 369HS, 369HE, 369D, 369E, 369F, 369FF, 500N, 600N with STC kit SR01427LA installed Schweizer Aircraft Corporation: 269D (333) | 11-01684 | . |
| G-6381C | 43 | 70 | 80 | 9 | Dassault: Fan Jet Falcon Series C-F Beech: 65-90, 65-A90, B90, C90, E90, 99, 99A, 100, A99, A99A, A100, A100A Embraer: EMB-110P1, EMB-110P2 Learjet: 23, 24 series, 25 series, 28 series, 29 series, 35 series, 36 series Gulfstream: G-159 Israel Aircraft Ind.: 1121, 1121A, 1121B, 1123, 1124 Lockheed-GA: 1329-23 series Mitsubishi: MU-2B, MU-2B-10, -15, -20, -25, -26, 26A, -30, -35, -36, -36A, -40, -60 Rockwell: NA-265 series; Aero Commander: 680T, 680V, 680W | 11-01609 | . |
| G-638C | 37 | 60 | 95 | 9 | Dassault: Fan Jet Falcon Series C-F Beech: 65-90, 65-A90, 65-A90-1(JU-21A, U-21A, RU-21A, RU-21D, U-21G, RU-21H), 65-A90-4(RU-21E, RU-21H), B90, C90, E90, F90, 99, 99A, 100, A99, A99A, A100, A100A, B100, 200, A100-1(U-21J), 200C, 200CT, 200T, A200(C-12A) OR (C-12C), A200CT(C-12D), OR (FWC-12D) OR (RC-12D), OR (C-12F) OR (RC-12G) OR (RG-12H) OR (RC-12K) OR (RC-12P), B200, B200C, (C-12F) OR (UC-12F) OR (UC-12M) OR (C-12R), B200CT, B200T, 300, B300, 300LW, B300C, MU-300-10, 400, 400T, Hawker 1000 Bell: 204B, 205A, 205B, 205A-1, 212, 222U, 412 Cessna: 208, 208B, 425, 441, 500, 501, 550, 551, S550, 560, 560XL Embraer: EMB-110P1, EMB-110P2 Learjet: 23, 24 series, 25 series, 28 series, 29 series, 35 series, 36 series, 31, 31A, 55, 55B, 55C series Gulfstream: G-159 Israel Aircraft Ind.: 1121, 1121A, 1121B, 1123, 1124 Lockheed-GA: 1329-23 series Mitsubishi: MU-2B, MU-2B-10, -15, -20, -25, -26, 26A, -30, -35, -36, -36A, -40, -60 Pilatus: Pilatus-PC-12 Piper: PA-31T, -31T1, -31T2, PA-42 and PA-42-720 Rockwell International: NA-265 series; Aero Commander: 680T, 680V, 680W, 690, 690A Sukorsky: S-76A, S-76B, S-76C Socata Group Aerospatiale: TBM-700 | 11-01557 | . |
| G-639C | 24 | 40 | 55 | 5 | Hawker Siddeley Beechcraft Hawker: DH-125, HS-125, BH-125 Messerschmitt-Bolkow-Blohm GMBH: BO-105S | 11-01610 | . |
| GE-50E | 31 | 55 | 80 | 8 | | 11-01686 | . |
| GE-51E | 22 | 35 | 56 | 4 | | 11-04192 | . |
| GE-54E | 10 | 16 | 32 | 3 | | 11-01547 | . |
| GE-50C | 31 | 55 | 80 | 8 | Gulfstream Commander: 500, 520, 560, 560A, 560E, 680, 680E, 720 North American: AT6-C, AT6-D, AT6-F, T-6G, SNJ-5, SNJ-6, SNJ-7 or any BC-1A, AT6, AT6-A, AT6-B, SNJ-2, SNJ-3, SNJ-4 converted to 24 volts per North American Drg 121-954004, P51 | 11-01682 | . |
| GE-51C | 22 | 35 | 56 | 4 | Airtractor: AT-301, AT-301A | 11-03623 | . |
| GE-54C | 10 | 16 | 34 | 3 | | 11-01546 | . |
|  GE-51E | | | | | | | |
|  GE-54C | | | | | | | |
|  G-641S | | | | | | | |
| 7000 SERIES - 600 SERIES (VALVE REGULATED LEAD ACID BATTERIES) | | | | | | | |
| Model | AH 1 hr. rate | 30 Min. Cap. (amps) | Wt. (filled) | Application (Aircraft) | | Part No. | Price |
| 7641-20 | 20 | 35 | 44 | Bell: 206A, 206B, 206L, 206L-1, 206L-3 with STC SR01406LA McDonnell Douglas(Hughes): 369, 369A, 369H, 369HM, 369HS, 369HE, 369D, 369E, 369F, 369FF, 500N, 600N with STC Kit SRO 1427LA installed. Schweizer Aircraft Corporation: 269D (333) | | 11-06245 | . |
| 7638-44 | 44 | 70 | 85 | | | 11-05171 | . |
| 7639-27 | 27 | 42 | 60 | | | 11-07462 | . |
| G-641S | 20 | 35 | 45 | Bell: 206A, 206B, 206L, 206L-1, 206L-3 with STC SR01406LA McDonnell Douglas (Hughes): 369, 369A, 369H, 369HM, 369HS, 369HE, 369D, 369E, 369F, 369FF, 500N, 600N, with STC kit SR01427LA installed. Schweizer Aircraft Corporation: 269D (333) | | 11-01633 | . |

NOTE: The data in the "Application" section above is intended as a reference guide only. Some installations may vary and require airframe or battery box modification. Some applications may require field approval and some listings are pending FAA approval. Verify correct battery model for your aircraft before ordering. Dry charged Gill Batteries are furnished with electrolyte (except overseas) unless requested otherwise.



GILL BATTERY ELECTROLYTE (ACID)

Battery electrolyte (battery grade sulfuric acid) in sealed polyethylene pouch with self-contained dispenser tube, packaged in sturdy cardboard container. Specific gravity 1.285. Detailed filling & disposal instructions on container.

2 Qts.....P/N 11-00300.....
3 Qts.....P/N 11-00305.....

BATTERY WARRANTY (APPLICABLE TO GILL & CONCORDE)

The manufacturer will replace with a new battery without charge (except for transportation) any battery which fails in service within 90 days. Addition of any chemical other than water or battery grade sulfuric acid voids this warranty. After expiration of Service Guarantee, adjustment will be made on pro-rate basis based on unused months of service. Batteries that are broken, discharged or fail due to freezing or abuse are not covered.

SEALED "VALVE REGULATED SRT SERIES"



| Model | Weight | Part No. | Price |
|------------------|--|----------|-------|
| G-25S 12 Volt | 25 Lbs. (full) Electrolyte: Not Needed | 11-01316 | . |
| G-35S 12 Volt | 29.0 Lbs. Electrolyte: Not Needed | 11-01679 | . |
| G-243S 24 Volt | 28.8 Lbs. (full) Electrolyte: Not Needed | 11-01666 | . |
| G-6381ES 24 Volt | 88.5 Lbs. (full) Electrolyte: Not Needed | 11-01631 | . |
| G-641S 24 Volt | 44.5 Lbs. (full) Electrolyte: Not Needed | 11-01633 | . |

EL

CONCORDE BATTERIES

Since their introduction in 1986, several styles of RG® Batteries, likewise known as VRSLAB, SLAB, or AGM batteries, have been developed by Concorde Battery Corporation. Concorde Battery has a dedicated Research and Development Department that is continuously improving and refining its recombinant gas product line. Formed in 1977 Concorde's factory was dedicated to manufacturing dry charged (vented or flooded electrolyte) aircraft batteries. In 1985 Concorde developed its first recombinant gas battery with absorbed glass mat separators. Now, with the proven reliability of Concorde's recombinant gas (RG®) aircraft batteries and great acceptance in both military and commercial applications, over 90% of its manufacturing has been changed over from dry charged to RG® production.

CONCORDE SEALED LEAD ACID BATTERIES



RG-25 RG-25XC RG-35 RG-35AXC RG-24-11 RG-24-11M RG380E/44

Concorde's line of sealed lead acid batteries is designed with larger positive and negative plates for more capacity and greater starting power even at sub-zero temperatures. They feature real aircraft quality terminals, patented copper alloy internally threaded terminals brass terminal bolts with conical silicon bronze lock washers, recommended 70" pound terminal torque, more than 20% higher capacity than earlier models, and a molded carrying or lifting handle. These valve regulated sealed lead acid batteries feature fully aerobic sealed construction; no spillable electrolyte or flammable gas emissions. "XC" or "AXC" in the model number indicates extra cranking power, and "M" in the model number indicates manifold venting.

| Part No. | Battery Type | Connect Type | Amp Hour | Volt | Our Part No. | Price | Part No. | Battery Type | Connect Type | Amp Hour | Volt | Our Part No. | Price |
|----------|--------------------|--------------|----------|------|--------------|-------|------------|------------------|--------------|----------|------|--------------|-------|
| RG-25 | Sealed Lead Acid | A | 22 | 12 | 11-03879 | . | RG-24-11 | Sealed Lead Acid | A | 11 | 24 | 11-03876 | . |
| RG-25XC | Sealed Extra Crank | A | 24 | 12 | 11-03880 | . | RG-24-11 M | Sealed Lead Acid | A | 11 | 24 | 11-03877 | . |
| RG-35A | Sealed Lead Acid | A | 29 | 12 | 11-03881 | . | RG380E/44* | Sealed Lead Acid | E | 42 | 24 | 11-03883 | . |
| RG-35AXC | Sealed Extra Crank | A | 33 | 12 | 11-03882 | . | RG24-16 | Sealed Lead Acid | | 13 | 24 | 11-05112 | . |

CONCORDE PLATINUM SERIES LEAD ACID BATTERIES



CB25 CB25XC CB35AXC CB35 CB24-11 CB24-11MXC

The Platinum Series® battery line from Concorde features more cold cranking amperes for one minute at 0°F, and more 30 minute emergency capacity than any other brand. Platinum Series® batteries provide more one hour capacity than any other brand as well as more high rate performance. These batteries utilize real aircraft quality copper alloy terminals with silicone bronze bolts and conical washers. The batteries listed in the chart below which are not described as "Platinum" are the original series of Concorde lead acid batteries.

BATTERY WARRANTY

(Applicable to Gill and Concorde)

The manufacturer will replace with a new battery without charge (except for transportation) any battery which fails in service within 90 days. Addition of any chemical other than water or battery grade sulfuric acid voids this warranty. After expiration of Service Guarantee, adjustment will be made on pro-rata basis based on unused months of service. Batteries that are broken, discharged or fail due to freezing or abuse are not covered.

CONCORDE BATTERY ELECTROLYTE (ACID)

2 QT. P/N 11-04749.....
3 QT. P/N 11-04750.....

| Part No. | Battery Type | Ampere Hour | Weight (lbs.) | Volts | Price |
|----------|-----------------------|-------------|---------------|-------|-------|
| 11-06405 | CB25 with acid | 20 Ah | -- | 12 | . |
| 11-05837 | CB25 without acid | 20 Ah | 22.0 | 12 | . |
| 11-01571 | CB25XC with acid | 25 Ah | 28.5 | 12 | . |
| 11-01572 | CB35AXC with acid | 34 Ah | -- | 12 | . |
| 11-06244 | CB35AXC without acid | 34 Ah | 32.5 | 12 | . |
| 11-03776 | CB-35A with acid | 29 Ah | -- | 12 | . |
| 11-03769 | CB-35A without acid | 29 Ah | 28.5 | 12 | . |
| 11-03771 | CB24-11 with acid | 10 Ah | -- | 24 | . |
| 11-03772 | CB24-11 without acid | 10 Ah | 27.0 | 24 | . |
| 11-03773 | CB24-11M without acid | 10 Ah | 28.0 | 24 | . |

NOTE: Some installations may vary and require airframe or battery box modification. Some applications may require field approval. Verify correct battery model for your aircraft before ordering. There may be a charge for STC paperwork on certain batteries.

RG-443



RG Valve regulated sealed lead acid battery. Lear-jet models 40 & 45. STC #ST01173WI FAA-PMA supplement #59. Emergency Battery ICA calls out the first Cap Check at 12 months or 2000 hrs; subsequent checks at 12 months or 1000 hrs. 24V, Wt: 27 lbs
P/N 11-02948

RG-131



RG valve regulated sealed lead acid battery. Uninterruptible power source for Citation 550 series. Direct replacement for Ni-Cad batteries: 605, 1201, CA 54 & CA 154 series. STC #ST01639LA; FAA-PMA supplement #72. First cap check at 12 months or 1000 hrs. 24V, Wt: 31 lbs.
P/N 11-02947

RG-380E/40L



RG-380E/40L and temperature sensor TSC6A Concorde #5-0242. RG valve regulated sealed lead acid battery. PIAGGIO P-180. Replacement for Ni-Cad battery. STC #SA01653LA. FAA-PMA Supplement #74 Engine starting, reliable power in the event of a generator failure. 24V, Wt: 86 lbs.
P/N 11-02949

RG-500



- Primary Aircraft Purpose: Helicopter Series
- Voltage: 24V
- Rated Capacity C1 = 1 hour
- Rate in ampere hours:17
- Max Weight: 42 lbs. / 19.1 kg

P/N 11-04738

EL

BATTERIES - CHARGERS



POWERSONIC BATTERIES

Power Sonic sealed maintenance-free batteries allow safe, trouble-free operation in any position. You never need to add electrolyte; gases generated during over charge are recombined in a unique "oxygen cycle". Under normal operating conditions, 4 or 5 years of dependable service can be expected in standby applications, or between 200 and 1000 charge/discharge cycles, depending on depth of discharge. Made with high-impact ABS plastic bases, using a carefully controlled plate-making process to provide excellent output per cell. This high energy density results in superior power/volume & power/weight ratios. Temp. range: -76° to +140°F.

3-AMP BATTERY - Ideal for aircraft with power requirements but no electric starter. Designed to power instruments radios, strobes, etc. This unit may NOT be charged from the onboard charging system. Use dual-rate charger. 5.23"l x 2.64"h. Weight: 2.6 lb.

P/N BT020.....

18-AMP BATTERY - Suitable for powering the electric starter of most Rotax and other 2-stroke engines as well as on-board electrical devices. May be maintained by on-board charging systems (see regulator/rectifiers). 7.13"l x 2.99"w x 6.57"h. Wt: 12.8 lbs.

P/N BT021.....

26-AMP BATTERY - Where maximum cranking power is needed or several accessories are being used, this is the battery that can handle it. May be maintained by on-board charging systems. Also recommended for the 582/532 engines when used in extremely low temperature environments. 6.89"l x 6.54"w x 4.92"h. Wt: 21 lbs.

P/N 11-03155.....



ATP HIGH POWER BATTERIES

ATP's UltraStart-Red & UltraBat-13 batteries are the ultimate in high power density non-spillable SLA batteries. The UltraStart-Red is ideal for starting light aircraft engines for ultralight and experimental aircraft and other internal combustion engines. Typical applications include all Rotax 2 stroke engines and HKS 4-stroke engines. For engines 100HP and up UltraStart-Red - Voltage: 12.6 VDC, Energy: 5AH cap., Peak current: 250A instantaneous, Weight: 4.4 lbs., Size: 2.7"l x 3.5"w x 4.5"h

UltraBat-13 - Voltage: 12.6 VDC, Energy: 13AH cap., Peak current: 650A instantaneous, Weight: 10.8 lbs., Size: 3-3/8"l x 7"w x 5"h

UltraStart-Red P/N 11-00375
 UltraBat-13 P/N 11-00378
 Battery box for UltraStart-Red..... P/N 11-01997



BATTERY CORROSION GUARD

Battery Corrosion Guard forms a thin protective coating that will neutralize battery acid on all treated areas. It is an excellent way to clean the battery, hold down straps, and all metal parts you want to protect including cables, clamps, box, and posts. Excellent for aluminum battery boxes. Widely used in the aircraft, truck, and boat industries.

3 oz. can P/N 11-00310
 8 oz can P/N 11-00320
 16 oz. can P/N 11-00330



BATTERY TERMINAL TOOL

This unique tool is designed to provide positive tightening of battery terminals on all popular brands of lead/acid aircraft batteries without over-torquing and without the danger of an electrical short. The tool is made from steel for rugged service and is fully insulated with a rubber hand grip for protection against electrical shorts.

P/N 12-16200.....



GILL TCT-1000 12V/24V CAPACITY TESTER

The TCT -1000 Battery Capacity Analyzer has been designed to perform automatic capacity testing of 12 and 24 Volt lead-acid batteries. This unit is capable of accurately measuring the capacity of a fully charged battery with a rating between 10 and 59 amperes. It is self-contained and easy to operate. The load tester will display, in percentage, the conformance to the battery's one hour rating.

P/N 11-03302.....



PULSETECH POWERPULSE 12VOLT WITH LUG

PowerPulse is not a charger. It's a performance device designed to help batteries charge faster and provide maximum performance and power. This patented unit uses a revolutionary ReNew-IT Pulse Technology™ to safely prevent the main cause of battery problems and failure: sulfation buildup on lead-acid battery plates. Used extensively by the consumers and the U.S. Military worldwide for almost ten years. PowerPulse can be powered in two different ways. When the battery is being charged -- either by an onboard charger or a separate charging system -- it will use the charging current as a power source. The rest of the time it uses a small portion of the battery's own energy so it is working 24-hours a day. The PowerPulse system can also be used together with an existing charging system. In fact, it will work even faster and stronger. This means batteries can be both charged and desulfated at the same time.

P/N 11-07464.....

SEALED IMMOBILIZED ELECTROLITE BATTERIES (GEL TYPE)



•Maintenance-free operation •Excellent shelf life •Long cycle life •Can be mounted on its side •Delivered fully charged and ready for use •Quality construction provides superior resistance to shock and vibration •Long life w/a charging voltage of 13.8V +/- .2V •Need adjustable voltage regulator such as the LR-3 so that charging voltage can be set at 13.8V •No corrosive gas generation •DOT & IATA approved for shipment

by air as dry cells • 300 Starting AMPS •Warranty 1 year or 100 hours.
 NOTE: FOR EXPERIMENTAL AIRCRAFT ONLY

| AMPS/VOLTS | WEIGHT | BASE | HEIGHT | P/N | PRICE |
|------------|--------|------------|--------|----------|-------|
| 32AH, 12V | 22.9 | 7.75 x 5.2 | 7.1 | 07-06755 | . |

ODYSSEY DRYCELL BATTERIES



P/N 11-01651

P/N 11-02233



P/N 11-01945

Odyssey batteries, with an eight year design life saves you time and money because you do not have to replace your battery as often. It is also the ONLY battery that is capable of delivering a large number of deep cycles - up to 400 when fully discharged or up to 500 when discharged to 80%. Plus, the battery is specially designed for high vibration applications. Unlike conventional batteries that need to be recharged every six to twelve weeks, the Odyssey battery will maintain up to 50% state of charge after 2

years if stored at room temperature (77°F). At temperatures lower than 77°F, storage times will be even longer. The cranking power of Odyssey batteries is double to triple that of equally sized conventional batteries, even when the temperature is as low as -40°F. Odyssey batteries may be shipped worry free by UPS/Federal Express or air. 2 Year Warranty.

| Part No. | Dimensions | Weight | Cranking Amps | Price |
|----------|---------------------------|---------|--------------------------------------|-------|
| 11-02233 | 7-3/16"x 3-1/16"x 6-9/16" | 15 Lbs. | Homebuilders 680 | . |
| 11-01651 | 6-9/16"x 6-7/8"x 5-11/16" | 24 Lbs. | Homebuilders 925 | . |
| 11-01945 | 73/16"x 31/16"x 69/16" | 15 Lbs. | 680 Amps; FAA Approved for PA18/PA19 | . |

Metal Jacket (Tray) for Odyssey 680Amp battery
 P/N 11-02234.....



HOLD DOWN BRACKET FOR ODYSSEY 680AMP BATTERY

This hold down bracket for the Odyssey PC 680 battery can be easily mounted in any orientation. Color: Black.

P/N 11-01853.....



XTREME CHARGE X2 DUAL BATTERY CHARGER

The Xtreme Charge X2 is a dual-station, 12-volt maintenance charger. The Xtreme Charge X2, works with all types and sizes of 12-volt lead-acid batteries.

P/N 11-06866.....

KELLY BC3000 BATTERY ANALYZER



"Your Battery M.D." Portable and cordless the BC-3000 is a lightweight fully automated battery analyzer assessing the health of all lead-acid aircraft batteries with an ampere hour range of 1-59.

Connect the battery using the included quick battery connection adapters, the unit automatically senses and selects 12 or 24 volts, set the battery rating and press start, that's it. One hour later your test is complete and the

health of your battery is displayed P/N 08-07161.....



BATTERY BOXES - BATTERIES

ALUMINUM BATTERY RACKS & BOXES



RACK



BOX

These top quality battery racks and battery boxes are constructed from 5052 aluminum and are heli-arc welded. A corrosion resistant epoxy powder coating is applied using an electrostatic process and oven baked for a long lasting finish. Complete hold down hardware kits are provided with all racks and boxes, and mount flange are pre-drilled for mounting ease using 3/16" diameter bolts. Use battery racks when mounting in a ventilated area. Use battery boxes when mounting battery in a confined area, where enclosed battery protection is required. Battery boxes include a 1/4" tube for venting and drainage. Specify make and model of battery and horizontal or vertical mount when ordering.

| Battery Racks | | | | Battery Boxes | | | |
|---------------|-------|--------------------------|-------|---------------|-------|--------------------------|-------|
| P/N | Model | Dims. | Price | P/N | Model | App. | Price |
| 11-00105 | HR-25 | 8"H x 5-3/16"W x 7-7/8"L | . | 11-00125 | HB-25 | 8"H x 5-3/16"W x 7-7/8"L | . |
| 11-00110 | VR-25 | 8"H x 5-3/16"W x 7-7/8"L | . | 11-00130 | VB-25 | 8"H x 5-3/16"W x 7-7/8"L | . |
| 11-00115 | HR-35 | 8"H x 5-3/16"W x 9-7/8"L | . | 11-00135 | HB-35 | 8"H x 5-3/16"W x 9-7/8"L | . |
| 11-00120 | VR-35 | 8"H x 5-3/16"W x 9-7/8"L | . | 11-00140 | VB-35 | 8"H x 5-3/16"W x 9-7/8"L | . |



BOGERT STAINLESS STEEL PA-28 BATTERY BOX

Replace Piper Battery Boxes * Metal & Plastic replacement approved. * Stainless Steel Construction * Brass screw-in vent-tubes. * Better than original drain tube * Battery Box Modification included.

| BOX | MODEL | AIRCRAFT S/N | BOX | MODEL | AIRCRAFT S/N | | |
|------------------|--------|--------------|-----------------------------|--------|--------------|-------|--------|
| 06-Bba | PA-18 | A | ALL SN | 06-BBb | PA-32 | 260E | ALL SN |
| 06-Bba | PA-18 | AS | ALL SN | 06-BBb | PA-32 | 300B | ALL SN |
| 06-Bba | PA-18 | S | ALL SN | 06-BBb | PA-32 | 300C | ALL SN |
| 06-Bba | PA-18 | | 18-1215-18-309025 | 06-BBb | PA-32 | 300D | ALL SN |
| 06-BBc | PA-20 | 135 | 934 & Up | 06-BBb | PA-32S | 300E | ALL SN |
| 06-BBc | PA-20S | 135 | ALL SN | 06-BB | PA-32 | 301T | ALL SN |
| 06-BBc | PA-22 | 108 | ALL SN | 06-BBb | PA-32S | 300 | ALL SN |
| 06-BBc | PA-22 | 135 | 1021, 1022, 1024 AND UP | 06-BBa | PA-39 | (C/R) | ALL SN |
| 06-BBc | PA-22 | 150 | ALL SN | 06-BB | PA-28 | 235 | ALL SN |
| 06-BBc | PA-22 | 160 | ALL SN | 06-BB | PA-28 | 236 | ALL SN |
| 06-BBc | PA-22S | 160 | ALL SN | 06-BB | PA-28 | 140B | ALL SN |
| 06-BBc | PA-22S | 135 | ALL SN | 06-BB | PA-28 | 140C | ALL SN |
| 06-BBc | PA-22S | 150 | ALL SN | 06-BB | PA-28 | 140D | ALL SN |
| 06-BBa | PA-24 | 180 | 103-243687 | 06-BB | PA-28 | 140E | ALL SN |
| 06-BBa | PA-24 | 250 | ALL SN | 06-BB | PA-28 | 150B | ALL SN |
| 06-BBa | PA-24 | 260 | ALL SN | 06-BB | PA-28 | 150C | ALL SN |
| 06-BBa | PA-24 | 400 | ALL SN | 06-BB | PA-28 | 160B | ALL SN |
| 06-BBa | PA-24 | 260B | ALL SN * Call For 4247-4300 | 06-BB | PA-28 | 160C | ALL SN |
| 06-BBa | PA-24 | 260C | ALL SN | 06-BB | PA-28 | 160S | ALL SN |
| 06-BB | PA-28 | 140 | ALL SN | 06-BB | PA-28 | 180B | ALL SN |
| 06-BB | PA-28 | 150 | ALL SN | 06-BB | PA-28 | 180C | ALL SN |
| 06-BB | PA-28 | 151 | ALL SN | 06-BB | PA-28 | 180D | ALL SN |
| 06-BB | PA-28 | 160 | ALL SN | 06-BB | PA-28 | 180E | ALL SN |
| 06-BB | PA-28 | 161 | 28-7716001-28-8216236 | 06-BB | PA-28 | 180F | ALL SN |
| 06-BB | PA-28 | 180 | ALL SN | 06-BB | PA-28 | 180G | ALL SN |
| 06-BB | PA-28 | 181 | ALL SN | 06-BB | PA-28 | 201T | ALL SN |
| 06-BBa | PA-30 | | ALL SN | 06-BB | PA-28 | B-235 | ALL SN |
| 06-BBb | PA-32 | 260 | ALL SN | 06-BB | PA-28 | C-235 | ALL SN |
| 06-BBb | PA-32 | 300 | ALL SN | 06-BB | PA-28 | D-235 | ALL SN |
| 06-BBb | PA-32 | 301 | ALL SN | 06-BB | PA-28 | E-235 | ALL SN |
| 06-BBb | PA-32 | 260B | ALL SN | 06-BB | PA-28 | F-235 | ALL SN |
| 06-BBb | PA-32 | 260C | ALL SN | 06-BB | PA-28R | 150 | ALL SN |
| 06-BBb | PA-32 | 260D | ALL SN | 06-BB | PA-28R | 200 | ALL SN |
| 06-BB White | | | P/N 11-06951 | 06-BB | PA-28R | 201 | ALL SN |
| 06-BB Stainless | | | P/N 11-04420 | 06-BB | PA-28R | 201T | ALL SN |
| 06-BB Black | | | P/N 11-04421 | 06-BB | PA-28RT | 201T | ALL SN |
| 06-BBA White | | | P/N 11-06952 | 06-BB | PA-28S | 180 | ALL SN |
| 06-BBA Black | | | P/N 11-06953 | 06-BBa | PA-30 | B | ALL SN |
| 06-BBA Stainless | | | P/N 11-06954 | 06-BBa | PA-30 | C | ALL SN |
| 06-BBB White | | | P/N 11-06955 | | | | |
| 06-BBB Black | | | P/N 11-06956 | | | | |
| 06-BBB Stainless | | | P/N 11-06957 | | | | |
| 06-BBC White | | | P/N 11-06959 | | | | |
| 06-BBC Black | | | P/N 11-06958 | | | | |
| 06-BBC Stainless | | | P/N 11-06960 | | | | |

FIBERGLASS BATTERY BOXES



Available as standard fiberglass battery box or as gel coated version. Gel coated battery box is same dimensions but with white gel coating and with the mount integrated into the box.

Fiberglass Battery Box P/N 11-11007
Met-Co-Aire Battery Box White P/N 11-05614

GELL CELL BATTERIES



- Maintenance-free operation • Excellent shelf life
- Long cycle life • Can be mounted on its side
- Delivered fully charged and ready for use • No corrosive gas generation • 300 Starting AMPS • Warranty 1 year or 100 hours. • Quality construction provides superior resistance to shock and vibration •

DOT AND IATA approved for shipment by air as dry cells **Note: FOR EXPERIMENTAL AIRCRAFT ONLY.** P/N 11-03156

YUMICROM BATTERIES



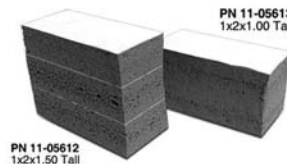
These manifold vented batteries work well in home built with low amperage requirements, putting out a lot of power for their size and weight. Made by Yuasa General in Reading, Pa. 27.1oz. electrolyte required to fill (not furnished). **YB14LA2, 12V, 14AH** - This model being used in the VariEze & Long-EZ. Easily handles the load of starting a Lyc. 0-235 engine. Size: 5-9/32" x 3-1/2" w x 6-11/16" h. Wt. 10 lbs.

P/N 11-01847

YB16-B, 12V, 18AH - Used in the Solitaire sailplane, VariEze, Long-EZ & other homebuilts without starter. Size: 7"lx4"wx6.25"h. Wt: 12.7 lbs

P/N 11-01848

BATTERY BOX BUMPER SEAL



Battery Box Bumper Seal. 1103M foam with sticky back. Mil Spec: AMS3195E Bumper Seal 1"

P/N 11-05613

Bumper Seal 1-1/2"

P/N 11-05612

AIRCRAFT BATTERY HYDROMETER



Special Tester designed for testing aircraft batteries. Requires only small amount of fluid & ideal for close quarters. Float calibrated from 1.100-1.300 Sp. Gr. in 5° intervals. P/N 11-01674

AIRCRAFT BATTERY LOCK



This simple locking device is designed to disable the battery from the electrical system which cuts off all power to the aircraft unattended many pilots disconnect the battery and lock the panel door. However, many panel locks are easy to pick and pry open. If a

thief is able to unlock the panel door, it is simple to reconnect the battery. Then all on would have to do is go inside the plane through the emergency door, which is often left unlocked with a key, the engine can easily be started and the plane can be flown away. The batter lock is constructed using a tough space age plastic polymer and a seven pin round ball bearing lock that is impossible to pick which in turn prevents aircraft theft and increases security. P/N 11-02753

BATTERY MAT



The Battery Mat is the world's only acid neutralizing and absorbing mat designed for use beneath any lead-acid battery. Each mat is simple, efficient, and cost-effective. It's ideal for use with all aircraft, as well as standard and heavy duty equipment. The acid-neutralizing and absorbing fabric is patented and manufactured with recycle

material in the U.S. Battery Mat absorbs and neutralizes battery acid that may leak or result from a "boil over", prevents corrosion, cushions vibration shock, is simple to use and install, and is safe to handle. Width: 12". Sold by linear ft. P/N 11-00170

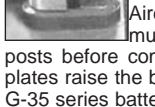
BOGERT BATTERY BOX NYLON FLANGES



Improve Starting Performance. Easier Removal & Installation of Battery. May prolong life of battery and starter. Less expensive to modify existing box than to replace. Compatible with our famous "Low Loss" Cable Kits! Eliminate extra connection on outside of the battery box. Do away with the troublesome braided negative strap. Nylon Flanges replacement or experimental. P/N 11-02892

Nylon Flanges STC'd / PMA'd P/N 11-02893

BOGERT CONCORDE BATTERY POST ADAPTERS



Aircraft using Concord CB-35A and RG-35A batteries must install two PN 1-1-6 adapter plates to the battery posts before completing the Battery Box Modification. These adapter plates raise the battery post height to equal the post height of standard G-35 series batteries. P/N 11-02891

BATTERY CHARGERS

BATTERY CHARGERS BY SCHAUER

Over 70 years of manufacturing experience assures, the user of the finest line of battery chargers—solid state circuitry, non-aging silicon rectifiers at low prices. All chargers furnished with complete operating instructions. One year warranty

CR612 12 VOLT 10 AMPERE AUTOMATIC



This charger has 5 times the charging rate of the 2 ampere model. Charges average 12V battery in 3 to 7 hours. Equipped with ammeter, 3-wire AC cord, 6-ft. DC output cord with heavy duty plier type battery clips and carrying handle. Size: 7-3/8"H x 9-3/8"W x 6"D. Wt.11.75 lbs. Designed for overnight use. P/N 11-00890.....

SR5024WC 24 VOLT 5 AMPERE AUTOMATIC



This charger will charge 24V batteries at a 5 ampere rate. Ideal for aircraft batteries, diesel starting engines, golf carts, electric cars, standby equipment. Size: 7.25"H x 9.25"W x 5.75"D. Wt. 4-3/8 lbs. Designed for overnight use. P/N 11-00885.....

TB SERIES

24 VOLT 10 AMPERE • 24 VOLT 20 AMPERE TEMPERATURE-VOLTAGE COMPENSATED =

Highly advanced, fully automatic charger which reduces from full charge rate to a safe maintaining charge rate as the battery becomes charged. Can be left connected for extended periods without danger of overcharging. Supplies the proper charge in the hot-test or coldest weather and is maintained at proper voltage even when the AC line voltage varies ±10%. Size: 11-1/4"H x 8-1/4"W x 7-7/8"D. 24V 10A-Wt. 22.5 lbs..... P/N 11-00889..... 24V 20A-Wt. 29.5 lbs..... P/N 11-00891.....

MANUAL CHARGERS

Manual chargers must be disconnected when battery is charged to prevent overcharging and damage to the battery. Normal indication that battery is charged is when ammeter stabilizes for one hour.

DX5 10 AMPERE TRI-POWER MANUAL



Charges 6, 12 & 24V batteries at a 10 ampere rate. Will also charge four 6V or two 12V batteries at 10 amps when connected in series. Equipped with ammeter voltage selector switch, DC circuit breaker, 3-wire AC cord, 6-ft. DC output cord & carrying handle. Size: 8.25"H x 11.25"L x 7.875"D. Wt. 20.75 lbs. P/N 11-00886.....

12V 50A STARTER/10A CHARGER



A combination 10 amp manual battery charger and 50 amp engine starter. When connected to the battery and 120V AC outlet, it will provide up to 50 amps of cranking power, sufficient to turn over the average engine. Size: 7.25"H x 9.25"W x 5-3/4"D. Wt.12.75 lbs. P/N 11-00892.....

SCHAUER 1A AUTOMATIC BATTERY CHARGER



This fully automatic charger can be left on the battery indefinitely. Features include indicator lights, overload protection, reverse polarity protection, and small size (4" x 3" x 2"). Charges, maintains, and conditions 12V batteries in stored vehicles, such as aircraft, cars, motorcycles, mowers, etc. Ten foot long cordset includes quick charge battery clips and ring terminals. Wt: 2 lbs. P/N 11-04407.....

FLEET FAST CHARGER/ENGINE STARTER BY SCHAUER



This fast charger/engine starter on wheels provides both low and high charge rates as well as a starting function to start engines. This charger provides 6, 12, & 24V, 60 amp fast charge rate and 300 breaker to protect charger and battery from incorrect hookup, and a one hour timer for automatic shut-off or continuous charging. 2 year limited factory warranty. 53 lbs. P/N 11-00887.....

KWIKSTART 6290 POWER SUPPLY



Equipped with 2 UL listed 12V, 22amp hour DC High Performance batteries. Ideal for jump-starting aircraft, cars, trucks, boats, RV's and tractors. Also has a convenient switch when moving from 12 to 24V settings. The operator also has up to 100 hours of portable 12VDC power for cell phones, power tools, work lights and more. Also equipped with a bright emergency light. Equipped with a 110V, 1000 mil amp charger with built in overcharge protection to prolong battery life. P/N 11-02487.....

THE BATTERY MAINTAINER SOLAR BATTERY CHARGER



The Battery Maintainer is the best device available to ensure that your battery will always be "topped off" and fully charged. It has the capacity to keep any 12 volt battery charged with as little as one full hour of sunlight per day. The life of your battery will be dramatically extended by using the Battery Maintainer. It features a diode to prevent the battery from discharging on cloudy days or at night. It is constructed with a glass face and black molded base. Size: 5-1/4" x 11" x 3/8" thick. Output: 100 ma 16 VDC full sunlight. Connects to battery via 12V "hot" cigarette lighter plug in aircraft. For 24 volt use two units. LED Light not included. P/N 01-28312.....

| Accessories | Part No. | Price |
|--|----------|-------|
| DC CIG Jack W/Cover & Fuse Wiring | 11-06356 | . |
| DC CIG Jack W/Cover (Tabs for Wiring) | 11-06357 | . |
| Bracket | 11-06358 | . |
| Inline DC Jack | 11-06359 | . |
| Cover | 11-06360 | . |
| DC Power Plug | 11-06361 | . |
| Clamp Red+black Battery Clamp W/Wiring | 11-06362 | . |
| Eyelet Red+Black Battery Eyelet Connection W/ Wiring | 11-06363 | . |
| Fused Pre-Wired 24VDC Power Point (With Jacks installed) | 11-06364 | . |
| Fused Pre-Wired 12VDC Power Point (With Jacks Installed) | 11-06365 | . |
| 12FT Solar panel Extension Cable | 11-06366 | . |

SOLARGIZER AVIATION BATTERY LIFE EXTENDER



Solargizer is the only one of its kind in the world. It is not a battery charger, but a proven, patented electronic device designed to eliminate the #1 cause of battery problems and failures – sulfation. Whether you deal with aircraft, ground equipment, or virtually any other type of vehicle, Solargizer will dramatically extend the life of your battery, increase performance efficiency, reduce recharge time, extend battery capacity so your battery runs longer between charges, and even maintain a charge indefinitely no matter how long your aircraft or vehicle sits unused. Solargizer is small, weather-proof, and easy to install. Because it keeps batteries in optimum working condition, the Solargizer system helps reduce downtime, battery maintenance and replacement costs. And it even protects our environment by reducing the number of batteries needlessly discarded every year.

12 Volt w/ Battery Clamps.....P/N 11-11690..... 24 Volt w/ Battery Clamps.....P/N 11-11692.....

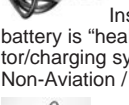
BATTERYMINDER® BATTERY CHARGER 12V & 24V



Both model BatteryMINDers are "Smart" 3 stage charger /maintainer /conditioners that extend both performance and life of 12-Volt and 24-Volt sealed and wet (filler cap) Concorde and Gill FAA-PMA Certified LA batteries. The voltage settings and charge rates have been chosen, after conferring with leading aviation battery makers in the U.S. By providing each of these BatteryMINDER units with an "At-the-Battery" temperature compensating sensor, batteries can be safely charged and maintained for extended periods in temperature extremes from 32°F to 125°F. Without this type temperature sensing, batteries will be under-charged in colder temperatures (<60°F to 32°F) and over-charged in high temperatures (>80°F to 125°F).

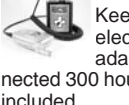
1-year 100%money-back guarantee+five (5) year "no hassle" warranty
 Battery Minder 12248AA-S2 12V P/N 11-07739.....
 Battery Minder 24041AA-S2 24V P/N 11-07740.....
 Battery Minder 24041AA-S3 Gill LT 24V P/N 11-07741.....
 Battery Minder 12248AA-S3 Odyssey 24V... P/N 11-07742.....
 Battery Minder Solar Panel P/N 11-02008.....
 Cigarette Lighter Adapter P/N 11-07209.....
 Small12V Batt.Minder (Non Aviation)..... P/N 11-11671.....

BATTERY AND ALTERNATOR CONDITION TESTER



Instant and accurate battery condition status: indicates if battery is "healthy" or in need of charging Instant status of your alternator/charging system: determines whether battery or alternator is at fault. Non-Aviation / Not for Aircraft. P/N 11-04302.....

EMERGENCY CHARGE SYSTEM EBPA299



Keep cellphones and all personal devices charged. When electricity is unavailable simple attach 12volt (car style) adapter to the handheld power pack, plug in and go stay connected 300 hours of talk/standby time (Results may vary)• 9 AA Batteries included. P/N 11-04739.....

EL

CHARGERS - APU'S - SOLAR PANELS

OPTIMATE DIAGNOSTIC DESULFATING CHARGERS AND TESTERS



OptiMate 5



OPTIMATE 5 can SAVE a neglected / sulfated* leadacid battery unable to accept charge from the engine charging system (even after jump starting). The multi step charging system is suitable for any type of 12V lead-acid battery. During the 24/7 auto storage control the battery is tested every hour and recharged as necessary. The universal input system accepts AC power between 100 to 240VAC (incl. generator / inverter). Hook it up anywhere in the world, walk away, OptiMate5 does the rest, automatically, safely. Recommended for all lead-acid batteries from 7.5Ah – 120Ah. P/N 11-07220.....

OptiMate 6



OPTIMATE 6 can SAVE a neglected / sulfated* leadacid battery unable to accept charge from the engine charging system (even after jump starting). The micro processor controlled multi step charging system with cell equalizing is suitable for deep cycle and starter (SLI) batteries and the ampmatic auto current control takes the guesswork out of charge current selection. During the continuous maintenance and testing cycle the battery is tested daily and recharged as necessary. Hook it up, walk away, OptiMate6 does the rest, automatically, safely. Recommended for all lead-acid batteries from 15Ah – 240Ah. P/N 11-07221.....

OptiMate PRO S



OPTIMATE PRO-S has a charging system able to save a neglected *sulfated battery that cannot accept charge from a standard charger or the engine charging system. Battery power is optimized during bulk, absorption & cell balancing charge modes, and then tested to verify charge retention. Battery life is extended if left connected to OptiMate PRO-S when vehicle/craft/equipment is not in use. Initializes, desulfates & charges 1 x 12V battery at a time – from small to large. P/N 11-07222.....

OptiMate PRO 2



OPTIMATE PRO-2 has two independent charging systems able to save a neglected *sulfated battery that cannot accept charge from a standard charger or the engine charging system. Battery power is optimized during bulk, absorption & cell balancing charge modes, and then tested to verify charge retention. Battery life is extended if left connected to OptiMate PRO2 when vehicle/craft/equipment is not in use. Initializes, desulfates & charges 2 x 12V batteries at a time or 1 x 24V system. PN 11-07223.....

*A battery discharged over time that has built up chemical resistance to charging, but otherwise undamaged and measuring at least 2V.

AUXILIARY POWER UNIT (APU) & BATTERY CHARGER



Designed to supply filtered DC bus power through standard APU receptacle in private and commercial aircraft. Up to 25 or 50 amp is available for operating avionics and flight control systems when the master switch is activated. It can also charge the battery through the plug at a 10 amp rate. Output is current limited, and will withstand starting loads. Voltage is limited to prevent battery overcharging. DC Current and voltage are displayed on panel meters, voltage accurate to 00.00 **NOTE: Available with piper plug too.**

| Model | P/N | DC Amps | DC Volts | AC Power | Dimensions H.W.D. | Wt. | Price |
|------------|----------|---------|----------|------------------------|-------------------|-----|-------|
| APU14v/25A | 11-07068 | 25 | 14 | 117 volts 60hz. 3 amps | 8.5x10x12 | 22 | . |
| APU28v/25A | 11-07067 | 25 | 28 | 117 volts 60hz. 6 amps | 8.5x10x12 | 33 | . |

AIRCRAFT APU & CHARGER



25 amps of auxiliary power to prevent battery drain while checking aircraft controls and avionics. Battery status is monitored by a digital volt meter accurate to 00.00, and a Tri-color LED. If left connected, will charge and fully maintain battery. Available with plug as shown, or Piper plug. Plugs into standard 117v 60 Hz. receptacle. Max current draw, 6 amps on 24 volt model (APU24v/25A), 3 amps on 12 volt model, (APU12v/25A). Warranty: (3) years.

Charger with Plug 12V..... P/N 11-05662
Charger with Plug 24V..... P/N 11-05661

SOLAR PULSE



| Specifications | SolarPulse 2W | SolarPulse 5W |
|-----------------------------|-----------------------|-------------------------|
| Pulse Frequency: | 22-28 kHz | 22-28 kHz |
| Max Charging DC Voltage: | 16.5 V, 250 mA | 16.5 V, 350 mA |
| Reverse Polarity Protected: | Yes | Yes |
| Circuit Box Dimensions: | 3.25" x 2.25" x 1.5" | 3.25" x 2.25" x 1.5" |
| Solar Panel Dimensions: | 4.75" x 8.56" x .125" | 8.875" x 8.75" x 0.125" |
| Box to Lugs Wire Length: | 3 feet | 3 feet |
| Box to Panel Wire Length: | 17 feet | 17 feet |
| Termination: | .375" Lugs | 0.375" Lugs |
| Weight: | 1.35 lb. | 1.65 lb. |

- * Unique solar charger provides clean, quiet energy
 - * Cleans battery plates of large, damaging lead-sulfates so batteries can accept, store and release MAXIMUM power when you need it
 - * Helps offset energy-robbing key-off parasitic loads (see chart below)
 - * Works with all lead-acid batteries (flooded cell, AGM and gel)
 - * Ideal for virtually any kind of vehicle and equipment in areas with out access to electrical power
 - * Low-profile industrial-strength solar panel mounts flat (no frame required) so it's virtually indestructible
 - * Prevents the normal loss of battery power on vehicles stored out side no matter how long they sit unused — even months at a time
 - * Helps extend battery life up to 3X longer
 - * Choose from three models: 2-Watt, 5-Watt and 6-Watt
 - * The 5-Watt solar panel is almost HALF THE SIZE of other 5-watt panels yet offers full 5-watt power
 - * The smaller 5-watt panel provides more installation options
 - * The 6-watt model is ideal for emergency rescue and law enforcement vehicles because it has a unique rectangular solar panel designed to easily mount on any light bar
 - * 2- and 5-Watt models include 17-feet of wire between circuit box and solar panel, and the 6-Watt includes 14 feet of wire
 - * Five-year limited warranty
- 2WATT P/N 11-07120
5WATT..... P/N 11-07121

REDIPULSE PRO-12 CHARGE/MAINTENANCE SYSTEM



The PulseTech Pro-12 Charge/Maintenance System. It is designed to keep new batteries "factory-fresh" while they rest on the shelf waiting to be installed or sold. Batteries that sit idle suffer from damaging sulfation buildup (lead sulfate deposits on the battery plates). This buildup is the main cause of battery problems and failure. The Pro-12 uses our scientifically-proven ReNew-IT Pulse Technology to keep these deposits off the plates. By removing these energy-dampening deposits, your batteries are stronger than ever. This means your "shelf-life" warranty issues and other battery-related expenses are reduced dramatically. P/N 11-07122.....

EL

START PAC® STARTERS - POWER SUPPLIES

START PAC® PORTABLE STARTING UNITS

The new patent pending Start Pac QC models have separate removable batteries that can be changed in 15 seconds. This feature allows the user to change the batteries in the field without needing to send the Start Pac back to the shop or manufacturer. Batteries have no memory effect and can be recharged at anytime. Made in the USA. Certain aircraft will allow the ship's generator to back charge a GPU. In this manner, Start Pacs can be recharged in the field without an AC source indefinitely.

NOTE: When storing the Start Pac for more than 30 days, remove the battery pack from the charging unit and store separately.



MODEL 1324-1 QC - * 13 AMP hours @ 10 Amp Hour Rate * 1300 AMPS Peak Current complete with built in charger, power plug and cables. * 15.5"x4"x11.75" * 35 LBS. Complete * Units are 24 VDC output with a universal charger that will accept 90-240 VAC 50/60 hertz. Will start turbine or piston engines up to 500 horse power.

Has a 4.5 amp charger and will provide a charge time of approx. 4 hours. Will give two to three starts between charges. This portable unit is mainly designed for emergency starting in remote locations. This unit is not designed for repeated daily starts or maintenance functions.

1324-1 QCP/N 11-04538
1324-1 QC-RBS (Battery Set)P/N 11-07231



MODEL 1324-2QC - Complete with built in chargers, power plug and cables. Units are 24 VDC output with universal chargers that will accept 90- 240 VAC 50/60 hertz. * 16 AMP hours @ 10 Amp Hour Rate * 1400 AMPS Peak Current * 19.2"x7.5"x9.75" * 50 LBS. Complete.

Will start turbine or piston engines up to 800 horse power. This unit has dual 4 amp chargers and will provide a charge time of approx. 2 hours. Will give two to four starts between charges. This portable unit is mainly designed for emergency starting in remote locations. This unit is not designed for repeated daily starts or maintenance functions.

1324-2 QCP/N 11-04539
1324-2 QC-B (Batteries)P/N 11-06777



MODEL 2300 QC - Built in chargers, power plug and cables. 24/26 VDC output, with universal chargers that will accept 90-240 VAC 50/60 hertz. * 26 AMP hours @ 10 Hour Rate * 2300 AMPS Peak Current * Trolley avail. * 19.2"x7.5"x11.5" * 69 LBS. Complete. For starting engines up to 1500 horse power and give four to six starts between charges.

This unit has a dual redundant 4 amp chargers.. When plugged into an AC source, 8 amps at 28VDC, is available for maintenance functions without depleting the batteries. Recharge time is approx. 3-1/2 hours.

2300 QCP/N 11-06780
2300QC-B (Batteries)P/N 11-06781



MODEL 1628QC - Complete with built in chargers, power plug and cables. 28.5 VDC output, with universal chargers that will accept 90-240 VAC 50/60 hertz * 16 AMP hours @ 10 Amp Hour Rate * 1400 AMPS Peak Current * 19.2"x7.5"x9.75" * 54 LBS. Complete. Quicker more

robust start due to its higher voltage. This unit utilizes dual 3.5 amp chargers for reliability with a recharge time of 2.5 hours. These units will give three to five starts between charges. Due to their lightweight and portability, these packs are especially suited for use in remote locations. Will start turbine engines up to 800 horsepower.

1628QCP/N 11-06778
1628 QC-B (Batteries)P/N 11-07187



MODEL 6028 QC - Built in chargers, power plug and cables. Units are 28.5 VDC output, with universal chargers that will accept 90-240VAC 50/60 hertz. * 26 AMP hours @ 10 Hour Rate * 2300 AMPS Peak Current * Trolley avail. * 19.2"x7.5"x11.5" * 77 LBS. Complete. Will start the largest electrically started turbine or piston engines

including the Garrett TPE331. Will provide a faster and cooler start than most ship's aircraft batteries, thus increasing turbine life. Various maintenance duties can be performed with this pack that requires more than 24 volts for checkout. This unit has dual redundant chargers with a total of 7 amps output with a recharge time of approximately 4 hours.

6028 QCP/N 11-06783
6028 QC-B (Batteries)P/N 11-07189



MODEL Li2800 QC - A full 28VDC battery pack and will provide superior starts on all electrically-started turbine engines. It has dual, redundant chargers with a total of 7 amps output and a recharge time of approximately 4 hours. * 28 AMP hours @ 10 Hour Rate * 2400 AMPS

Peak Current * L 19.2" x W 7.5" x H 9.75" * 46 LBS. Complete. Utilizes the latest technology in Lithium batteries. (can be left in a completely discharged state without causing damage)

Li2800 QCP/N 11-06782



QUICK CHANGE TROLLEY - The Start Pac® QC trolley is a light weight accessory for either the Start Pac® Models 1324-2QC, 1628QC, 2300QC or the 6028QC

P/N 11-06775

START PAC® POWER SUPPLIES

The entire aircraft electrical system can be powered up for GPS programming and electrical maintenance. Thus the on board aircraft battery can be saved for starting. Do not use for starting as starter motors require far more amperage than is available from the StartPac® Portable Power Supply. Not for battery charging. Made in the USA.



MODEL 53025/12V - Do not cover or enclose this Start Pac® when using, as this will inhibit airflow needed for cooling purposes. Use a minimum of 12# wire size for the AC extension cord. 12 Volt output unit. * AC INPUT: 90 to

240 VAC, 7 amps * DC OUTPUT: 25 amps @ 14.2 Volts * 9 Lbs./4.08 kilos complete * 14" long, 5.25" wide, 5.5" high * Continuous duty fan cooled * Over current protection * Over voltage protection * Over temperature protection. Designed to power up 12 Volt aircraft systems. The voltage output is set to 14.2 Volts. Maximum amperage output is 50 amps which is adequate for most light aircraft. If overloaded, the 53025/12 will trip off and reset itself after a short period of time. This unit is ideal for powering up new and old aircraft with glass cockpits.

53025 - 12VP/N 11-04536
53025-24VP/N 11-04537



MODEL 53050 - Specifications: * No duty cycle, output voltage 28.5 VDC * AC input is universal 90-240 Volts. * Over current protection * Over voltage protection * Over temperature protection * Forced air-cooling * DIMENSIONS: Wt. 10 lbs./4.54 kilos 14" X 5.25" X 5.50".

A 28.5 Volt continuous DC power supply when plugged into 110/220 Volt single phase AC power. Will deliver full 50 amp DC output continuously, but will not provide enough current for aircraft engine starting or mining equipment starting.

53050P/N 11-06833



MODEL 53105 - Specifications: * Maximum continuous 105 amps +5%. No duty cycle. * AC input 190-240 Volts. * Over current protection. * Over voltage protection. * Over temperature protection. * Forced air cooling. * 8 foot power cable. * Weights 26 lbs./11.80 kilos complete with power cable. * 14.5"x7"x13.75".

A 28.5 Volt continuous DC power supply when plugged into 220Volt single-phase AC power. Will deliver full 105 amp DC output, but will not provide enough current for engine starting.

53105P/N 11-06834



MODEL 53300 - Specifications: * Maximum continuous 300 amps +5%. No duty cycle * AC Input: 190-240 Volts, 60 Amps * Over current, voltage, and temperature protection * Forced air cooling * 10 foot power cable. Size: * Weight: 120 lbs/54.4 kilos complete Dimensions: 38"L x 21"W x 20"H * Handle height: 48".

A 28.5 Volt continuous DC power supply when plugged into a 220 Volt single-phase AC power source.

53300P/N 11-06835



START PAC® MINI CHARGER - Specifications: * 24 Volts * 1.5 amps * 90 to 260 Volt universal input * Indicator light showing orange when charging, green when fully charged * Has float mode, can be left connected indefinitely without harming the battery * High tech, sophisticated electronic circuitry with microchips * CE approved * Will fully charge most lead acid aircraft batteries in 24 hoursP/N 11-04535

START PAC® GROUND POWER UNITS

The following dimensions apply to each of the 3300s: 38"x21"x20" Handle Height 48". Avoid discharging the batteries completely as damage can result.



MODEL 3324 - Combination power supply and battery pack. Batteries: * 78 Amp Hours at 10 hour rate * 24 Volt DC - 25.5 Volts at rest Sealed cells non- hazardous Valve regulated high amperage output lead acid * 3200 Peak Amps Power supply / charger: * Multi- unit 58 Amp DC continuous output * 28 - 28.5 Volt output from 0 - 58 amp load * Battery recharge time from fully discharged - 2 hours * AC Input - 110 Volt or 220 Volts (only 1) Limitations : 200 amps maximum DC load NOTE-When using more than 58 continuous amps, the batteries will make up the difference until they become depleted. On most aircraft, a low voltage relay will drop the GPU offline when the voltage

drops below a preset level. Once the GPU is dropped off, it's voltage will rise and will be accepted again by the aircraft, then will immediately drop off again. This oscillation can cause damage to aircraft components. NOTE-- PLEASE USE #12 or Larger AC EXTENSION CORD

3324P/N 11-07225
3324-RBS (Battery Set)P/N 11-07234

EL

AVTEK PRODUCTS — BATTERY CHARGERS

AVTEK STANDBY ELECTRICAL SYSTEM



AvTek uses rechargeable, dependable, deep discharge batteries as the power source in its Standby Electrical System. They are sealed and maintenance free. Nothing can get out and there is nothing to add. They can't leak, because the acid is absorbed in the "Substrate" were gases are re-combined. These are very safe batteries in a ventilated enclosure box. These are deep-discharge batteries, not like your "WET-Acid" cold-cranking car battery, and unlike Nicads, there will never be a memory problem with lead acid. All the potential stored energy will be available to your dead panel. Power is delivered through the cigarette lighter. No power will be discharged through the cigarette lighter greater than what it takes to heat up the lighter element in the first place. AvTek's design is much more than a battery in a black box. AvTek uses a circuit board to control the power to the buss. This Smart board monitors the amperage demand at an efficient, reliable rate to insure a safe IFR descent. An uncontrolled portable battery connected to the cigarette lighter could smoke the panel, as with any home made project built without a controlling (PCB) Printed Circuit Board. AvTek's batteries are powerful. Clearly capable of delivering over 200 amps through the Cig plug, enough to start the engine if NOT controlled. PCB gives you protection while delivering reliable, dependable source of power for 60 mins. or longer to your IFR panel.
28V system P/N 11-01262.....

AVTEK 1ST ALERT ELECTRICAL FAILURE SYSTEM



An early warning detection system that is simple, flawless, & reliable. Detects alternator failure, broken/slipping belts, leaky diodes, regulator failure or if you forgot to turn OFF the master switch after tie down. Uses a reliable MicroCircuit and will never need repair. Has a pulsing red panel mounted LED that is larger and 15 times brighter than normal LEDs and will alert you at the first sign of trouble. Weighs only 1.5 oz. and installs quickly. The LED begins to pulse every time you first turn on the master switch and hit the starter key/button and will go out as the Alternator/Generator comes on so you know everything is alright before you depart. First Alert is now armed & ready to detect any in-flight electrical problems. Size: 3.25" length x 2" width x 1.25" height. Indicate your aircraft voltage when ordering.
P/N 11-01259.....

AVTEK DIGITAL VOLTMETER



The AvTek digital voltmeter is portable and features an LCD display that pivots for viewing at any angle and under any lighting condition, from bright sun to night flights. Designed for 12/24V electrical systems.
P/N 11-01263.....

AVTEK 3-WAY CIGARETTE LIGHTER SPLITTER



AvTek's cigarette lighter splitter accommodates 3 electronic devices. The AvTek unit is ridged and pivots in three directions to minimize clutter. Designed for 12 electrical systems.
P/N 11-01264.....

AVTEK TEKLITEZ



It's amazing, you'll agree. Flexible thin clear Fiber, that is energized by the inverter designed by AvTek. The fiber needs 66Vac at a specific frequency which when energized develops this Cool-Blue-Neon, that is embedded in the substrate. The gas is NOT free flowing. The result is 360 degrees of the best instrument lighting you'll ever see. It's the specific frequency of the inverter that produces the color. Use your imagination and Light YOUR panel the way you want. Unlike other panel lighting that comes ONLY in round screw-on "White Light Filaments". Each five foot TekLitez Fiber is "Snap" connected at the inverter...you can purchase one or more...you can always add more in the future... 9 v Battery or you can connect to your buss...use your own dimmer. TekLitez allows you to illuminate Square instruments. Under the panel for better chart reading. Snap to install. The small thin E.L.F. is Super-Glued into place. The inverters is 2" cube, which goes anywhere behind the panel. Sold in 5 foot lengths per kit which will illuminate approx 5 or 6 large round instruments (includes inverter). Life expectancy is over 80,000 hours.
P/N 11-07169.....

AVTEK BONDING AND GROUND KIT



Do your Panel Instruments Bounce and become erratic? Does your Starter turn your Engine SLOWLY and you have a new fully charged battery? Do you see an ugly corroded Battery Post soon after you clean the Post? These are symptoms of BAD Ground/Bonds. When the Resistive Corrosion is developed at the Starter the result is slow turning during starts. Mechanics miss-diagnosing the problem and a NEW Starter is purchased needlessly. Kit includes: * FAA-APPROVAL * Three (3) Jumper One for the panel, starter and your battery...and Aluminum Fasteners * DVD step by step how to Power-Point Presentation * Sealant . P/N 11-07359.....

ROLL AROUND STARTER



Quick-start vehicles anywhere without AC power. On-board starter battery gives more cranking power than any fast charger, up to 1100 amps cold cranking power. Assists pilots where there is no power. Plugs into any AC outlets for rapid automatic recharging. Solid state circuitry monitors battery condition and maintains maximum state of charge. Patented "stop/go" light warns operator before making a reverse connection. Fully automatic, 10amp charger recharges starter battery or any on-board 12V battery. Will not overcharge. (Battery not supplied, recommended minimum 500 CCA) Features heavy duty 8 ft. long 4 AWG cables, 500 amp clamps, and flexi-spring cable guards. P/N 11-06127.....

PORTABLE STARTER/ 400 AMP BOOST BATTERY



Features: 17 amp hour battery, Up to 50 hours of power, 400 cranking amps, 3ft. long - 4 gauge cables, 1000 peak amps, LEDs for battery state of charge, External charger, Overcharge protection, 400 amp clamps, Wt: 18 Lbs.
P/N 11-01382.....

PORTABLE STARTER/ 600 AMP BOOST BATTERY



Features: High performance 17 amp hour battery, Up to 100 hours of power, 600 cranking amps, 32" long - 4 gauge cables, 1600 peak amps, LEDs for battery state of charge, External charger, Overcharge protection, 600 amp clamps, Wt: 20 Lbs. P/N 11-01383.....

BATTERY TENDER CHARGER



BATTERY TENDER PLUS - 6V @ 1.25A

12V @ 1.25A. The Battery Tender Plus is a 1.25 amp battery charger designed to fully charge a battery and maintain it at proper storage voltage without the damaging effects caused by trickle chargers. Included is a quick connect harness for hard to reach areas. ***DO NOT USE P/N 11-03015 WITH GILL OR CONCORDE AVIATION BATTERIES.**

| Voltage | Amps | Description | Part No. | Price |
|---------|-------|------------------------|----------|-------|
| 6Volt | 1.25A | Battery Tender Charger | 11-04085 | |
| 12Volt | 1.25A | Battery Tender Charger | 11-03157 | |



POWER TENDER PLUS - 12V @ 5A 24V @ 2.5A

WATERPROOF, Shock & Vibration Resistant, Lightweight (LESS THAN 4 POUNDS), compact charger designed for either portable operation or permanent mounting. Charges and maintains both flooded and sealed, maintenance free, AGM, lead acid batteries. Float / Maintenance function maintains batteries at proper storage voltage without the damaging effects caused by trickled chargers. The Power Tender PLUS is easy to use, it's rugged, its compact, it's packed with power, and it's backed by the reputation of the undisputed battery charger industry leader, DELTRAN. Note: Part does not come the Alligator clips. PN 11-06403. Note: For 24Volt (PN# 11-03015) is not for use with Gill or Concord Batteries.

| Voltage | Amps | Description | Part No. | Price |
|---------|------|-------------------|----------|-------|
| 12Volt | 5A | Power Tender Plus | 11-03016 | |
| 24Volt | 2.5A | Power Tender Plus | 11-03015 | |

Power Tender Alligator Clip P/N 11-06403.....

BATTERY TENDER JUNIOR



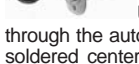
120 VAC /60 Hz input. Includes Ring Terminals and Alligator Clips with BLACK (6V & 12V) QDC. 6V, .750 Amps. P/N 11-05163
12V, .750Amps P/N 11-05164

CIGARETTE LIGHTER RECEPTACLE



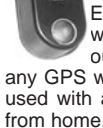
This 12V female cigarette lighter receptacle is made from stainless steel and is ideal or homebuilt panels. 292568.
P/N 11-01294.....

LONESTAR DC CIGARETTE LIGHTER RECEPTACLE



Upgraded significantly over the commercial parts available through the automotive market. Include a high amperage ceramic, internal soldered center lug, MS hardware, heat shrinkable terminals to produce a safer and more reliable power connections to your aircraft's buss. TSO pending, tested with our ultra-small converters. P/N 11-04862.....

GARHAWK CV500 AC-DC CONVERTER FOR GPS PRACTICE



Enables you to practice with your GPS at home or at the office without running down expensive batteries. Plug into any 110V outlet and call up the simulator mode on your GPS. Powers any GPS with power cord having a cigarette lighter plug, and it can be used with a 110V AC extension cord. Ideal for powering a cel phone from home, hotel, or business. P/N 11-00426.....

EL

GROUND STARTING COMPONENTS

AIRCRAFT JUMPER CABLES

Cable is heavy duty, 4 ga. copper, 15 ft. long, twin extruded to help prevent tangling, and room temperature flexible at 40 degrees below zero. Fully insulated clamps wont arc or spark and are rated 500 amps, have a solid copper jaw, and have a flexispring strain relief to prevent cable breakage. Polarity light warns if clamps are connected incorrectly, preventing electrical system damage and personal injury. Available in two styles (above).



6141 - Jumper Cable with standard 3-pin Lexan female plug (equivalent to AN2551) on one end and alligator clamps on other end.
P/N 6141



6142 - Jumper Cable with special Piper single-pin plug on one end and alligator-clamps on other end.
P/N 6142

REPLACEMENT PAIR OF 500 AMP CLAMPS

Used on #6141 and #6142 jumper cables. (above)
P/N 11-06202

JUMPER PLUG



Standard 3-pin female plug equivalent to AN2551 plug. Red Lexan construction is unbreakable and screws together in minutes. Sleeves are solid copper, silver plated. With solenoid pin. Corrosion proof. Mates with AN2552-3A external power receptacle. P/N 11-03158

WOODEN PLUG



Solid laminated ash plug with brass female sleeves. Functions same as AN2551 plug. Add cables and alligator clamps for economical ground starting cables. No soldering required. Solenoid activator element in small hole.
P/N 11-00400

PIPER TYPE PLUG



Mates with 11041 socket. Electrical conductors and connections are designed for maximum efficiency and long life. With ground return terminal. Single pole. Brass female contact with spring-grip tension provides solid engagement with the socket. Cable clamp holds wires firmly in place. Diecast housing. Accepts up to OAWG cable.
P/N 11-03159

PIPER TYPE SOCKET



Self-grounding socket. Single pole. Diecast housing, spring-loaded door. Solid brass contact, 3/8" (9.5mm) diameter, with insulated tip to prevent short circuits. Rubber boot protects terminals and connections. Accepts up to OAWG cable. Fits 2" (50.8mm) diameter hole. Flange holes 21/64" (8.6mm) diameter, 2 15/16" (74.6mm) on centers. Mates with 11042 plug.
P/N 11-00500

EXTERNAL POWER RECEPTACLE



This external power receptacle is designed to mount in a hole in the skin of aircraft. Hole is then covered with hinged access door (not included). Mates with AN2551 type plugs. Model 4621B.
P/N AN2552-3A

PLUG & JUMP



The Plug & Jump is a very portable unit which can be carried in the aircraft at all times because it is so lightweight. It can be used to start the aircraft from an ordinary car using standard jumper cables. It comes in two models; The Universal Model is used for Cessna, Beechcraft, etc. (3 pin plug) and the Piper Model is a single pin. The Plug and Jump is a simple conduit of power from any external power source to the aircraft. It is not a battery in and of itself. The Plug n Jump can be used for either 28V or 14V systems.
Universal Model 11-00971
Piper Model 11-00972

MASTER RELAY



(Battery Solenoid) - Used on production aircraft. Applicable to all homebuilts. Continuous duty. 12V and 24V
111-226 (12V) P/N 11-03161
111-226 (24V) P/N 11-05799

STARTER RELAY

(Starter Solenoid) - For 12V intermittent duty. Adequate current capacity for most engines. P/N 11-03162



SOLENOID DIODE



Contacter diode with 16 inches of lead wire. Install on any contactor, solenoid, or relay, or in certain situations - switches to prevent EMF damage to electronic equipment. Connect the ring terminal end to the trigger wire on the device and the other end to a ground point. P/N 11-06697

PORTABLE POWER SUPPLY



These portable power supplies are an excellent way to power your avionics on the ground while you train or practice in the cockpit. Especially helpful in learning how to operate glass cockpit avionics and panel mount GPS units. To use the

Portable Power Supply plug the cord into an AC wall outlet, and then connect the 3-pin or Piper style plug into the external power receptacle on your aircraft. Furnished with Cessna style 3-pin plug or round Piper style plug. Manufactured in U.S.A.

Features: •Charge control: constant current charge to a constant voltage then to a float standby. •Current Limiting. • Fully automatic 3 stage charger can be left on the battery in maintaining/float mode. •Can be set for any type lead acid battery, including conventional, maintenance free, deep cycle, gelled-type, valve regulated batteries. •Cyclic Voltage: 2.5 volts/cell for 24 volt batteries; 2.6 volts/cell for 36 & 48 volt batteries. • May be preset to customer's specification for battery type. •Continuous - 100% duty cycle. •Low voltage start: will start charging a deeply discharged battery with terminal voltage less than 4 volts. •Reverse polarity and short circuit proof. •Aluminum case.

12V Port Power Supply 3 Pin Plug P/N 11-05084
12V Port Power Supply Piper P/N 11-05085
24V Port Power Supply 3 Pin Plug P/N 11-05086
24V Port Power Supply Piper P/N 11-05087

BYCAN 28V/100AMP APU



The Bycan APU will furnish up to 100 amps at 28 VDC. it plugs into the APU connector on the engine cowling and automatically disconnects the battery so that it will not be drained by the servicing process. A valuable ramp accessory.

| Description | Part No. | Price |
|---|----------|-------|
| 28V, 100AMP Power Supply - Standard Plug | 11-07822 | . |
| 28V, 100 AMP Power Supply - Piper Plug | 11-07823 | . |
| 28V, 100 AMP Power Supply - Pilatus PC-12 | 11-07824 | . |
| 28V, 100 AMP Power Supply - Eclipse E-500 | 11-07825 | . |

RED BARON AUXILLIARY POWER UNIT (APU)



The Bycan RB-14/28-25 Red Baron APU is designed to operate avionics equipment in private and commercial aircraft. It will output 14 or 28 volts DC at up to 25 amperes. The voltage is filtered to eliminate hum and is regulated against input AC line voltage changes. The output DC voltage and current are displayed on front panel meters. The DC is also protected by a circuit breaker. The RB-14/28-25 plugs directly into the APU receptacle on the aircraft. It comes equipped with either the standard three-prong connector or the Piper coaxial connector. Both connectors can be supplied, optionally at a slight extra cost. DC cable length is 8'. The AC line cord is normally 8' in length, but special lengths up to 50' are available. The housing is steel, powder coated in red, for optimum flight line safety. Rubber feet and handle are included.

Features: • AC Line Voltage: 115v, 60 Hz • AC Current Drain: 7 amperes Max • DC Output: 14 or 28 volts, up to 25 amperes. • Weight: 35 lbs (16 Kg) maximum • Size: 10" x 8" x 8" (25 x 20 x 20 cm) • Warranty: Two years from date of purchase • Regulation: 13.75V ± 1.5v, 27.5V ± 2.5v.
Standard Connector P/N 11-02142
Piper Connector P/N 11-02143

THE BLUE ANGEL AIRCRAFT POWER SUPPLY



The Bycan BA-14/2850 Aircraft Ramp Power Supply and Battery Charger is a multi- purpose aircraft flight line service and maintenance tool. The unit has a filtered 14 & 28 volt DC power supply with up to 50 amperes capability for tests of aircraft electrical systems and a secondary mode for recharging run-down batteries. This ramp or hangar accessory is an absolute must for avionics service, gear and flap actuator exercising and other electrical system service. The BA-14/2850 plugs directly into the aircraft APU connector and is tied to the electrical system when the master switch is activated. Selection of output voltage is by a front panel switch which is protected by a switch guard. Closing the guard forces the switch to the 14 volt position. The battery charging mode is selectable by a front panel switch. The charging process is fully automatic. When the charge is in progress a red LED is illuminated. This is replaced by a green LED when the aircraft battery is fully charged. The on/off switch on the unit also resets the unit.

Piper & Cessna Plugs 110V (Two Adapters)... P/N 11-06390
Piper & Cessna Plugs 220V (Two Adapters)... P/N 11-06391
Cessna Plug 110V (One Adapter) P/N 11-06392

EL

VOLTAGE CONVERTERS – POWER PANELS



SS-6 CHARGE CONTROLLER

Morningstar's superior series switching provides many advantages compared to shunt controllers. Series regulation reduces FET heating and lowers voltage stress on the power FET's. A series configuration also improves protection against lightning surges and reduces switching noise. The series design improves charging accuracy. In PWM, series switching becomes self-correcting for temperature and system voltage drops.

P/N 11-04618

DC1428A VOLTAGE CONVERTER



The DC1428A is a switching DC-DC converter. Input voltage is typically 12 to 14V, but the converter will operate over a wide range of input voltage. Output voltage is 28V. The input current is limited at 10 amps, so that available output current depends on input voltage. Provide 3.2 amps out at 28V with 12V input, and provides 3.7 amps out with a 14V input. When current draw begins to exceed these limits, the output as avionics equipment designed to operate at 28V will usually operate down to 18V. However, it is still best to limit 28V loads to 3.2 amps. For multiple 28V loads of approximately 3 amps each, additional DC1428A units can be installed for each load. Ideal for providing a 28V product in a 14V aircraft. Size: 6"x 4.75"x 2.2" Wt: 1.5 lbs.

P/N 11-11685

LONE STAR VOLTAGE CONVERTERS



Lone Star Aviation's new 12V STEP-UP Converter is the smallest (3" x 5" x 2"), most efficient (93-95%) and the most versatile STEP-UP aircraft converter in our industry today. RTCA/DO 160D tested to operate 28V NAC/COM radio equipment such as KX 155, KX 165, KY 196A, KY 196B, and Motorola VHF transceivers on 12V aircraft. Additional 28V electronic devices are HSI, cameras, audio panels, battery backup systems, etc. FAA Approved Under TSO-C71 Now Approved LS03-05002B-MS Features: * Ultra-Small size 2.5" x 4.5" x 2.0" * 93-95% Efficiency rating * Light Weight 275 grams / 0.606 lbs * Optional Connector: MS 3102 Receptacle * Potentiometer for output adjustments * Universal Mounting * LED Status Indicators * Operating Temp: -55C to +70C * Circuit Protection: OV, UV, SC, SP, RP, OC * Regulation Load: +/- .5% * Ripple Input/Output: 20-25mVp-p * Transient response time .5 ms * Easy Installation * FAA TSO-C71 Approved (Pending)

14VDC to 28VDC Converter P/N 11-02888

24VDC to 12VDC Converter P/N 11-03309

Connector Kit 5 Pin DB Style P/N 11-06001

DC/AC INVERTER



This classic DC to AC solid-state "peanut" inverter provides a reliable source of 26 volt, 400 Hz, AC power. Versatile, compact and lightweight, it is ideal for use with Stormscope bootstrap and multifunction display installations. Specifications: * Input: 28VDC @ 0.75 amp. (MD26-28) * 14VDC @ .150 amp.

(MD26-14). * Output: 26 VAC, 400 Hz, Single Phase, 10 volt-amperes

MD26-14V Inverter P/N MD26-14

MD26-28V Inverter P/N11-07062

Specifications for 14V to 28V: • Input Voltage: 10-15 VDC • Output Voltage: 27.5 VDC • Efficiency: 87% (13.5 VDC @ 5A) • Short Circuit: Auto Recovery • Over Voltage: 15 VDC Max • Altitude: 50,000 Ft. • Over Current: 110-140% > 5A Auto Recovery • Terminal Block: (5) Phillips Pan Head Screws • MTBF: 100,000 Hrs./According to Mil HBK 217F • Output Current: 5 A (144w) Cont. 7.5A Peak • Temp.: -55C to (+) 71C • TSO Category: Category A

Specifications for 24V to 12V: • Input Voltage: 22-32 VDC • Output Voltage: 13.8 VDC • Efficiency: 89% (24 VDC @ Full Load) • Regulation: Line-Load = .03 VDC • Ripple: .005 Volts at 400hz • Altitude: 50,000 Ft. • Over Current: 110-140% > 5A Auto Recovery • Terminal Block: (5) Phillips Pan Head Screws • MTBF: 100,000 Hrs./According to Mil HBK 217F • Output Current: 10 A, 12 A Peak at 13.8 VDC • Temp.: -55C to (+) 70C • TSO Category: Category A

HIGH/LOW VOLTAGE WARNING INDICATOR



This warning indicator device drives an instrument panel mounted warning light which provides an indication of abnormal buss voltage. A flashing light indicates a buss voltage greater than 15.5VDC. A steady light indicates a buss voltage below 12.5 volts DC. The weight of the device is 4.5 oz. and operating voltage is 9 to 20 volts DC. Operating current exclusive of lamp load is 0.1 amps. Lamp load: .02 amps maximum. The sensor requires very little power. Consider using an existing breaker of fuse instead of adding a new one. Do not power from a circuit protected more than 5 amps. 22 AWG wire is recommended for all connections. Recommended lamp fixture (not included) should have transparent yellow or amber lens.

P/N 07-06830

LONESTAR THE ELIMINATOR



The Eliminator is a low pass double (LC) PI type filter designed to suppress both low and high frequency line noise. The filter may be connected at the source of the noise or on the input of the connected component.

P/N 11-08055

VERTICAL POWER VP-200 AND VP-200 DUO



The VP-200 brings modern technology to the experimental aviation community to reduce wiring complexity, reduce pilot workload, and increase pilot awareness and safety. It is built using the latest technology, yet is based on time-honored electrical architectures. The system provides device switching and circuit protection, overall electrical systems management, engine monitoring, and advanced checklist functionality.

The VP-200 Series of products includes the VP-200 and the VP-200 Duo. Both are based on the same technology platform, and offer different levels of redundancy. The VP-200 Duo includes a second Control Unit which allows additional switching and control capability. It additionally supports a dual independent bus, dual alternator electrical configuration.

Modes - The VP-200 Series products operate around the idea of Modes. A Mode is a specific phase of ground or flight operations. It provides a method by which to organize and clarify all of the various activities that must occur during normal operations. Using proprietary algorithms, the VP-200 takes inputs from aircraft engine data and GPS data and determines which one of ten Modes the aircraft is in. These Modes are defined as Pre-flight, Before-Start, Start, After-Start, Taxi, Run-up, Take-off/Climb, Cruise, Landing, and Maneuver. While this may seem like a new concept, you do it every time you fly. As a safe pilot, you are trained to do the same things every time you fly. By its very nature, flying lends itself to automating routine tasks that are done over and over every flight. Much of your routine workload is offloaded to the VP-200 allowing you to focus on flying the aircraft. Also, pilots are usually control freaks. With that in mind, the VP-200 allows you to override automatic settings when necessary (for example, manually turning on the landing light or turning off the strobes). It also tells you exactly what it is doing and provides a real-time status display of all your electrical devices.

For each Mode, the user can:

1. Define what devices (lights, radios, etc.) are turned on and off for each Mode.
2. Organize the display of engine instruments to optimize/de-clutter for that Mode (you may want to see different things during start than during cruise).
3. Configure what checklists to show at each Mode change (checklist items are user configurable).

Everything on traditionally-wired aircraft must be turned on or off manually, including lights, pitot heat, lighting, landing lights, fuel pumps, etc. You may use checklists to ensure you do not forget anything. Contrast this with recent advances in automobile technology where one finds automatic lights, windshield wipers, climate control, systems monitoring, integrated console functions, and so on. Often, when your workload is heavy or when you are distracted, items on the checklist are missed. Further, the very act of going through the checklist distracts you from the task of flying the plane itself, talking to air traffic controllers, and looking out for other traffic. **Specifications:** Operating Voltage: 4 volts - 32 volts normal operations, 40v for 1 second, 60v for 100 ms, Operating Temperature Range: -25 to +70 deg C, Storage Temperature Range: -30 to + 85 deg C, Control Unit: 2.5 lbs. Display Unit: 1.8 lbs. Switch Panel: 0.9 lbs

| Description | Part No. | Price |
|--|----------|-------|
| Vertical Power VP-200 | 11-06375 | . |
| Vertical Power VP-200 DUO | 11-06376 | . |
| Vertical Power Climate Control System Option | 11-06377 | . |
| Vertical Power Turbine Support | 11-06378 | . |

ACCESSORIES

| Description | Part No. | Price |
|-----------------------------------|----------|-------|
| Vertical Power VP-200 Harness | 11-06380 | . |
| Vertical Power VP-200 DUO Harness | 11-06381 | . |

VERTICAL POWER VP-50



It brings modern technology to experimental aircraft to simplify wiring and provide advanced electrical system capabilities. It replaces switches, circuit breakers, indicators, voltage alarms,

trim relays, shunts, voltage converters and a host of other products. Plus, it makes wiring a modern electrical system simpler than traditional antiquated alternatives.

The VP-50 installs in your instrument panel and provides eight switches to control the avionics and trim system. It supports a single bus, single or dual-battery, single or dual-alternator electrical configuration. The lighted liquid-crystal display shows overvoltage and under-voltage alerts, short-circuit and over-current alerts, trim position, current draw of the system and individual devices, and bus voltage.

It is built using the latest technology, yet is based on time-honored electrical architectures. The system has the flexibility to adapt to each unique aircraft.

Vertical Power VP-50 P/N 11-06374

Vertical Power VP-50 Harness P/N 11-06379

VOLTAGE CONVERTERS - POWER PANELS

AMERI-KING AK550 POWER BOOSTER

The Ameri-King AK-550 is a FAA TSO'd approved Regulated DC to DC Power Booster Converter. It transforms an unregulated input from a 12 Vdc to a regulated +28 Vdc output to a bootstrap mode. It may be installed in a pressurized area, controlled or non-controlled temperature at altitudes up to 55,000 feet. It's locations include Electrical/Avionic equipment rack, behind or beneath aircraft panel, or cabin pressure bulkhead. Installation is extremely simple. All necessary Accessories are provided, including mating MS connector plug and MS cable clamp.

AK-550-6C (6 amp)..... P/N 11-00064

AK-550-12 (12 amp)..... P/N 11-01453

AK-550-24 (24 amp)..... P/N 11-01454

AMERI-KING DC / DC CONVERTER

The Ameri-King AK551 is a FAA TSO'd approved Regulated DC to DC Power Reducer Converter. It transforms an unregulated input from a 24Vdc battery to a regulated +13.8 Vdc output in a Reducer mode. Applications include critical communication navigation digital Equipment: AM/FM/CD receivers; it may be installed in pressurized or non pressurized area, controlled or noncontrolled temperature at altitude up to 55,000 feet. It's locations include Electrical/Avionic equipment rack, behind or beneath aircraft panel, or cabin pressure bulkhead. Mating connector plug is provided.

AK-551-9 (9 amp) P/N 11-00066

AK-551-18 (18 amp) P/N 11-01455

AK-551-40M (40 amp) P/N 11-01456

28 VDC MINI INVERTER

This mini inverter converts 28VDC to 115VAC 60Hz output 9mod.Sine Wave). Excellent for enabling use of a laptop or similar unit that has a wall plug. For 28 volt aircraft. Size: 6.06"L x 2.87"W x 1.77"H. Wt: 1.08 lbs. Not FAA Approved. Lightweight and compact, user replaceable fuse, 150VA continuous output, 200VA peak power for 5 min., 400VA surge power, overload protection, short circuit prot., 1 yr warranty. P/N 11-02029

DELUXE COCKPIT VOLTAGE CONVERTER

DC-DC Converter, Device to reduce voltage from 28V to 12V. Allowing the user to operate 12V items in a 28/24V airplane. The device is fully electronic, no passive elements generating heat. It is fully protected and fused. A green LED indicates normal and abnormal conditions (overload). The unit is enclosed in a small precision machined aluminum box with integrated heatsink. Input is via a fused lighter plug and output is via a female light receptacle. Size: 1.3"x 1.3"x 2.3"; Weight: approx. 5.0 oz. 3 AMP.28-12V DC-DC Converter..... P/N 11-04330

10 AMP.28-12V DC-DC Converter..... P/N 11-04331

Y-COUPLER - Heavy duty device that allows user to split the output of their cigarette lighter outlet in their airplane or to be used in conjunction with one of the above Cockpit Voltage Converters (running multiple items of one converter). This device is fuse protected (6.0A)

02YC Y-Coupler..... P/N 11-00401

INVERTER - A device to produce Alternating Current out of a Direct Current Source. This device will generate 110V AC from a 28/24V DC Source (load limit is 150W continuous, 200W peak). Plug it in to your airplane lighter receptacle and have a household 110V AC outlet. This device is fuse and electronically protected against overload, over temperature, over and under voltage. Dims: 1.77"x 2.87"x 6.06"; Wt: 12.77 oz. 110I 28-110V Inverter..... P/N 11-00402

LONESTAR FEED THRU FILTER

Lone Star Aviation's 50 amp filter (FEED THRU) attenuates EMI-RFI noise generated from fuel pumps, ignition systems, dc motors, autopilots systems, etc. The 50 amp (feed thru) filter also can be used to filter ac noise from power lines on autopilots, instrumentation, audio panels, as well as other on board dc equipment effected by noise..... P/N 11-04851

LONESTAR FILTER 70 AMP

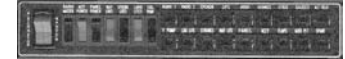
Lone Star Aviation's 70 amp filter attenuates EMI-RFI noise generated from alternator, generator systems, gear motors, blowers for a/c systems and other higher current noise sources. The 70 amp filter also can be used to filter the aircraft's avionics buss to filter RF, NAV, GPS, as well as other navigational equipment. The filter is FAA- PMA for certificated aircraft as well as for experimental aircraft. P/N 11-04849

LONESTAR FILTER 100 AMP

Lone Star Aviation's 100 amp filter (FEED THRU) (Fail Safe Design) attenuates both low and high frequency, (10hz to 30 mhz) of EMI-RFI noise generated from the aircraft's alternator systems to the aircraft's dc buss. This filter, (100 amp Fail Safe design) is used by OEM aircraft manufacturers to attenuate 100% of the on board noise before it penetrates the aircraft's dc buss. The filter is FAA- PMA pending for certificated aircraft but can be used on experimental aircraft. P/N 11-04850

POWER PANELS FOR HOMEBUILTS

Homebuilder's Power Panel



Mini Power Panel

Self contained power distribution systems that include commonly used switches and circuit breakers. Based on a heavy duty printed circuit board that eliminates the bus bars and provides a user serviceable and logical arrangement of all power system components. Only DC rated switches and quality resettable thermal circuit breakers are utilized. Connections to the panels are via screw type terminal blocks that are neatly labeled and organized for simple wiring. The avionics 'sub' bus is filtered to protect electronics and suppress noise in the aircraft communication systems. All metal parts are stamped aluminum, the face plate artwork utilizes a Lexan overlay material that is both attractive and durable. Complete documentation and suggested wiring diagrams are included.

Standard Power Panel: 8 Switches: Fuel Pump, Landing Light, Strobe Lights, Navigation Lights, Panel Power, Pitot Heat, Radio Master, and a Cessna type split master switch for master solenoid and alternator field control. **18 Circuit Breakers:** Fuel Pump, Landing Light, Strobes, Nav Lights, Panel Power, Pitot, Alternator Field, Gyros, Gauges, Trim, and Spare, (on Radio Bus) Radio1, Radio 2, GPS, Transponder, Audio, Avionics. **Dims & Wt:** 2.25"H x 13.00"W x 7.50"D, approximately 3.0 lbs.

Mini Power Panel: 6 Switches: (main panel) Fuel Pump, Landing Light, Strobe Lights, Navigation Lights, Panel Power, (side panel) has a Cessna type split master switch for master solenoid and alternator field control. **13 Circuit Breakers:** Fuel Pump, Landing Light, Strobes, Nav Lights, Panel Power, Engine Instruments, & Spare, (on Radio Bus) Radio1, Radio 2, GPS, Transponder, Avionics, (side panel) 30 amp alternator output breaker. **Dims & Wt:** (main panel) 2.375"H x 8.375"W x 6.50"D, (side panel) 2.375"h x 2.5"w x 2.0"d, approximately 2.5 lbs.

Homebuilders Panel P/N 11-11675 ea
Mini Power Panel..... P/N 11-11680 ea

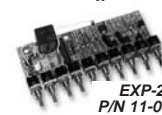
EXP BUS PRODUCTS



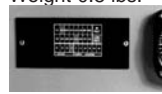
EXP TRAY EX-110- the EXP BUS mounting tray is the ultimate in quick build time savings. The tray comes Pre-punched, and pre-assembled with rocker switches prewired to the PC board. All the builder needs to do is to cut a single rectangular hole in the panel, connect the battery, alternator, and all of the load wires to the proper terminals on the EXP BUS2 PC board mounted in the chassis. 14V DC systems (not recommended for 28V aircraft). Replaces all but one circuit breaker in most homebuilt aircraft, and includes the master switch, master relay, and the avionics master switch. The avionics output bus provides six protected circuits, and automatically shuts off when the starter is engaged. Three master bus outputs operate items such as panel lights, gyros and engine instruments. Switched outputs include the alternator field, Beacon/Strobe output, nav light output, aux fuel pump output, two landing light outputs, and two spares. All outputs are overload protected, eliminating the need for fuses or circuit breakers, and saving the labor of installing and wiring them up.

EX-110
P/N 11-00430

EXP 2V - the Expbus II is a lifesaver when wiring up your homebuilt project. The EXPBUS II is a complete electrical system on a special high current, printed circuit board. 14V DC systems (not recommended for 28V aircraft) For a small additional charge, we can configure your board with any size (1 to 11 amps) breakers in any position. Size: 7.8" long by 3" deep by 1.9" tall. Weight 0.8 lbs. P/N 11-00431



EXP-2V
P/N 11-00431



IND-2
P/N 11-00432

IND 2 - Annunciators for each solid state breaker on the EXP BUS * Over and undervoltage warning lights * Ammeter display * Instrument light dimmer circuit * Single ribbon cable installation to EXP Bus The Indicator module is an accessory for the EXP BUS DC LOAD CENTER. This optional accessory provides several enhancements to the basic load center, all mounted in a small panel mount module, 4.6 inches long, and 2 inches wide. The module extends 2 inches in depth, behind the panel. The module provides an annunciator output for each fused output on the LOAD CENTER, which illuminates if the circuit is tripped. It also provides OVER and UNDER VOLTAGE annunciators, an AMP-METER indicator, and a light dimmer circuit for the instrument lights. P/N 11-00432



BRKT 2 - Mounting brackets to simplify mounting the PC board in the aircraft. Put things where you want them to be. Free Shipping on this item. P/N 11-00433

EXP BUS Back-up Battery P/N 11-07115



STICK GRIPS

INFINITY MILITARY STICK GRIPS



Infinity Aerospace designed these grips with safety, comfort, functionality, durability and aesthetics in mind. The ergonomic design is contoured to the shape of your fingers and includes a fatigue reducing hand rest at the base. The non-glare matte black finish is abrasion and impact resistant for long life, yet easily removable, maintainable & repairable. Matching customized

right & left hand models available. All the major cockpit functions can be at your finger tips. Thousands have already been installed in over 50 models of aircraft (even a 314 ft custom Yacht and a submarine!) FAA certified in the new Micco and Eagle FAA certified aircraft, field approved in Bell 206, Hughes 500 and Hiller helicopters, Aero Commander 500 A's, Mooney's, Cessna's, Swift's and in blimps. Standard issue in several of today's finer Sport Aircraft Kits. Features: • 6" long • fits stick OD's from 5/8" to 1-1/4" • Includes 3 ft of shielded cable w/17 conductors. Color coded pre-wiring & installation schematic • Made from lightweight high impact, durable high temp. tolerant flame retardant & flash resistant injected ABS material • Wt: 12 oz. • Easy removal for maintenance, customizing or repair. Possible Switch Functions: • 2-Axis Trim Switch: Pitch & Aileron or Pitch & Rudder or Step frequencies and/or flip-flop frequencies and/or transponder ident.; or sweep spotlights, cameras, computer cursors, etc.; • Red Trigger Switch: Push-To-Talk (PTT); or 35mm camera, video camera, audio recorder, etc.; • ON/OFF Tactical Push-Buttons: Main fuel pump, aux fuel pump, landing light(s), taxi light(s), nav lights, strobe lights, pitot heat, ident., etc. Four of the switches can be changed to Normally Open (NO) or Normally Closed (NC) momentary push-button for transponder ident., auto-pilot disconnect or flight management control. Also, a spring loaded-to-center and/or an ON/Center OFF/Momentary ON toggle switch can be installed to operate flaps, speed brake(s), spoilers, cowl flap(s), rudder trim, aileron trim, etc.

| Description | Part No. | Price |
|---|----------|-------|
| Military Stick Grip A/C with Flap/Brake (Right) | 11-00031 | . |
| Military Stick Grip A/C with Flap/Brake (Left) | 11-00032 | . |
| Military Stick Grip A/C without Flap/Brake (R) | 11-00033 | . |
| Military Stick Grip A/C without Flap/Brake (L) | 11-00034 | . |
| Military Stick Grip with Spoilers (Right) | 11-00036 | . |
| Military Stick Grip with Spoilers (Left) | 11-00667 | . |
| Replacement Switches for extra customizing: | | |
| Momentary push-button switch | 11-00218 | . |
| ON/OFF (8636) SPDT push-button | 11-00219 | . |
| Toggle [spring loaded-to-center – ON/OFF/ON] | 11-00220 | . |
| Toggle [ON/Center OFF/Momentary ON–ON/OFF/ON] | 11-00221 | . |
| Spacers/Adapters: | | |
| 1" OD x 3/4" ID (i.e.-for Lancairs & canard tubes) | 11-00222 | . |
| 1" OD x 7/8" ID (i.e.-for Glasairs & RV co-pilot tubes) | 11-00223 | . |
| Infinity Switch with China Hat (Right) | 11-04757 | . |

TEAK WOOD CUSTOM PISTOL GRIPS



Teak wood is beautiful and absorbs sweat, preventing any sticky slime build-up. The grips come in standard, master and ultra styles in left & right hand. The standard grip comes with a push button on top with special dust-proof cover. Normally used for a push-to-talk button, open switch and good for 250,000 cycles min. The master grip has a larger head to accommodate a 4-way trim switch & push-to-talk button. The trim switch is the same one used with the M.A.C. systems. The ultra grip has a larger surface to accommodate the 4-way

trim and auto-pilot and/or air brake with the push-to-talk located near the tip of the index finger. The ultra can handle a total of four switches, when using the air brake, in its head. Configurations can also be custom designed. All grips come with buttons and 3/4" or 1" standard bore. Larger bores available.

| Description | P/N | Price | Description | P/N | Price |
|-----------------------|----------|-------|---------------------|------------|-------|
| 3/4" Standard (Right) | 11-02910 | . | 1" Standard (Right) | 11-02910-1 | . |
| 3/4" Standard (Left) | 11-02915 | . | 1" Standard (Left) | 11-02915-1 | . |
| 3/4" Master (Right) | 11-02920 | . | 1" Master (Right) | 11-00067 | . |
| 3/4" Master (Left) | 11-02925 | . | 1" Master (Left) | 11-02925 | . |
| | | | 3/4" Ultra (Right) | 11-02930 | . |
| | | | 3/4" Ultra (Left) | 11-02935 | . |

RAC STICK GRIPS



G101 G205 G207

Ray Allen Company G1 and G2 series stick grips use modern, flush fitting push-button switches to control one or two axis electric trim. When one grip is used, these switches can be wired directly to RAC trim servos. This eliminates the need to wire relays in your trim system. However, if two grips are used, you will need either relays for the control of trims from one grip to the other. The grip itself is made of semi-soft UV and oil resistant foam. The upper switch housing is made of nylon with a lightly textured finish.

The **G101** grip (4.75" height) features a momentary contact switch on top that can be used as a PTT button. (Old MAC Model G1)
P/N 11-09930

The **G205** grip (5.25" height) has 5 functions which include a PTT and a 4 SPDT, momentary contact switches. These switches are rated at 5 amps and can be used for other purposes. (Old MAC Model G5)
P/N 11-09920

The **G207** grip (5.4" height) has additional momentary contact push-button switches mounted on top that can be used for controlling functions on avionics, auto-pilot, etc. (Old MAC Model G7)
P/N 11-09925

The **G303** stick grip has two trim switches, a faceplate slotted vertically for 1-axis trim and a PTT switch.
P/N 11-02538

The **G305** stick grip has 4 trim switches, a faceplate slotted vertically and horizontal for 2-axis trim and PTT switch. P/N 11-02539

The **G307** stick grip has 4 trim switches, a faceplate slotted vertically and horizontal for 2-axis trim and PTT switch. P/N 11-02540

Ray Allen stick grips are designed to fit any stick size up to 1" in diameter with the use of spacers. Two nylon spacer are included with each grip enabling easy installation on 3/4", 7/8" and 1" sticks. All Ray Allen grips come as a complete kit and include pre-cut and stripped, Teflon insulated wire. A die-cut label sheet is also supplied in the **G205** and **G207** grips

FLIGHT GRIP



#2 #4

The control stick grips from Flight Grip are modular in design to allow maximum flexibility when specifying switches to control the various electrical items on your aircraft and for ease of installation and assembly. Two "off-the-shelf" configurations are listed below. The Model #2 grip provides for control of two functions using

the rocker trigger switch. The trigger switch features momentary contact either side of center, with spring return to center OFF action. The Model #4 grip is the same as the Model #2, but adds two push-button switches for thumb activation in the top cap of the grip. The switch mounted closest to the thumb rest is a latching type (push on – push off), and the remaining switch is a momentary type. Left hand grips are available with all the same switch options. Grips are designed to fit 1-1/8" OD control sticks and adapter bushings are available to adapt to 1", 7/8" and 3/4" OD control sticks.

| | |
|-----------------------------------|--------------------|
| #2 (Right Hand-2 Functions) | P/N 11-02000 |
| #4 (Right Hand-4 Functions) | P/N 11-02050 |
| #2L (Left Hand-2 Functions) | P/N 11-06753 |
| #4L (Left Hand-4 Functions) | P/N 11-06754 |
| Adapter Bushing 1" | P/N 11-06755 |
| Adapter Bushing 7/8" | P/N 11-06756 |
| Adapter Bushing 3/4" | P/N 11-06757 |

HOMEBUILT CONTROL STICKS

These homebuilt control grips are made of high-strength urethane plastic, finish painted in matte black and come complete with all necessary hardware (AN screw, nut, washers). Available unbored or bored to accept 7/8", 1", or 1-1/8" diameter tubing.



All of these grips (except unbored) are available w/PTT Switch at . Add -1 to end of part number for PTT.

| Grip | Bore | Part No. | Price |
|---------|-------------|------------|-------|
| Right | Unbored | 11-01010 | . |
| Right | 7/8" Bore | 11-01015 | . |
| Right | 1" Bore | 11-01020 | . |
| Right | 1-1/8" Bore | 11-01025 | . |
| Left | Unbored | 11-01010-L | . |
| Left | 7/8" Bore | 11-01015-L | . |
| Left | 1" Bore | 11-01020-L | . |
| Left | 1-1/8" Bore | 11-01025-L | . |
| Neutral | Unbored | 11-02010 | . |
| Neutral | 7/8" Bore | 11-02015 | . |
| Neutral | 1" Bore | 11-02016 | . |
| Neutral | 1-1/8" Bore | 11-02017 | . |

RUBBER STICK GRIPS

Rubberized urethane with granular like non-slip surface.



| | | |
|------------------------------|--------------------|----|
| 7/8" I.D. Stick Grip | P/N 11-00110 | ea |
| 1" I.D. Stick Grip | P/N 11-00101 | ea |
| 1-1/8" I.D. Stick Grip | P/N 11-00102 | ea |

RAC TRIM SYSTEMS

RAC ELECTRIC TRIM SERVOS

Ray Allen electric trim systems include a servo, LED position indicator, rocker switch and a clevis/pushrod kit. The heart of the Ray Allen trim system is the servo and they are designed specifically for experimental aircraft. They are small, lightweight, and powerful enough to control trim surfaces on any small aircraft. They will automatically stop when their travel limit is reached and will not travel unless power is switched on by the pilot. Voltage polarity determines direction of travel. Ray Allen servos can be purchased separately for controlling devices that would otherwise require bulky, complicated mechanisms. They are extremely durable and should last the service life of your aircraft. Production samples have been bench tested 50,000 cycles under loaded conditions relating to 244 hours of continuous use or thousands of flight hours. Ray Allen has 4 different servos available: The T2-7A, T2-10A, T3-12A, and the miniature T4-5. Check the specifications to determine which servo output travel best suits your application.



T2-7A
T3-12A
T4-5
*T2-7A = exact replacement for MAC 4A servo. *T2-10A = exact replacement for MAC 6A servo. *T3-12A = exact replacement for MAC 8A servo. *T4-5 is exact replacement for the Mac S9 servo.

T2/T3 SERVO SPECIFICATIONS

| | |
|--------------------------------|-----------------|
| Operating Voltage..... | 12-14 VDC |
| No Load Current..... | 150 ma |
| Weight..... | 4oz. (113 g) |
| Max Thrust..... | 40 lbs. (18 kg) |
| Max Operating Thrust..... | 20 lbs. (9 kg) |
| Output Shaft Movemt.(T2-7A*) | 0.7" (17mm) |
| Output Shaft Movemt.(T2-10A*) | 1" (26mm) |
| Output Shaft Movemt.(T3-12A*) | 1.2" (31mm) |
| Output Travel Time (T2-7A).... | 10 seconds |
| Output Travel Time (T2-10A)... | 16 seconds |
| Output Travel Time (T3-12A)... | 19 seconds |

T4-5 SERVO SPECIFICATIONS

| | |
|----------------------------|-------------------|
| Operating Voltage..... | 12-14 VDC |
| No Load Current..... | 75 ma |
| Weight..... | 2.5 oz. (71 g) |
| Max Thrust..... | 30 lbs. (13.5 kg) |
| Output Shaft Movement..... | 0.5" (13mm) |
| Output Travel Time..... | 15 seconds |
| Length..... | 2.25" (57mm) |
| Width..... | 2.25" (57mm) |
| Height..... | 0.77" (20mm) |

RAC SERVO SYSTEMS

| RAC Servo System | Part Number | Output Shaft | | Price ea. |
|------------------|-------------|--------------|-------------|-----------|
| | | Movement | Travel Time | |
| T2-7A | 11-11505 | 0.7 in. | 10 sec. | |
| T2-10A | 11-11605 | 1.0 in. | 16 sec. | |
| T3-12A | 11-11615 | 1.2 in. | 19 sec. | |
| T4-5 | 11-11620 | 0.5 in. | 15 sec. | |

SERVOS ONLY

| RAC Servo System | Part Number | Output Shaft | | Price ea. |
|------------------|-------------|--------------|-------------|-----------|
| | | Movement | Travel Time | |
| T2-7A | 11-02048 | 0.7 in. | 10 sec. | |
| T2-10A | 11-02058 | 1.0 in. | 16 sec. | |
| T3-12A | 11-02065 | 1.2 in. | 19 sec. | |
| T4-5 | 11-02066 | 0.5 in. | 15 sec. | |

*T2-7A = exact replacement for MAC 4A servo. *T2-10A = exact replacement for MAC 6A servo.
*T3-12A = exact replacement for MAC 8A servo. *T4-5 is exact replacement for the Mac S9 servo.

RAC SWITCHES



RS2 ROCKER SWITCH - Very positive snap action in 2 directions and returns to a center off position. It was designed specifically for Ray Allen trim systems. It is wired to connect both power leads to ground when the rocker is released. This eliminates motor coasting & allows very precise trimming. The RS2 switch is rated at 1amp. The faceplate measures 1.75" (44mm) x 1.0" (25mm) x 1.47" (37mm) deep. Included with trim systems or can be purchased separately. P/N 11-02035

ROS-4 FOUR-WAY SWITCH - This compact multi-action switch can be installed inside your control stick grip to activate both elevator and aileron trims. ROS-4 has a SPST action so it must be used in conjunction with a relay deck to operate Ray Allen servos. Rated at 1 amp. P/N 11-02075

RANS ELEVATOR TRIM SYSTEM



Rans Elevator Trim System features a trim tab actuated by a push-pull wire. By turning the trim wheel, the wire moves the trim tab. The system has the look and feel of a standard aircraft trim wheel. The trim tab is constructed of sheet aluminum and can be adapted to the trailing edge of many homebuilts and ultralights. The trim tab is sized for both low & high speed aircraft and since it is mechanical, requires no battery or power source other than the pilot's hands.

| | |
|--|--------------|
| Trim Sys. less Tab (no panel or flap lever mount) .. | P/N 11-09955 |
| Trim Sys. with Lower Panel..... | P/N 11-09960 |
| Trim Sys. Flap Mount..... | P/N 11-09965 |
| Trim Sys. without Wheel..... | P/N 11-09970 |

RAC INDICATORS/SENSORS/ACCESSORIES



RP3 LED POSITION INDICATOR - This LED meter is designed to be installed in the cockpit and give an indication of the servo output shaft position. The ten LEDs are the brightest available for superior visibility in sunlight, but can be dimmed for night flight. It can be installed horizontally or vertically. 3 wires as small as 28 gage connect the indicator directly to a Ray Allen servo (or a position sensor). The face plate measures 1.75" x 0.75" x 1.1" deep. The RP3 is the standard position indicator included in R.A. trim systems. P/N 11-02020



GWL-1 GEAR WARNING LIGHTS - This 6 light indicator is designed to be installed in the cockpit and give an indication of the landing gear position. The lights are high intensity LEDs and are inset to provide maximum visibility in bright sunny conditions. The top lights are yellow and the bottom are green. Six 26-gage wires connect the lights directly to the gear safe/unsafe switches (not included). The faceplate measures 1.35" x 1.75" x 1.5" deep. Gear warning lights come with labels pre-installed. P/N 11-01575



POSITION INDICATOR/ROCKER SWITCH LABELS - Finish off your panel with these high quality labels. Rocker switches and needle indicators require a LARGE label, LED indicators use a SMALL label. Elev 1 shows trim down at top of label.

| | |
|------------------------|--------------|
| Rudder - Large..... | P/N 11-01819 |
| Rudder - Small..... | P/N 11-01820 |
| Aileron - Large..... | P/N 11-01816 |
| Aileron - Small..... | P/N 11-01815 |
| Elev 1 - Large..... | P/N 11-01822 |
| Elev 1 - Small..... | P/N 11-01821 |
| Wing Flap - Large..... | P/N 11-01818 |
| Wing Flap - Small..... | P/N 11-01817 |
| Cowl Flap - Large..... | P/N 11-01576 |
| Cowl Flap - Small..... | P/N 11-01814 |



POS-12 POSITION SENSOR - When combined with a Ray Allen indicator, this sensor can be used to measure the position of wing flaps, cowl flaps, or many other mechanisms. Small enough to be installed anywhere, size: 2.7" l x 0.8" w x 0.5" h. (note: T2 & T3 servos have their own built-in sensors) 1.2" travel. P/N 11-01321



REL-2 SERVO RELAY DECK - This device converts the momentary contact action of the ROS-4 4-way switch, or any SPST pushbutton switch, into a DPDT action that is necessary to operate Ray Allen servos. You will need one of these relay decks for each servo in your installation. The REL-2 relay deck replaces the REL-1 relay deck. The REL-2 functions the same as the REL-1, however the wire exit location is on the top. Measures 1.6" (40 mm) x 1.8" (49 mm) x 1.1" (28 mm). P/N 11-05312



SPD-1 SERVO SPEED CONTROL - Enables you to slow the speed of your trim servo to suit your individual installation. Size: 2" x 0.5" x 0.8". P/N 11-02078



REG-1 12V REGULATOR - Enable you to operate servos and indicators in aircraft having 28V electrical systems. Converts all input voltages up to 35V to 12V. Capable of supplying 1 amp of current allowing you to operate 2 trim systems simultaneously. Size: 2" x 0.5" x 0.8". P/N 11-02036



RC8-7 CLEVIS/PUSHROD KIT - Contains two 8-32 threaded clevis forks; 7" long, 8-32 threaded, stainless steel pushrod and hardware. This kit included with Ray Allen trim systems. NOT compatible with POS series position sensors. The T4-5 clevis/pushrod kit has just one clevis assembly. RC8 clevis & its hardware are available separately.
RC8-7 Kit.....P/N 11-02040
T4 Pushrod Kit.....P/N 11-02042



WC2 5-WIRE TEFLON® INSTALLATION CABLE - This durable, flexible wire cable is highly recommended for Ray Allen installations. Consists of 5 separate color coded, 26-gage, 19-strand, silver-plated, FEP Teflon® insulated wires inside a tough, all Teflon® sheathing.
20 ft. roll.....P/N 11-01577
25 ft. roll.....P/N 11-01578
50 ft. roll.....P/N 11-01579

EL

RAC BEZEL SWITCHES

RAC - RBS SERIES BEZEL SWITCHES

An excellent addition to any instrument panel. The bezel measures 1.25" w x 1.35" h. A die-cut label sheet is purchased separately. The switches are SPST. They have screw terminals and are rated at 15 amps. Specify Toggle (RBS-T11) or Pushbutton (RBS-P11) when ordering. The Ray Allen Gear Bezel Switch (RBS-GS) is the same custom bezel as above combined with SPDT retract gear toggle switch. The switch is rated at 15 amps and has a pull to unlock feature preventing accidental engagement. The Gear Bezel Switch comes with the labels pre-installed.

| RAC Part No. | Description | Part No. | Price |
|--------------|----------------------------|----------|-------|
| RBS-T11 | Bezel Switch - Toggle | 11-01364 | . |
| RBS-P11 | Bezel Switch - Push Button | 11-01365 | . |
| RBS-GS | Bezel Gear Switch | 11-01366 | . |
| RBS-L1 | Bezel Switch label sheet | 11-01367 | . |



| | | | | |
|-----------------|-------------------|--------------------|---------------|-----|
| LANDING LIGHT | CABIN LIGHTS | BATTERY MASTER | ALTERNATE AIR | OFF |
| NAV LIGHTS | PANEL LIGHTS | AVIONICS MASTER | INVERTER | OFF |
| ROTATING BEACON | PULSE LIGHT | ALTERNATOR | CARB HEAT | OFF |
| STROBE LIGHTS | TAXI LIGHT | AUTOPILOT | ON | OFF |
| STARTER | DIMMER | PITOT HEAT | ON | OFF |
| ENGAGE | IGNITION No. 1 | HYDRAULIC PUMP | OFF | OFF |
| FLAPS UP | IGNITION No. 2 | LOW BOOST | ON | OFF |
| FLAPS DN | FUEL PUMP | HIGH BOOST | ON | OFF |
| CABIN FAN | AVIONICS MASTER A | BOOST PUMP | ON | OFF |
| CABIN AIR COLD | AVIONICS MASTER B | STANDBY ALTERNATOR | ON | OFF |
| CABIN AIR HOT | LEFT MAGNETO | TRIM MASTER | OFF | OFF |
| OXYGEN | RIGHT MAGNETO | PARKING BRAKE | OFF | OFF |

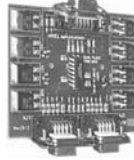


TWO PLACE TRIM MIXER

The 2 Place Trim Mixer is a solid-state SMT equipment designed to replace the traditional mechanical relays earlier used for two pilots to operate the aircraft's trim system while adding the advantages of logic functions found in electronic equipment. The mixer incorporates MOSFET (Metal Oxide Silicon Field Effect Transistor) transistors for switching the high current with no moving parts and no electrical arc to prevent fuel fumes ignition.

A typical Trim System is composed of the following elements:

- Harnesses
- A mixer unit, the 2 Place Trim Mixer
- 2 DC trim motors (such as the MAC Servo with or w/o connections to position indicator)
- SPST switch (option) which are not included & should be provided by the customer



A key feature of the 2 Place Trim Mixer is the prevention of a conflict between two opposite inputs (eg. "UP" by the pilot, and "DOWN" by the copilot). Once an input is established by one of the crew, another input is ignored. An additional switch (option) enables the pilot to "Disable" the copilot from inputting any command to the trim motors.

The 2 Place Trim Mixer is enclosed in an aluminum enclosure for EMI/RFI protection and for easy installation onto the aircraft.

- Specifications:
- Operating Temp.: -20°C to +85°C
 - No. of Operators: 2
 - Operating Voltage: 10VDC to 16VDC
 - Max Current: 7A
 - Quiescent Current: Less than 4mA
 - Current Through any Switch Contact: Less than 10µA

P/N 11-02876

ELECTRONIC FLAP CONTROLLER



An electronic device designed to power and automatically position electrically powered flaps. It is a combination drive unit for the flap actuator, and an indicator of flap position. It features momentary push button switches with built in green LED

lights, providing settings for 4 flap positions. Each switch can be user pro-grammed to a specific flap position. Once calibrated, momentarily pushing any switch, will then automatically drive the flaps to the pre selected position and stop. The LED corresponding to the new position will then illuminate indicating that the flaps are now in the new position. LED lights can be dimmed for night flying. Can work with any actuator that draws less than 7 amps current at 12 volts when operating. It requires that the system have a 5K or 10K resistive position sensor that provides feedback of flap position. Many actuators incorporate this type of sensor in the unit, or separate linear resistive sensors are available from equipment suppliers. 3 1/2 inch long, it can be mounted either horizontally or vertically. The controller incorporates an interface to the optional Aircraft Components gear position warning systems eliminating the need for the manual flap position switch otherwise needed.

P/N 11-07728

TRIM SWITCHES



TRIM SWITCH CA3112 - The CA3112 is identical to the S-Tec 3112 switch but precision machined from aircraft aluminum and will not crack or break like the OEM version.

P/N 11-07354



TRIM SWITCH CA100-1 - The CA100-1 switch is used on a certified aircraft. It uses MIL-SPEC switches (SPST) and precision machined from aircraft aluminum and will not crack or break like cheap plastic switches. It has a nice tactile click action.

P/N 11-07355

FPS PLUS - FLAP POSITIONING SYSTEM



The FPS-Plus is a full service, automatic, flap positioning system. This system operates similar to the "Cessna type flap systems" that many pilots were trained in. The pilot can easily go from one flap position to another with one quick press of the flap button. All flap stop positions (from 0 to 10, your choice) are easily, user programmable. This system is also fairly simple to retrofit it to your "already flying" aircraft.

The Plus feature of this system, allows you to program an elevator trim position for each flap position. Your elevator trim will be automatically adjusted, for every different flap setting that you choose. NO more manual tweaking of the elevator trim is needed for every different flight configuration.

The pilot can now pay more attention to the actual "flying the aircraft", rather than tweaking the correct amount of elevator trim for every different flight configuration. Flying is made much more enjoyable. If you desire to retract the flaps fully, all you have to do, is press the "flap up" button for more than 1 second. The flaps will be automatically retracted to their full up position. The elevator trim is also automatically adjusted to your cruise trim position.

Features: • Full Automatic Flap Positioning with or without "Automatic Elevator Trim Compensation" • Step and Proportional Modes • Designed for +12v and +24v Systems • Compatible with Most Motors and Indicators • Setup is Fully User Programmable • No Limit Switches to Install

Specifications: • The system will operate on +12Vdc or +24Vdc systems. • Maximum amperage for each motor, 10A. • Dimensions (overall) 3" x 5.75" x 1.25" • Footprint 3 x 5.75" • Mounting 2 holes in bottom flanges, 0.156" dia, 5.375" apart • Weight < 4oz.

FPS-Plus Reflex Operation -All features of this system are exactly the same as our FPS-Plus. The exception is, when you press the Flap Up Button for more than a second, it returns the flaps to the zero degree position, not "full up". This is an advantage when initiating a "go-around" and "touch and goes". It is also an advantage when your flaps are in any down position, and you want to return the flaps to the "take-off" position.

FPS-PLUS with Elev. TrimP/N 11-02980

FPS-PLUS without Elev. TrimP/N 11-02981

FPS - PLUS REFLEX.....P/N 11-06440

3 AXIS TRIM RELAY BOARD



3 Axis trim relay and buffer board has been designed to allow easy control of trim motors from small grip mounted or remote switches. Three Axis control is possible with each of the circuits being configured in a double throw format. "Off" circuit conditions apply ground to both motor wires providing an effective braking actions. Board will work with single or winding DC motors. Other remote controls are possible such as auto pilot disconnect or recognition lights and more. Relays are continuous DC rated at 10 Amps. Dimensions are 5.6"L x 4"W x 1.0"H

P/N 11-02043



BENDIX STARTING VIBRATORS

| Part Number | Description | Used with Ignition System | Price |
|---------------|----------------|---------------------------|-------|
| 10-176487-121 | 12V DC | S-200, S-600, S-700 | . |
| 10-357487-241 | 24V DC | S-200, S-600, S-700 | . |
| 10-176487-122 | 12V DC | S-1200 | . |
| 10-357487-242 | 24V DC | S-1200 | . |
| 10-176485-121 | 12V DC W/Relay | S-200, S-600, S-700 | . |
| 10-176485-241 | 24V DC W/Relay | S-200, S-600, S-700 | . |
| 10-176485-242 | 24V DC W/Relay | S-1200 | . |

IGNITION SWITCHES

ACS KEYED IGNITION SWITCHES

MFG BY ACS PRODUCTS CO.



These fine quality switches are being used in many production aircraft such as Cessna, Schweizer, Ayers and Air Tractor. They provide "on" and "off" electrical control of both magnetos on single engine aircraft. The key-operated switches mount from rear of panel in 7/8" dia. hole. Available with or without starter position.

A-510-5 Without Starter Position., Supplied with switch plate and two keys. (diode not required) P/N 11-03169.....
A-510-2 With Starter Position., Supplied with switch plate two keys. (diode included)..... P/N 11-03170.....

ACS IGNITION SWITCH AND LOCK SETS



MODEL NO. A-510-5K, Includes ignition switch without starter position, two aircraft locks (one door and one baggage lock)* and two keys mated to ignition switch and locks. (Diode not required) P/N 11-03171.....

MODEL NO. A-510-2K, Includes ignition switch with starter position, two aircraft locks (one door and one baggage lock)* two keys mated to ignition switch and locks . (diode included)..... P/N 11-03172.....
 * Baggage lock may be modified to second door lock if preferred.

ACS IGNITION SWITCH PLATES

Plate without start - A-2255-A1 P/N 11-03668.....
 Plate With start - A-2255-A P/N 11-03667.....

ACS DOOR AND BAGGAGE LOCK SETS



The door and baggage locks furnished with the ignition switches above are also available separately. Set of two locks (one door and one baggage lock) furnished with one key mated to both locks. The baggage lock may be used as second door lock if preferred. P/N 11-01600

Universal Blank Key (uncut) for ACS door and Baggage Lock P/N 11-03175

ACS Double Sided Blank Key uncut with black cap P/N 05-03666

ACS LEVER TYPE IGNITION SWITCH

A-510-1 Lever Type - Twist-Knob Without Starter Position. (diode not required).....P/N 11-03176

BENDIX IGNITION SWITCHES



MODEL NO. 10-357290-1, Without Starter Position. Includes two keys. Furnished with Switch Plate

MODEL NO. 10-357200-1, With Starter Position. Includes two keys. Furnished with Switch Plate

ACS IGNITION SWITCH DEALER DISCOUNTS: 6-10 LESS 5%, 11-19 LESS 10%, 20-99 LESS 15%, 100+ LESS 20% (ASSORTED)

ACS STARTER SOLENOID DIODE ASSEMBLY



This is required for all new A-510-2 and A-510-2K ignition switches for compliance with ACS Service Bulletin SB92-01.

Diode Assembly for Starter Solenoid with one or Two Coil Contacts
 P/N 16050-2

ACS IGNITION SWITCH SERVICE KIT

Consists of replacement internal switch contacts, lubricant, diode assembly, and terminal board as required for compliance with ACS Ignition Switch Service Bulletin SB92-01. Kit A-3650-2 contains diode assembly for starter solenoids with one or two coil contacts.

Kit No. A-3650-2

MODEL NO. 10-357210-1, With push to start feature. Includes two keys. Furnished with Switch Plate.....

BENDIX SWITCH PLATES -

Without Starter Position..... Switch Plate No. 10-51127

With Starter Position..... Switch Plate No. 10-126676



SUNLINQ SOLAR PANELS

The **6.5-watt** portable solar pack module offers a unique solution for reliable and portable solar power for cell phones, PDA's, and other small personal electronics. The SUNLINQ™ 6.5-watt weighs less than half of a pound and when folded is compact, lightweight and easily stored and transported. The low maintenance design provides an optimal electrical path and rugged durability. Built-in grommets allow for hanging, mounting or laying in any position.

The **12-watt** portable solar pack module offers a unique solution for reliable and portable solar power for Sat phones, GPS, battery charging, etc. The SUNLINQ™ 12 watt weighs less than one pound and when folded is compact, lightweight and easily stored and transported. The low maintenance design provides an optimal electrical path and rugged durability. Built-in grommets allow for hanging, mounting or laying in any position.

The **25-watt** portable solar pack module offers a unique solution for reliable and portable solar power for vehicle battery charging, including boats and RVs and laptop computers. The SUNLINQ™ 25 watt weighs less than two pounds and when folded is compact, lightweight and easily stored and transported. The 25-watt SUNLINQ™ is made from a special urethane material giving it the utmost in durability and water resistance. The low maintenance design provides an optimal electrical path and rugged durability. Built-in grommets allow for hanging, mounting or laying in any position.

Cables included with SUNLINQ™ are one each, CLA receptacle, CLA vehicle power outlet, battery clamps, 4 in. barrel connector, and 8 ft. extension cable.



Accessories Kit Included

| Description | Part No. | Price |
|-------------------------|----------|-------|
| SUNLINQ 6.5 WATT Module | 11-06192 | . |
| SUNLINQ 12 WATT Module | 11-06193 | . |
| SUNLINQ 25 WATT Module | 11-06194 | . |

CIRCUIT BREAKERS

KLIXON 7270 & 7271 CIRCUIT BREAKERS



The Klixon 7270/7271 series circuit breakers were designed to utilize less behind panel space while protecting wire and cable in aircraft and ground support equipment on either 120 VAC, 400 Hz or 30 VDC systems. The units are available with neck mounting (7270-1 and 7271-8) or standard cover plate (7270-7 and 7271-3). In each of these Klixon circuit breakers, the bi-metallic element assures uniform current distribution throughout

its responsive area. This design reduces current density at the critical areas, resulting in an element having a much higher interrupting capability than conventional design. Inherently resistant to shock and vibration, the Klixon disc element is capable of precise calibration settings and will retain the initial calibration within close tolerances throughout the service life of the breaker. Both circuit breakers have conventional actuator action; i.e., the toggle actuator on the 7270 moves to the OFF position for trip indication and the button the 7271 pops out. A standard black button with a white collar is used.

FEATURES: • Trip-free • Snap-acting Thermal Element • Simplicity of Design • Lightweight • High Rupture Capacity - 3500 Amps, 120 VAC, 400 Hz 4000 Amps, 30 VDC • Small Size

| Part No. | Price | Part No. | Price | Part No. | Price |
|------------|-------|------------|-------|--------------|-------|
| 7270-1-3 | . | 7270-7-10 | . | 7271-3-25 | . |
| 7270-1-5 | . | 7270-7-15 | . | 7271-3-35 | . |
| 7270-1-7.5 | . | 7270-7-20 | . | 7271-8-3 | . |
| 7270-1-10 | . | 7270-7-25 | . | 7271-8-5 | . |
| 7270-1-15 | . | 7270-7-30 | . | 7271-8-7 1/2 | . |
| 7270-1-20 | . | 7270-7-35 | . | 7271-8-10 | . |
| 7270-1-25 | . | 7271-3-3 | . | 7271-8-15 | . |
| 7270-1-30 | . | 7271-3-5 | . | 7271-8-20 | . |
| 7270-1-35 | . | 7271-3-7.5 | . | 7271-8-25 | . |
| 7270-7-3 | . | 7271-3-10 | . | 7271-8-30 | . |
| 7270-7-5 | . | 7271-3-15 | . | 7271-8-35 | . |
| 7270-7-7.5 | . | 7271-3-20 | . | | |

The last dash no. in the Part Number is the Amperage rating

KLIXON 7277 CIRCUIT BREAKERS



7277-1 Aux. Switch Contact
7277-2

The 7277 series circuit breaker is physically and electrically identical to the 7274-2 style circuit breaker, with the exception that the 7277 series has wider calibration limits. Originally developed as an alternative to slow blow fuses, the trip free 7277 is used extensively as primary electrical circuit protection on general aviation aircraft. The wider calibration limits of the 7277 has also resulted in applications including protection for data processing and telecommunications equipment, computers, flight simulators, construction, material handling and other industrial electronic equipment.

FEATURES: The 7277 series is designed for applications that do not require the tighter performance characteristics and approvals of our military circuit breakers. • Small size • Light Weight • Inexpensive Auxiliary switch 7277-1 Only Longer Push Buttons 7277-5 Only

| Temp. | Min Ult | Max Ult | Trip Time - Seconds | | |
|-------|---------|---------|---------------------|----------|---------|
| °C | Traip | Trip | 200% | 500% | 1000% |
| +25 | 110% | 150% | 2-35 | .15-1.75 | .028-.8 |

* Performance characteristics and dimensions are equivalent to 7274 Calibration: 1/2 - 20 amps*

| Part No. | Price | Part No. | Price | Part No. | Price |
|------------|-------|------------|-------|------------|-------|
| 7277-5-1 | . | 7277-1-3 | . | 7277-2-2 | . |
| 7277-5-2 | . | 7277-1-4 | . | 7277-2-2.5 | . |
| 7277-5-3 | . | 7277-1-7.5 | . | 7277-2-3 | . |
| 4200-005-4 | . | 7277-1-10 | . | 7277-2-4 | . |
| 7277-5-7.5 | . | 7277-1-15 | . | 7277-2-5 | . |
| 7277-5-10 | . | 7277-2-1/2 | . | 7277-2-7.5 | . |
| 7277-5-15 | . | 7277-2-3/4 | . | 7277-2-10 | . |
| 7277-1-1 | . | 7277-2-1 | . | 7277-2-15 | . |
| 7277-1-2 | . | 7277-2-1.5 | . | 7277-2-20 | . |

ELECTRICAL PLUG CONNECTORS



Make your panel a "plug and play" panel with these heavy-duty electrical connectors. The connectors are designed for either panel mount or free hanging. Connectors are available in 4, 6, 12, 18, 24, and 36 pin configurations. Choose the pins and sockets based on wire size. The pins and sockets are top quality and are gold/nickel plated. The plugs are sold in pairs and include both the plug and the connector.

| Connectors | Part No. | Configuration | Price |
|------------|----------|-----------------|-------|
| SPT015/16 | 11-02147 | 4 pin | . |
| SPT152/153 | 11-02148 | 6 pin | . |
| SPT039/40 | 11-07356 | 9 pin | . |
| SPT017/18 | 11-02149 | 12 pin | . |
| SPT442/43 | 11-02150 | 18 pin | . |
| SPT019/20 | 11-07357 | 36 pin | . |
| Pins | Part No. | Wire Gauge Size | Price |
| SPT103-1 | 11-02153 | 24/20 | . |
| SPT099-1 | 11-02154 | 18/16 | . |
| Sockets | Part No. | Wire Gauge Size | Price |
| SPT105-1 | 11-02155 | 24/20 | . |
| SPT101-4 | 11-02156 | 18/16 | . |

POWERGENIE



Powergenie is a power control unit for Rotax engines (503 through 912) and other two-stroke engines. With Powergenie installed, your hour meter will run only when the engine itself is running, eliminating the need to rely on the master or engine switch. You can power up the airplane's electrical system on the ground for radio work or general maintenance and testing without clocking aircraft time. In addition, you can use Powergenie to power other equipment like beacons, strobes and landing lights for automatic operation when the engine is running.

P/N 11-03388

STATIC DISCHARGERS

STATIC WICK



Used on Cessna and Piper aircraft. Comes with 2 holes to rivet to train-line edge and plain wire extension. P/N 11-04154.....

NULL FIELD TRAILING DISCHARGER



For general aviation & business class aircraft. FAA/PMA, MIL-9129D. Mounting: (2) #8-32 flat head screws. Length: 10-9/32". Wt: .78 oz. P/N 11-16320.....

MICROPOINT TRAILING DISCHARGER



For general aviation aircraft (speeds below 300 mph). Mounting: (2) #4-40 screws, 100% countersunk. Length: 8.75" Weight: 0.17 oz. P/N 11-16630.....

MICROPOINT TRAILING DISCHARGER (FLEXIBLE)



For general aviation & business class aircraft. FAA/PMA, MIL-9129D. Mounting: 15401, 15488, 15660-1, or 16195 screw retainer. Length: 7-5/8" Wt: 0.53 oz. P/N 11-16606.....

NULL FIELD TIP DISCHARGER



For general aviation & business class aircraft. FAA/PMA, MIL-9129D. Mounting: (2) #8-32 flat head screws. Length: 7-15/32". Wt: 0.53 oz.

P/N 11-16325.....

CIRCUIT BREAKERS

TYCO CIRCUIT BREAKERS

These bi-metallic single pole breakers weigh less than 2oz. and especially suitable for homebuilt aircraft. Used as original equipment in Beech, Cessna and Piper aircraft. Max. operating voltages: 32 VDC & 250 VAC (to 400 Hz).

W23 SERIES



W31 SERIES



W58 SERIES



White band around body of reset button becomes visible if breaker trips. Has heater wire for fast tripping. 8-32 screw terminals.

These are combination single pole switches and circuit breakers. Has a plain steel toggle w/ rating inscribed on tip. 8-32 screw terminals.

Recessed reset button has red band around it for visible trip indication. 6-32 screw terminals.

| P&B P/N | AMP Rating | Aircraft Application | | | Prices Ea. |
|--------------|------------|----------------------|----------------|-------------|------------|
| | | Beech | Cessna | Piper | |
| W23X1A1G1 | 1 | | | 111-201-105 | . |
| W23X1A1G2 | 2 | | | 111-202-105 | . |
| W23X1A1G3 | 3 | | | 111-203-105 | . |
| W23X1A1G4 | 4 | | | 111-204-105 | . |
| W23X1A1G5 | 5 | CB-2305A | S-1232-5 | 454656 | . |
| W23X1A1G7.5 | 7.5 | CB-2307A | | | . |
| W23X1A1G10 | 10 | CB-2310A | | 454657 | . |
| W23X1A1G15 | 15 | CB-2315A | | 454658 | . |
| W23X1A1G20 | 20 | CB-2320A | | 454659 | . |
| W23X1A1G25 | 25 | CB-2325A | | 454660 | . |
| W23X1A1G30 | 30 | CB-2330A | | 454661 | . |
| W23X1A1G35 | 35 | CB-2335A | | 454663 | . |
| W23X1A1G40 | 40 | CB-2340A | | 454665 | . |
| W23X1A1G50 | 50 | CB-2350A | | 454662 | . |
| W31X2M1G5 | 5 | | | | . |
| W31X2M1G10 | 10 | | | | . |
| W31X2M1G15 | 15 | | | | . |
| W31X2M1G20 | 20 | | | | . |
| W31X2M1G25 | 25 | | | | . |
| W31X2M1G30 | 30 | | | | . |
| W31X2M1G35 | 35 | | | | . |
| W31X2M1G40 | 40 | | | | . |
| W31X2M1G50 | 50 | | | | . |
| W58XC4C12A1 | 1 | 431-201-101 | S-1360-1A_-1L | | . |
| W58XC4C12A2 | 2 | 431-202-101 | S-1360-2A_-2L | | . |
| W58XC4C12A3 | 3 | 431-203-101 | S-1360-3A_-3L | | . |
| W58XC4C12A4 | 4 | 431-204-101 | S-1360-4A_-4L | | . |
| W58XC4C12A5 | 5 | 435-205-101 | S-1360-5_-5L | 454668 | . |
| W58XC4C12A7 | 7 | 435-207-101 | S-1360-7_-7L | | . |
| W58XC4C12A10 | 10 | 435-210-101 | S-1360-10_-10L | 454669 | . |
| W58XC4C12A15 | 15 | 435-215-101 | S-1360-15_-15L | 454670 | . |
| W58XC4C12A20 | 20 | 435-220-101 | S-1360-20_-20L | | . |
| W58XC4C12A30 | 30 | 435-230-101 | S-1360-30_-30L | | . |

TYCO ROCKER TYPE CIRCUIT BREAKER



W33S2N1Q series breakers are 2 pole rocker actuated. Pole 1 is switch only, pole 2 is series trip overload sensing. These breakers are non-lighted with white rocker. W33S4B1Q series breakers are also 2-pole rocker actuated. Pole 1 is switch only, pole 2 is series trip overload sensing. These breakers feature 20 amp max. switch & amber plastic rockers.

| Item / Description | Amps | Part No. | Price |
|----------------------------|------|----------|-------|
| W33S4B1Q-5 - Amber 24VDC | 5 | 11-01887 | . |
| W33S4B1Q-10 - Amber 120VAC | 10 | 11-01888 | . |
| W33S4B1Q-15 - Amber 120VAC | 15 | 11-01889 | . |
| W33S4B1Q-20 - Amber 120VAC | 20 | 11-01976 | . |
| W33S1N1Q-5 - Black | 5 | 11-01977 | . |
| W33S1N1Q-10 - Black | 10 | 11-01978 | . |
| W33S1N1Q-15 - Black | 15 | 11-01979 | . |
| W33S1N1Q-20 - Black | 20 | 11-01980 | . |
| W33S2N1Q-5 - White | 5 | 11-01981 | . |
| W33S2N1Q-10 - White | 10 | 11-01890 | . |
| W33S2N1Q-20 - White | 20 | 11-01983 | . |

FUSE HOLDERS



These fuseholders are non-indicating, plate mounted. The body is molded black phenolic. Knob grips fuse and pulls it from holder when knob is removed. Spring provides contact pressure on ends of fuse. For use with fuse size 1/4" x 1-1/4". Type HKP. P/N 11-13400



Nylon Twist-Lock in-line fuseholder. Supplied with 8" loop of 14-gauge wire and 1 spring to accommodate AGC fuses. Simple "twist-lock" allows easy fuse removal & replacement. P/N 11-04010



Bayonet knob in-line fuseholder. Supplied with 8" loop of 14-gauge wire and 1 spring to accommodate AGC fuses. Simple "twist-lock" allows easy fuse removal and replacement. P/N 11-01359

KLIXON CIRCUIT BREAKERS



Feature a bi-metallic snap-acting disc as the sensing element. Widely used in production and military aircraft. The most popular models are illustrated. Models PSM and PSM-N are available in the following ampere ratings: 2, 3, 5, 10, 15, 20, 25, 35. When ordering specify if neck-mounting style is wanted by placing "N" after ampere rating. Example: PSM-10N (P/N 11-04244)..... Ea.

For weatherproof circuit breakers in ratings from 50 to 150 amperes, order Model PDLM. Example: PDLM-50 (P/N 11-04241) ea.



60 AMP CIRCUIT BREAKERS FOR ALTERNATORS

These heavy duty circuit breakers are ideal for use with aircraft alternators and other applications using high amperage. 10-32 screw terminals. Size: 1-3/8"d x 1-3/8"h x 1/2"w. 60 Amp P/N 11-02191.....

ELECTRONIC CIRCUIT BREAKERS



These circuit breakers have no mechanical parts, except for the reset switch. The power switching and control components are completely solid state. They have added benefit of overvoltage and undervoltage protection. Will turn off if the input

voltage goes too high, protecting valuable avionics or other equipment. The circuit breakers operate differently than conventional ones in the following ways: If the circuit breaker 'trips', the switch will remain in the up or on position, but a red LED will illuminate indicating the condition. To reset the circuit breaker, the switch is set to off, then back to on. Removing power from the circuit breaker via a master switch and then restoring power will perform the same function. If a short or overcurrent condition exists at the output, the circuit breaker will continue to trip off after a reset.

The electronic circuit breaker is a 3-terminal device. In addition to the usual 2 terminals, a ground reference is required for the electronics to operate and as a reference for the overvoltage & undervoltage protection.

The 14V circuit breakers will shutdown with an overvoltage of 16V & undervoltage of 10V. The 28V will shutdown with an overvoltage of 33V & undervoltage of 20V.

Available in 14V & 28V versions, with the following current levels: 1A, 2A, 5A, 10A. Not FAA Approved. For experimental aircraft only.

| Model No. | Amps | Volts | Part No. | Price |
|-----------|------|-------|----------|-------|
| ECB-14-01 | 1 | 14 | 11-01152 | . |
| ECB-14-05 | 5 | 14 | 11-01154 | . |
| ECB-28-01 | 1 | 28 | 11-01156 | . |
| ECB-28-02 | 2 | 28 | 11-01157 | . |
| ECB-28-05 | 5 | 28 | 11-01158 | . |
| ECB-28-10 | 10 | 28 | 11-01159 | . |



FUSES

AGC-type fuses are glass-enclosed with a single fuse element. Fast acting to protect sensitive instruments and radios. Fuse dimensions 1/4" dia. x 1-1/4" long.

| Part No. | Amp Rating | Price Each | Part No. | Ampere Rating | Price Each |
|----------|------------|------------|----------|---------------|------------|
| 11-03743 | 1 | . | 11-03745 | 15 | . |
| 11-03746 | 2 | . | 11-03747 | 20 | . |
| 11-03749 | 3 | . | 11-03748 | 25 | . |
| 11-03753 | 5 | . | 11-03750 | 30 | . |
| 11-03754 | 7 | . | 11-03751 | 35 | . |
| 11-03744 | 10 | . | | | |

EL

SWITCHES

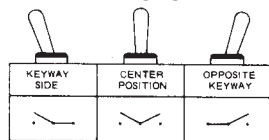
ULTRA-MINIATURE TOGGLE SWITCHES



Ultra-miniature switches are rated at 6 amps at 125V AC and 4 amps at 28V DC. Solid silver contacts. Terminals are gold flashed to inhibit oxidation and to provide easier soldering. Case material is green diallyl phthalate resin. Bushing thread size: 1/4-40, usable in panel thickness up to 1/4". Micro Switch Co. have discontinued the manufacture of the 8A and 8H type switches, so switches by alternate manufacturers will be furnished. In most instances, Alco switches will be supplied. Switches furnished complete with locking ring and attaching hardware.

| Alco Sw. Part No. | Micro Sw. Part No. | Contact | Toggle Circuit* | Price Each |
|-------------------|--------------------|---------|-----------------|------------|
| MTA-106D | 8A1011 | SPST | 01 | . |
| MTA-106E | 8A1021 | SPDT | 02 | . |
| MTA-106G | 8A1041 | SPDT | 04 | . |
| MTA-206N | 8A2011 | DPST | 01 | . |
| MTA-206P | 8A2021 | DPDT | 02 | . |
| MTA-206S | 8A2041 | DPDT | 04 | . |
| JMT-226 | 8A2061 | DPST | 06 | . |
| MTA-306D | 8A3011 | 3PDT | 01 | . |
| MTA-406N | 8A4011 | 4PDT | 01 | . |

* See Toggle Circuit Table
LEVER/CIRCUIT RELATIONSHIP



| Toggle Circuit | Circuitry* | | |
|----------------|------------|--------|------------|
| | One Side | Center | Other Side |
| 01 | On | None | On |
| 02 | On | Off | On |
| 04 | (On) | Off | (On) |
| 05 | On | Off | (On) |
| 06 | On | None | (On) |

*Use the "01" circuitry for On-Off switch. In hook-up, use center terminal & one side terminal. Leave other side terminal blank.

The operating sequence above is repeated in multipole devices. Each pole has double-throw circuitry and consists of three terminals which exit at the bottom of the switch case. The keyway is a helpful reference when you are applying a switch with the momentary (ON) circuit at one of the extreme lever positions.

TWIN CESSNA SWITCH COVERS



Are your switch covers faded by the sun or just looking grimy? These replacement switch covers fit on nearly every typical switch in Cessna Twins. Switch cover sets are available for 300 series twins (4 red, 3 black, and 18 white switches) and 400 series twins (4 red, 3 black, & 23 white switches). Also available are sets of 30 mini-switch covers for audio panels, prop sync, fuel transfer pumps, DME, etc.

- 300 Series P/N 11-22210
- 400 Series P/N 11-22220
- Mini Switch Package P/N 11-22230

TOGGLE SWITCH COVERS



Dress up the appearance of your panel and color code your toggle switches with high quality vinyl covers that do not have a nipple at the end of the cover. Available in various colors.

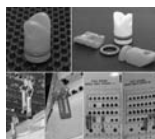
- Standard Size**
- Red 11-00815
 - White 11-00816
 - Yellow 11-01698
 - Green 11-00817
 - Blue 11-00819
 - Black 11-02823
- Mini Size**
- Red 11-00820
 - White 11-00821

SUBMINIATURE PUSHBUTTON SWITCH



One-piece bushing and case construction, furnished with beveled nut for finished appearance. It has a relatively high current carrying capacity (3 amps at 125V AC) and a life expectancy of 10,000 operations at rated current. Momentary type SPDT switch, ideal for use as a mic switch on control wheel. Furnished with .205" dia. black pushbutton. Body is .354" dia. x .650" long. Mounts in 1/4" dia. hole. P/N MPA-103F

CIRCUIT BREAKER SAFETY LOCKS



Skylox™ is a unique product that will provide safety to your aircraft ground service crews. The circuit breaker safety lock is easy to use and is an innovative safety solution, all at a very low price. Simple to use. Just squeeze and place over an open circuit breaker to prevent accidental closing of breaker circuits being serviced.

Regular round Skylox™ for standard size breakers and Skylox™ L for larger sizes. Hexagonal shape easily differentiates between the two sizes. Add Skytags™ for added safety. Red with white letters and all white backs for adding notes or special instructions. NOTICE! Skylox™ are designed for use by ground maintenance crews during ground maintenance procedures only! Skylox™ are NOT to be used during flight operations. Danger..... P/N 11-07737..... Warning.... P/N 11-07738

- Large P/N 11-07734..... Standard .. P/N 11-07736



MS25224 SWITCHGUARDS

Prevents inadvertent operation of the switch. Switch can be operated only when the spring-loaded guard is lifted up. Returning guard to the down position forces the switch lever to the off position. Single-hole type for neck-mount switches such as AN3021 and AN3027. 3-hole type for panel-mounted switches such as AN3023. Color: Red.

- MS25224-1 (one hole) Ea.
- MS25224-2 (3 holes)..... Ea.



EATON SWITCH GUARDS

Spring Loaded Switch Guards - Eaton switch guards can be used with 2 or 3 position switches. Cover closure transfers toggle lever and is molded out of quality thermoset molding materials. Guard covers are spring loaded to either close or lock in an open position.

| Description | Pos. | Color | Code | Part No. | Price |
|-------------|------|-------|------|----------|-------|
| Phenolic | 2 | Red | 2 | 11-06221 | . |
| Metal | 2 | Green | 4 | 11-06222 | . |
| Phenolic | 3 | Red | 9 | 11-06223 | . |
| Phenolic | 2 | Red | 10 | 11-06224 | . |
| Phenolic | 2 | Red | 11 | 11-06225 | . |

CESSNA SPLIT MASTER SWITCH



This versatile split red master switch has been used in virtually all single engine Cessna models since 1970 and can be used in most light aircraft with single alternator systems. Left rocker normally used for alternator and right half for battery. Order mount separately.

- Red Switch..... P/N 11-15900
- Beige Switch..... P/N 11-05733
- Mount..... P/N 11-15910



BEACON/STROBE SPLIT SWITCH

This is a split switch used in many production aircraft featuring an On-Off switch on left for rotating beacon and On-Off switch on right for anti-collision strobe. Switch is grey. New manufacture. P/N 11-14910

AN3021-1



TOGGLE SWITCHES

Toggle switches are available with 2 or 3 operating positions, one or three hole mounting and a variety of circuitry and electrical ratings. Contacts are made of solid silver. Wide usage is found in aircraft, mobile, marine, electronic and industrial applications. Available in full "AN" standard size and Ultra Miniature 1/2" size. The leading manufacturers of toggle switches are Micro Switch, Alcoswitch, Cutler Hammer, and JBT (now Cutler Hammer). Orders will be filled with switches of manufacturer whose product is available in local stock.

AN3027-7

| AN No. | MS No. | Mfrs. P/N | Size | Contact | Toggle Circuit* | Price |
|----------|------------|--------------|---------------|---------|-----------------|-------|
| AN3021-1 | MS35058-21 | JBT - MS No. | 1/2 Miniature | SPDT | 1* | . |
| AN3021-2 | MS35058-22 | JBT - MS No. | 1/2 Miniature | SPST | 2* | . |
| AN3021-3 | MS35058-23 | JBT - MS No. | 1/2 Miniature | SPDT | 3* | . |
| AN3027-1 | MS35059-21 | JBT - MS No. | Full Standard | DPDT | 1* | . |
| AN3027-2 | MS35059-22 | JBT - MS No. | Full Standard | DPST | 2* | . |
| AN3027-3 | MS35059-23 | JBT - MS No. | Full Standard | DPDT | 3* | . |
| AN3027-7 | MS35059-27 | JSBT-MS No. | Full Standard | DPDT | 5* | . |

* See Toggle Circuit Table

| TOGGLE CIRCUIT CODE (*) | Circuitry with Toggle at: | | |
|-------------------------|---------------------------|--------|------|
| | UP | CENTER | DOWN |
| 1 | On | Off | On |
| 2 | On | None | Off |
| 3 | On | None | On |
| 4 | On | Off | On** |
| 5 | On* | Off | On** |

TOGGLE CIRCUIT TABLE

*Available toggle lever positions & circuits

**Momentary contact - when the toggle lever is placed in a momentary position and then released, the toggle lever automatically returns to a neutral position.



PUSH BUTTON SWITCH

A quality momentary SPST switch, perfect as a starter button. Comes with a special boot that keeps out dust and weather.

- P/N SPB01.....



MINIATURE MOMENTARY PUSHBUTTON SWITCH

Normally open. Found in many Piper aircraft. Color: Black.

- #8631ZBD2 P/N 11-01899

OTTO SWITCHES & PISTOL GRIPS



T7 COMMERCIAL TOGGLE SWITCHES

T7 commercial toggle switch, waterproof bushing seal switches up to 16 amps 15/32-32 thread mount. Includes mounting hardware.

SPECIFICATIONS

| Electrical: (at 28VDC or 115VAC, 60/400 Hz.) | | |
|--|---------|----------------|
| Load | Amperes | Life (Nominal) |
| Resistive | 16 | 25,000 |
| Inductive | 10 | 25,000 |
| Motor | 1/2 HP | 25,000 |

| No. of Poles | OTTO No. | Circuit | Our P/N | Price ea. |
|--------------|----------|-------------|----------|-----------|
| 1 | T7-131A1 | on-off | 11-00755 | . |
| 1 | T7-131B1 | on-on | 11-00756 | . |
| 1 | T7-131C1 | mom-off | 11-00757 | . |
| 1 | T7-131D1 | mom-on | 11-00758 | . |
| 1 | T7-131E1 | mom-of-mom | 11-00759 | . |
| 1 | T7-131F1 | on-off-on | 11-00760 | . |
| 1 | T7-131G1 | mom-off-on | 11-00761 | . |
| 2 | T7-231A1 | on-off | 11-00762 | . |
| 2 | T7-231B1 | on-on | 11-00763 | . |
| 2 | T7-231C1 | mom-off | 11-00764 | . |
| 2 | T7-231D1 | mom-off | 11-00765 | . |
| 2 | T7-231E1 | mom-off-mom | 11-00766 | . |
| 2 | T7-231F1 | on-off-on | 11-00767 | . |
| 2 | T7-231G1 | mom-off-on | 11-00768 | . |

Note: MOM designates Momentary On.



T3 MINIATURE TOGGLE SWITCHES

Military MS27718 qualified. High reliability, rugged. Solder turret for wire attachment. 303 stainless toggle, 15/32" bushing version has a waterproof seal. Specifications Electrical: (at 28VDC or 115VAC, 60/400 Hz.)

| Load | Amps | Life (full load) | Load | Amps | Life (full load) |
|-----------------|------|------------------|-----------------|------|------------------|
| Resistive | 5 | 30,000 | Lamp | 1 | 30,000 |
| Inductive/Motor | 2 | 30,000 | Mechanical Life | n/a | 100,000 |

| No. of Poles | MIL No. | OTTO No. | Circuit | Our P/N | Price ea. |
|--------------|--------------|----------|-------------|----------|-----------|
| 1 | MS27718-21-1 | T3-11111 | on-off-on | 11-00772 | . |
| 1 | MS27718-22-1 | T3-11121 | off-on | 11-00773 | . |
| 1 | MS27718-23-1 | T3-11131 | on-on | 11-00774 | . |
| 1 | MS27718-26-1 | T3-11141 | mom-on | 11-00775 | . |
| 1 | MS27718-27-1 | T3-11151 | mom-off-mom | 11-00776 | . |
| 1 | MS27718-31-1 | T3-11161 | mom-off-on | 11-00777 | . |
| 2 | MS27719-21-1 | T3-11211 | on-off-on | 11-00778 | . |
| 2 | MS27719-22-1 | T3-11221 | off-on | 11-00779 | . |
| 2 | MS27719-23-1 | T3-11231 | on-on | 11-00780 | . |
| 2 | MS27719-26-1 | T3-11241 | mom-on | 11-00781 | . |
| 2 | MS27719-27-1 | T3-11251 | mom-off-mom | 11-00782 | . |
| 2 | MS27719-31-1 | T3-11261 | mom-off-on | 11-00783 | . |

Note: MOM designates Momentary On.

P5 ON-OFF ALTERNATE ACTION SWITCH



Push and the P5 series switch holds "on" push again and the P5 switch turns "off". Positive tactile feedback is featured so the operator is clearly aware the switch mode has been executed. The button returns to the original position after each actuation.

To guard against front panel splash and dirt, the P5 series is sealed at the button with OTTO's patented rolling sleeve principle. The terminals are sealed with epoxy, providing a seal against flux during wiring and behind panel dirt and moisture. The combination of sealing provides smooth operation over a wide temperature range. Watertight sealing to 1meter (IP68) pressure is also available.

| Load | Amps | Life (full load) | Load | Amps | Life (full load) |
|-----------|------|------------------|-------|------|------------------|
| Resistive | 10 | 25,000 | Motor | 3 | 25,000 |
| Inductive | 5 | 25,000 | Lamp | 1 | 25,000 |

| Switch | Part No. | Price | Switch | Part No. | Price |
|-----------------|----------|-------|--------------------|----------|-------|
| Press Fit-red | 11-00796 | . | Thread Mount Red | 11-00769 | . |
| Press Fit-black | 11-00797 | . | Thread Mount Black | 11-00770 | . |
| Press Fit-white | 11-00798 | . | Thread Mount White | 11-00771 | . |

OTTO PISTOL GRIPS



Cobra

Otto Controls has been making the switches used in a majority of military and commercial flight grips manufactured for the last 40 years. Otto has evolved from a switch supplier into a major gri supplier with flight grips in numerous military and commercial aircraft. These rugged grips are the same as our military qualified grips but without the expensive threaded connector. Grips have a 1.15"ID which can be adapted to a 3/4" or 7/8" joystick with separate sleeves sold below.

| Grip Kit | Otto Part No. | 2-position Trigger | 4-Way Trim Switch | Push-Button Switch | Our Part No. | Price Each |
|----------|---------------|--------------------|-------------------|--------------------|--------------|------------|
| B8 | G2-0048 | 1 | 1 | 3 | 11-00751 | . |
| Cobra | G2-0049 | 1 | 1 | 4 | 11-00752 | . |

Grip/Joystick Sleeve

| Joystick O.D. | Part No. | Our Part No. | Price |
|---------------|----------|--------------|-------|
| 3/4" shaft | 302379 | 11-00753 | . |
| 7/8" shaft | 302380 | 11-00754 | . |

P1 MOMENTARY SWITCHES

MIL qualified. Dustproof, snap action, solder terminals, rugged reliable construction.

SPECIFICATIONS

| Electrical: (at 28VDC or 115VAC, 60/400 Hz.) | | |
|--|---------|----------------|
| Load | Amperes | Life (Nominal) |
| Resistive | 10 | 25,000 cycles |
| Inductive/Motor | 5 | 25,000 cycles |
| Lamp | 3 | 25,000 cycles |



PRESS FIT

| MIL No. | Otto No. | Button Color | Our Part No. | Price |
|-------------|----------|--------------|--------------|-------|
| MS25089-1AL | P1-12121 | Red | 11-00745 | . |
| MS25089-1A | P1-12122 | Black | 11-00746 | . |
| MS25089-1AW | P1-12129 | White | 11-00747 | . |

THREADED BEZEL

| MIL No. | Otto No. | Button Color | Our Part No. | Price |
|-------------|----------|--------------|--------------|-------|
| MS25089-1CR | P1-32121 | Red | 11-00748 | . |
| MS25089-1C | P1-32122 | Black | 11-00749 | . |
| MS25089-1CW | P1-32129 | White | 11-00750 | . |

EL



T3 1/4-40 UNSEALED BUSHING TOGGLE SWITCHES

| No. of Poles | MIL No. | OTTO No. | Circuit | Our Part Number | Price each |
|--------------|--------------|----------|-------------|-----------------|------------|
| 1 | MS27716-21-1 | T3-21111 | on-off-on | 11-00784 | . |
| 1 | MS27716-22-1 | T3-21121 | off-on | 11-00785 | . |
| 1 | MS27716-23-1 | T3-21131 | on-on | 11-00786 | . |
| 1 | MS27716-26-1 | T3-21141 | mom-on | 11-00787 | . |
| 1 | MS27716-27-1 | T3-21151 | mom-off-mom | 11-00788 | . |
| 1 | MS27716-31-1 | T3-21161 | mom-off-on | 11-00789 | . |
| 2 | MS27717-21-1 | T3-21211 | on-off-on | 11-00790 | . |
| 2 | MS27717-22-1 | T3-21221 | off-on | 11-00791 | . |
| 2 | MS27717-23-1 | T3-21231 | on-on | 11-00792 | . |
| 2 | MS27717-26-1 | T3-21241 | mom-on | 11-00793 | . |
| 2 | MS27717-27-1 | T3-21251 | mom-off-mom | 11-00794 | . |
| 2 | MS27717-31-1 | T3-21261 | mom-off-on | 11-00795 | . |

Note: MOM designates Momentary On.

SWITCHES – LIGHTS – BUSS BARS

• SILVER SWITCH CONTACTS (MOST)

SWITCHES & INDICATOR LIGHTS

• .25" TAB TERMINAL (UNLESS SHOWN)

Commercial 12 VDC Illuminated & Non-Illuminated Toggle, Rocker, Push-Button, Pull Switches...
Incandescent & L.E.D. Indicator Lights...Switch Guards...Lever Covers



LEVER SWITCHES 20 AMP SILVER CONTACTS

| Non-Illuminated | Single Pole | Price | Double Pole | Price | |
|-----------------|-------------|--------|-------------|-------|-------|
| ON-OFF | 11-103 | . | 11-200 | . | |
| OFF-(ON) | --- | --- | 11-211 | . | |
| ON-ON | 11-107 | . | --- | --- | |
| ON-OFF-ON | 11-123 | . | --- | --- | |
| () = MOMENTARY | | | | | |
| Illuminated | Red | Green | Amber | Blue | Clear |
| 11/16" Lever | 11-115 | 11-116 | 11-117 | --- | --- |
| . Ea. | | | | | |

DASH LIGHTS



Replaceable Lamp

| Red | Green | Amber | Blue | MTG. HOLE | Price |
|--|---------|---------|--------|-----------|-------|
| 17-410 | 17-411 | 17-412 | 17-413 | 1/2" | . |
| Replacement bulb..... P/N BA7-12..... | | | | | |
| Jumbo | | | | | |
| 17-420 | 17-421 | 17-422 | 17-423 | 3/4" nut | . |
| 17-440 | 17-441 | 17-442 | 17-443 | 1" nut | . |
| Non-Replaceable Lamp - *4" Wire Leads | | | | | |
| *17-457 | *17-458 | *17-459 | -- | 1/2" | * |
| 17-210 | 17-211 | 17-212 | -- | 9/32" | . |



LEGEND LIGHTS

Illuminated words.
Dimensions: 7/8" x 11/16" x 1-3/8"
Mounting Hole: .608 Diameter (18 mm)

| Color | Part No. | Price | Color | Part No. | Price |
|-------|----------|-------|--------|----------|-------|
| Red | 11-06000 | . | Orange | 11-06050 | . |
| Green | 11-06060 | . | Yellow | 11-06055 | . |
| Blue | 11-06065 | . | Clear | 11-06070 | . |

REPLACEMENT BULBS

12 Volt P/N 31-963.1
24 Volt P/N 31-963.2

NOTE: Order labeling (words) separately from list below.

LEGEND LIGHT LABELS

| Description | Part No. | Price | Description | Part No. | Price |
|-----------------|----------|-------|-----------------|----------|-------|
| Alarm | 17-538 | . | Hi Oil Pressure | 17-625 | . |
| Auto-Pilot | 17-710 | . | Hi Oil Temp | 17-518 | . |
| AUX Lights | 17-501 | . | Interior Lights | 17-679 | . |
| AUX Rank | 17-606 | . | Lock | 17-711 | . |
| Battery | 17-536 | . | Loran | 17-716 | . |
| Carb Heat | 17-712 | . | Low Fuel | 17-512 | . |
| Caution | 17-714 | . | Mags | 17-715 | . |
| Danger | 17-540 | . | Main Tank | 17-507 | . |
| De-ice | 17-713 | . | Oil Filter | 17-609 | . |
| Flaps Up | 17-730 | . | Pitot Heat | 17-709 | . |
| Flashing Lights | 17-560 | . | Radio | 17-717 | . |
| Fuel Pumps | 17-587 | . | Strobe Lights | 17-631 | . |
| Gear Down | 17-718 | . | Wing Lights | 17-614 | . |

MS25041 PRESS-TO-TEST INDICATOR



Miniature press-to-test indicator with built-in bulb testing device. Adjustable dimmer. Uses #330 (12V) or #327 (24V) bulb. Bulbs NOT included, order separately.

| | | | |
|-------------|----------------|------------|----------------|
| Clear | 11-04226 | Red..... | 11-03910 |
| Green..... | 11-03911 | Amber..... | 11-03912 |
| Blue | 11-04227 | | |

ROCKER SWITCHES SILVER CONTACTS

| Non-Illuminated | Single Pole | Price | Double Pole | Price |
|---|--------------|--------------|-------------|--------------|
| ON-OFF* | 14-100 | . | 14-200 | . |
| OFF-(ON)† | 14-101 | . | | |
| ON-ON‡ | 14-102 | . | 14-210 | . |
| ON-OFF-ON‡ | 14-103 | . | 14-220 | . |
| (ON)-OFF-(ON)‡ | 14-104 | . | 14-225 | . |
| ILLUMINATED SINGLE POLE (20 AMP, ON-OFF) | | | | |
| RED | GREEN | AMBER | BLUE | PRICE |
| 14-305 | 14-306 | 14-307 | 14-308 | . |



PUSH BUTTON



OFF-(ON), 5 AMP
Mounting Hole: 1/2"
Aluminum Guard..... P/N 15-112



OFF-(ON) / PUSH ON-PUSH OFF, 20 AMP
Mounting Hole: 1"
Red Button..... P/N 15-132



OFF-(ON), 40 AMP, SEALED
Mounting Hole: 5/8"
Screw Terminal..... P/N 15-100

PULL SWITCHES



PULL ON/PUSH OFF, 75 AMP
Chromed..... P/N 16-140..... ea.

METAL LEVER SWITCHES

• .25" TAB TERMINAL • 20 AMP at 12/24VDC • 15 AMP at 125VAC

| Operation | Single Pole | Price | Double Pole | Price |
|--|-------------|-------|-------------|-------|
| ON-OFF | *12-100 | . | 12-200 | . |
| OFF-(ON) | *12-101 | . | 12-201 | . |
| ON-ON | *12-102 | . | 12-202 | . |
| ON-OFF-ON | 12-103 | . | 12-203 | --- |
| (ON)-OFF-(ON) | 12-104 | . | 12-204 | . |
| () = MOMENTARY (*FOR 15-530 SWITCH GUARD ABOVE) | | | | |

SWITCH LEVER COVERS



Fits most metal switches with 15/32" bushing
Black Neoprene - Hex Nut
P/N 19-516

BUSS BARS

These MS25226 series buss bars are used as replacement bars for MS27212 board assemblies.



| Part No. | Hole Size | # of Holes | Length | Our Part No. | Price |
|---------------|-----------|------------|---------|--------------|-------|
| MS25226-10-4 | 3/16 | 4 | 2 5/8" | 11-04676 | . |
| MS25226-10-8 | 3/16 | 8 | 5 5/8" | 03-00133 | . |
| MS25226-10-16 | 3/16 | 16 | 11 5/8" | 03-00131 | . |
| MS25226-4-8 | 1/4 | 8 | 5 3/4" | 03-00134 | . |
| MS25226-8-4 | 1/2 | 4 | 5 1/8" | 03-00135 | . |

WIRE — SWITCHES — SPLICES



SHIELDED TEFZEL WIRE
This hook-up wire is standard in the aviation industry for installation of electronics equipment. Sold in 1' increments and spooled as a continuous length.

16G 2 CON..... P/N 11-04473.....
18G 2 CON..... P/N 11-04474.....
18G 3 CON..... P/N 11-04475.....
24G 1 CON..... P/N 11-04476.....
24G 2 CON..... P/N 11-04477.....
24G 3 CON..... P/N 11-04478.....

10 CONDUCTOR GRAY CODE TEFZEL WIRE
Excellent for carrying gray code information from the encoder to other devices that take gray code input such as transponder, Garmin 430 GPS, serializer etc. Instead of running individual 24AWG wires and running them in a bundle, use this handy all in one, color coded, 10 conductor cable, saving time and effort. Sold in 1' increments.

P/N 11-04479

BATTERY CABLE



6-gauge multi-strand copper core cable. Meets SAE Spec J1127-SGT. Price is per foot.

Black P/N 11-03942.....
Red P/N 11-03943.....
Lug (6 Gauge)..... P/N 11-05110.....



SOLDER SLEEVE

Raychem's Solder Sleeve one-step, heat-shrinkable wire and cable interconnection devices are a labor saving alternative to conventional wire and cable termination methods such as craft-sensitive, time-consuming, hand soldering or crimping. The one-step terminators create strong, soldered connections. They consist of a heat-shrinkable sleeve and a premeasured, fluxed solder band. When heated, the tubing shrinks and the solder melts, making reliable, insulated terminations.

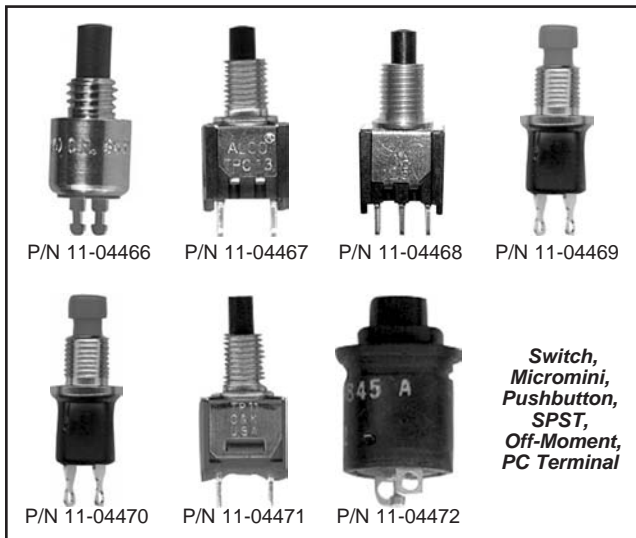
.125"SM P/N 11-04480.....
.200"MD P/N 11-04481.....
.300"LG P/N 11-04482.....

MU-METAL MAGNETIC SHIELDING



Provides shielding when placed around electronic equipment prior to installation. 4"x4 mil. Sold by the inch.
P/N 11-04483..... /inch

MOMENTARY PUSH-BUTTON SWITCHES



P/N 11-04466 P/N 11-04467 P/N 11-04468 P/N 11-04469

P/N 11-04470 P/N 11-04471 P/N 11-04472

*Switch,
Micromini,
Pushbutton,
SPST,
Off-Moment,
PC Terminal*

Normally Open, Black..... P/N 11-04466.....
SPST, Normally Open, Black..... P/N 11-04467.....
SPDT, Momentary, Black..... P/N 11-04468.....
1/4" Threads, Normally Open, Red..... P/N 11-04469.....
1/4" Threads, Normally Open, Black..... P/N 11-04470.....
SPDT, Momentary, Black..... P/N 11-04471.....
Mason Switch, .710"L, PTT Switch..... P/N 11-04472.....

HEAT SHRINK BUTT SPLICES



PN 11-04427 (TIN PLATED)



PN 11-04428 (NICKEL PLATED)

Heat-Shrinkable crimp butt splices completely insulate and protect electrical connections from water, condensation, salt and corrosion. Provides strain relief and protects against wire pull-out and vibration in the most rugged environments. Qualified to MIL-S-81824/1.

BLUE

AWG: 20-16 -- I.D. dimensions (mm/in) Crimp barrel size range 779-2680(CMA) 0.39-1.34(mm)

Sold by the Piece

| Side 1 | |
|----------------|-------------------|
| Sealing Insert | Max. no. of wires |
| 2.79(.110) | 2 |
| Side 2 | |
| Sealing Insert | Max. no. of wires |
| 2.79(.110) | 2 |

Blue (Tin-plated)..... P/N 11-04427.....
Blue (Nickel-plated)..... P/N 11-04428.....



PN 11-04425 (TIN PLATED)



PN 11-04426 (NICKEL PLATED)

RED
AWG: 26-20 -- I.D. dimensions (mm/in)Crimp barrel size range 1900-6755(CMA) 0.95-3.37(mm)

Sold by the Piece

| Side 1 | |
|----------------|------------------|
| Sealing Insert | Max no. of wires |
| 4.32(.170) | 2 |
| Side 2 | |
| Sealing Insert | Max no. of wires |
| 4.32(.170) | 2 |

Red (Tin-plated) P/N 11-04425.....
Red (Nickel-plated)..... P/N 11-04426.....



PN 11-04429 (TIN PLATED)



PN 11-04430 (NICKEL PLATED)

YELLOW
AWG: 16-12 -- I.D. dimensions (mm/in) Crimp barrel size range 1900-6755(CMA) 0.95-3.37(mm)

Sold by the Piece

| Side 1 | |
|----------------|------------------|
| Sealing Insert | Max no. of wires |
| 4.32(.170) | 2 |
| Side 2 | |
| Sealing Insert | Max no. of wires |
| 4.32(.170) | 2 |

Yellow (Tin-plated) P/N 11-04429.....
Yellow (Nickel-plated)..... P/N 11-04430.....

COLOR CODED CIRCUIT BREAKER CAPS



These color coded caps can easily be installed and removed from Klixon and similar type circuit breakers. Colored caps are used to "flag" designated circuit breakers for flight check and other purposes. In addition, they greatly improve grip. Won't shake loose and rattle like others can.

White P/N 11-04455..... Orange P/N 11-04456.....
Red P/N 11-04457..... Blue..... P/N 11-04458.....
Yellow P/N 11-04459..... Black P/N 11-04460.....
Gray..... P/N 11-04461..... Green..... P/N 11-04462.....

Discount: 10% Discount on 6 or more of the same Part number.

CIRCUIT BREAKER LOCKS



Circuit Breaker Safety Locks - With & Without Tags. Prevents the inadvertent closing of circuit breakers connected to equipment that is under repair or removed from the aircraft. Easily installed and removed from Klixon and similar type circuit breakers. Safety locks come both with and without tags. All locks are red, tags are red with white lettering. Tags measure 2"x3/4".

No Tag P/N 11-04463.....
Remove Before Flight P/N 11-04464.....
Inoperative P/N 11-04465.....

BNC/TNC CONNECTORS — AVIONICS TOOLS



BNC COAXIAL ANTENNA CONNECTORS

Male.....P/N 11-03992.....
FemaleP/N 11-03993.....

BNC CONNECTOR RIGHT ANGLE BNC MALE TO FEMALE

Male to FemaleP/N 11-04454.....



BNC CONNECTOR RG58

Male, Right angle, dual crimp.
P/N 11-04444.....

BNC FEMALE BULLDOG DUAL CRIMP

P/N 11-04445.....



TNC CONNECTOR AMP MALE, DUAL CRIMP RG58

P/N 11-04446.....

TNC CONNECTOR AMP MALE, DUAL CRIMP RG142-400

P/N 11-04447.....



TNC CONNECTOR AMP MALE, DUAL CRIMP RG8-213

P/N 11-04448.....

TNC CONNECTOR AMP RIGHT ANGLE, MALE, DUAL CRIMP RG58

P/N 11-04449.....



TNC CONNECTOR AMP RIGHT ANGLE, MALE, DUAL CRIMP RG142-400

P/N 11-04450.....



TNC CONNECTOR AMP RIGHT ANGLE, MALE, DUAL CRIMP RG214

P/N 11-04451.....



TNC CONNECTOR RIGHT ANGLE SOLDER/ SCREW RG58

P/N 11-04452.....



TNC CONNECTOR FEMALE, DUAL CRIMP RG58

P/N 11-04453.....



LITTLE BLUE CRIMPER

The Daniels AFM8 is designed for most of the miniature and sub-miniature connector types that are so widely used in all types of electronic systems. Originally developed for the Air Force, the AFM8 meets the need for a miniature tool accommodating wire sizes 20 thru 32 AWG. The cycle controlled precision ratchet assures consistently accurate crimps every time. The tool has a built-in eight step selector knob for ease in dialing the correct crimp depth setting for the wire being used.

P/N 11-04443.....



BIG BLUE CRIMPER

The Daniels AF8 has virtually limitless application within the specified wire range of 12 thru 26 AWG. Over 1,000 turret heads or positioners are available to adapt the tool frame to your specific military or proprietary contact/wire combination. The eight impression crimp, which is standard in the AF8, assures absolute maximum tensile strength with almost every closed barrel contact. The precision ratchet controls cycling on the tool in both directions of handle movement. This assures the same, accurate crimp every time. It's like having a quality control inspector at every work station.

P/N 11-04442.....

HAND INSERTION TOOL

This inexpensive, manual tool is lightweight and easy to use in the placement and/or removal of a terminal in a housing.



P/N 11-04439.....



MATE-N-LOK INSERTION PIN & SOCKET TOOL

Insertion tool for grounding blocks and locking connectors. The AMP insertion tool for MATE-N-LOK pins. Contact sizes

20-24 AWG.

P/N 11-04437.....

MATE-N-LOK EXTRACTION PIN & SOCKET TOOL

Insertion tool for grounding blocks and locking connectors. The AMP insertion tool for MATE-N-LOK pins. Contact sizes 20-24 AWG.

P/N 11-04438.....

PIN & SOCKET TOOL W/ INTERCHANGEABLE TIPS

This insertion & extraction tool consists of a handle, a cap, six insertion/extraction tips, a plug, and a .050-in. hex wrench. The handle of the tool provides storage for the tips, plug and hex wrench. The insertion/extraction tips convert the tool for the appropriate product and are used to insert or extract connector contacts. Each tip is color coded according to specific type and wire size. The hex wrench is used to tighten the set screw which secures the tip in the tool handle.

P/N 11-04436.....

PIN INSERTION & EXTRACTION TOOL



The insertion of contacts during assembly or replacement during repair is quick and easy with the appropriate tools. The tools have to fit the contacts and the connectors if assembly and repair are to be carried out correctly. Plastic Body, Metal Tip Insertion & Extraction Tool I After you've installed the pins on the wiring to a connector, this tool will help you set the pins correctly into the connector housing. This tool is also absolutely necessary to use for extracting a broken pin for replacement or moving a misplaced pin for relocation. Insert and extract all your connector pins & sockets with this premium tool. It will work with both standard and high-density pins.

6 AWG Blue/White P/N 11-04431.....
20 AWG Red/White P/N 11-04432.....
24-20AWG Red/White P/N 11-04433.....
22 AWG Green/White..... P/N 11-04434.....
22-28AWG Green/White P/N 11-04435.....

EL

ELECTRICAL TERMINALS

KOROSEAL LACING

Excellent lacing material. Permanently flexible. Resists oxidation, impervious to petroleum products. Holds tension on knots indefinitely. Perfect for holding wire bundles, tubing, etc. Rectangular cross-section 3/32"x 5/32".



P/N 11-12200...../Ft.

BREYDEN POLYESTER LACING TAPES

Flat braided tape manufactured from 100% high tenacity, continuous filament polyester fiber. This product conforms to the requirements of MIL-T-43435B; Type II, Size 3, Finish C. The tape is uniformly impregnated with a synthetic elastomer coating to improve knot holding and tying characteristics. Ideal for spot tying. 500 yd. rolls. Width: .085" (±10%); Thickness: .014" (±.003"); Tensile Strength: 50 Lb. (min.); Elongation: 40% (max.)

Natural.....P/N 11-02012.....
Black.....P/N 11-02013.....

BREYDEN NYLON LACING TAPES

Flat braided tape manufactured from 100% high tenacity, continuous filament nylon yarn. This tape is impregnated with a specially formulated microcrystalline, fungicidal wax. Conforms to the requirements of A-A-52080-B-3. Recommended for continuous lacing. 500 yd. rolls. Width: .077" (min.) / .094" (max.); Thickness: .011" (min.) / .017" (max.); Tensile Strength: 50 Lb. (min.); Wax Content: 15-32%; Elongation: 40% (max.)

Natural.....P/N 11-12170.....
Black.....P/N 11-12160.....

MS25181 NYLON SPLICES

Butt-type, self insulated.



| Part No. | Wire Range | Price |
|----------|------------|-------|
| 320559 | 22-18 | . |
| 320562 | 16-14 | . |
| 320570 | 12-10 | . |

AMP® BATTERY TERMINALS



Terminals may be crimped or soldered.

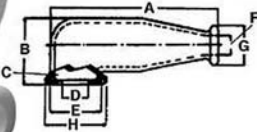
| P/N | AWG Size | Amps | Stud Size | Price ea |
|--------|----------|------|-----------|----------|
| 33461 | 8 | 35 | 1/4" | . |
| 33466 | 6 | 50 | 5/16" | . |
| 33470 | 4 | 70 | 5/16" | . |
| 321600 | 2 | 90 | 3/8" | . |
| 321867 | 1/0 | 125 | 5/16" | . |
| 321868 | 1/0 | 125 | 3/8" | . |

MS25171 ELECTRICAL TERMINAL NIPPLES

Right angle nipples made of silicone rubber (MIL-R-5847, Class II, Grade 50).



PN 11-03913



PN 11-03915

| Part No. | Dimension | | | | | | | | Dash No. | Price Each |
|----------|-----------|------|-----|-----|-----|-----|-----|-----|----------|------------|
| | A | B | C | D | E | F | G | H | | |
| 11-03913 | 1.38 | .56 | .06 | .40 | .63 | .16 | .41 | .76 | -1S | . |
| 11-03914 | 2.50 | 1.00 | .06 | .56 | .82 | .31 | .56 | .95 | -2S | . |
| 11-03915 | 2.50 | 1.00 | .06 | .56 | .82 | .43 | .68 | .95 | -3S | . |
| 11-03916 | 2.50 | 1.00 | .06 | .56 | .82 | .56 | .82 | .95 | -4S | . |
| 11-04837 | 1.38 | .56 | .06 | .40 | .63 | .16 | .41 | .76 | -1 | . |



LIQUID ELECTRICAL TAPE

Protects connections with applicator brush protects electrical connections and terminals against corrosion. Ideal for battery switches, instrument panel terminations, bilge pumps and electrical connections. Dielectric, resists moisture by filling in wire nuts and butt connector ends. The water-based formula is environmentally friendly, non toxic, non-flammable, odor free, will not harden in container, and easy to clean up with water. 4oz. Bottle

P/N 09-42565.....

AMP® SOLDERLESS TERMINALS & SPLICES

AMP's solderless electrical terminals and splices meet and exceed today's requirements for reliable terminals in applications ranging from control circuits to heavy duty power wiring. A limited number of sizes and types of terminals and tools are featured in this catalog. Information and pricing on unlisted items furnished on request.

RING TONGUE, NON-INSULATED TERMINALS

The barrel and tongue of these terminals are fabricated of the finest electrolytic copper and electro-tinned for optimum performance. The seam is brazed for uniform metal strength around the entire barrel area.



| Part No. | AWG Size | Stud Size | Price |
|----------|----------|-----------|-------|
| 34104 | 22-16 | 4 | . |
| 34105 | 22-16 | 6 | . |
| 34108 | 22-16 | 8 | . |
| 34109 | 22-16 | 10 | . |
| 34113 | 22-16 | 1/4 | . |
| 321684 | 16-14 | 6 | . |
| 34122 | 16-14 | 8 | . |
| 34123 | 16-14 | 10 | . |
| 34124 | 16-14 | 1/4 | . |
| 32994 | 12-10 | 8 | . |
| 33457 | 12-10 | 10 | . |
| 35772 | 12-10 | 1/4 | . |
| 35135 | 12-10 | 1/2 | . |

RING TONGUE, VINYL INSULATED TERMINALS

Each insulated terminal consists of a tin plated copper body, a tin plated copper wire support sleeve and a color-coded insulation sleeve.



| Part No. | AWG Size | Stud Size | Price |
|----------|--------------|-----------|-------|
| 31880 | 22-16 RED | 4 | . |
| 31885 | 22-16 | 6 | . |
| 31890 | 22-16 | 8 | . |
| 36154 | 22-16 | 10 | . |
| 31894 | 22-16 | 1/4 | . |
| 32442 | 16-14 BLUE | 6 | . |
| 31902 | 16-14 | 8 | . |
| 31903 | 16-14 | 10 | . |
| 31906 | 16-14 | 1/4 | . |
| 35149 | 12-10 YELLOW | 6 | . |
| 35108 | 12-10 | 8 | . |
| 35109 | 12-10 | 10 | . |
| 35110 | 12-10 | 1/4 | . |
| 35112 | 12-10 | 3/8 | . |

KNIFE DISCONNECTS



Nylon Insulated Two Required Per Assembly.

32446..... 22-16 Red..... ea.
32448..... 16-14 Blue..... ea.

BUTT TYPE SPLICES PLASTI-GRIP

34070..... 22-16 Red..... ea.
34071..... 16-14 Blue..... ea.
34072..... 12-10 Yellow..... ea.

Discount: Less 20% on 100 pieces (per P/N)

AMP TERMINAL KITS

Terminal & Splice Kit.....P/N 11-50000.....
Above w/15 Drawer CabinetP/N 11-50005.....
Above w/Cabinet and 604252-1 tool.....P/N 11-50010.....

FOR KIT COMPONENTS VISIT
www.aircraftspruce.com
OR CALL OUR SALES TEAM AT:
1-877-4-SPRUCE

PIDG FASTON RECEPTACLES BY AMP



* Style A

** Style B

*Style A:
No dimple w/wire stop.
**Style B: Dimple w/wire stop.
Less 20% on 100 pcs. (per P/N)

| Part # | Tab Width | AWG | Tab Thk. | Price |
|------------|-----------|-------|----------|-------|
| 640903-1** | | 22-18 | .032 | . |
| 640905-1** | 0.250" | 16-14 | .032 | . |
| 42844-1** | | 14-12 | .032 | . |
| 11-00808** | | 12-10 | .032 | . |
| 640909-1** | | 22-18 | .020 | . |
| 640911-1** | | 22-18 | .032 | . |
| 640913-1** | 0.205" | 16-14 | .020 | . |
| 640915-1** | | 16-14 | .032 | . |
| 640917-1** | | 22-18 | .020 | . |
| 640919-1** | 0.187" | 16-14 | .020 | . |
| 61048-1** | | 22-18 | .016 | . |
| 61060-1** | | 22-18 | .020 | . |
| 60894-1** | .110" | 22-18 | .032 | . |
| 640923-1* | | 22-18 | .020 | . |
| 640925-1* | | 22-18 | .032 | . |
| 640929-1* | | 16-14 | .020 | . |

SEAL-ALL CONNECTORS

Seal-All Connectors are an environmentally sealed connection system developed to withstand exposure to extreme temperatures, moisture and harsh engine compartment fluids and chemicals with unfaltering performance. It consists of mating heat stabilized polyamide housings, male and female "pin and socket" terminals and self-lubricating silicone connector and cable seals. Seal-All connector configurations are available for one to six wires. -40 C to 125 C temperature range. Now you can have the same superior Plug/Connector that is used in vehicle OEM manufacturing.

SEAL-ALL CONNECTORS (MALE AND FEMALE SHELLS ONLY)

SINGLE CONDUCTOR KIT MANF P/N - WHT1C



P/N 11-06581

DOUBLE CONDUCTOR KIT MANF P/N - WHT2C



P/N 11-06582

TRIPLE CONDUCTOR KIT MANF P/N - WHT3C



P/N 11-06583

4 CONDUCTOR KIT MANF P/N - WHT4C



P/N 11-06584

4 CONDUCTOR KIT MANF P/N WHT4CSQ



P/N 11-06585

5 CONDUCTOR KIT MANF P/N - WHT5C



P/N 11-06586

6 CONDUCTOR KIT MANF P/N - WHT6C



P/N 11-06587

TERMINAL CONNECTOR KITS FOR SEAL-ALL CONNECTORS



Terminal Kits (includes 6 each-male, female terminals and 12 seals). Will work with all Seal-All Shells.

24-22 Ga Wire MANF P/N - WHT2422..... P/N 11-06588

20-18 Ga Wire MANF P/N - WHT2018..... P/N 11-06589

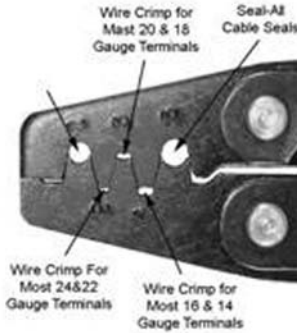
16-14 Ga Wire MANF P/N WHT1614..... P/N 11-06590



SEAL-ALL HEAVY DUTY CONNECTOR

Heavy Duty Connector-42 amps continuous maximum current rating. For 12-10 gauge wire. Complete 2 conductor kit P/N 11-06591

SEAL-ALL CRIMP TOOL



Crimp tool works with all Seal-All terminals and seals. Its compact, low-cost parallel jaw design eliminates terminal rocking.

Seal-All Crimp Tool
P/N 11-06592

PROFESSIONAL SEAL-ALL CRIMPER



Crimps Seal-All terminals and seals in one cycle. Features two double Cavities, an orientation block and a ratchet mechanism to ensure that each crimp cycle is completed. Factory calibrated to be used only with Seal-All terminals and seals. Wire range 20-14.

Pro Seal-All Crimper
P/N 11-06593

SEAL-ALL TERMINAL RELEASE TOOL



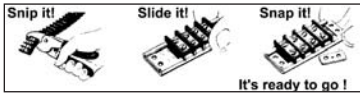
A must have tool for working with Seal-All shells and terminals. Designed to depress Seal-All retention barbs to allow terminal removal from shells.

Seal-All Tool
P/N 11-06594

EL

CABLE TIES – SPIRAL WRAP

AMP® FLEXI-BLOCK MODULAR TERMINAL BLOCK SYSTEM



Assemble terminal blocks to custom requirements in seconds:

1. Pull out the number of block assemblies required from dispenser box. 2. Cut the track with hacksaw or cutting tool two spaces longer than unit. Slip the block assembly into the track 3. Insert end stops and assembly is complete.

USER'S KIT - Consists of 25 pcs Flexi-Block terminal block, 12 end stops and (2) 12" pcs. of track. Complete kit.

PROFESSIONAL KIT - No. 6 kit consists of 100 ea. P/N 604101-1 block assemblies, 25 ea. of P/N 604111-1 end stops & 2 ea. P/N 601805-1 track 3 ft. long. Complete kit.

COPPER BUS BAR - 0.125" x .5" Wide

AMP® SPIRAP SPIRAL PLASTIC TUBING

Spirap plastic tubing is a fast and economical way to bundle wires and harnesses. It is designed to protect wire insulation for the life of the circuit even under severe vibration. Spirap tubing obtains its gripping ability from the memory of the plastic. When 1/4" diameter Spirap is wrapped around a 3/4" diameter wire bundle, the Spirap tubing tries to return to its original 1/4" diameter size, effectively gripping the wire bundle. Flame retardant polyethylene. Color—white. Bundle diameter range: 3/16" to 2".

P/N 500004-1...../ft. /100 ft.

SPIRAL WRAP WIRE PROTECTORS

Permits flexible routing of cable harness while forming a neat, protective bundle. It twists on easily and quickly and allows lead-outs at any point. When installed, it may be gapped for greater economy and flexibility or it may be butted tightly for maximum abrasion resistance, insulation protection and greater rigidity.

Nylon type-for use in wider temperature ranges with high resistance to abrasion and good solvent resistance. PE=Polyethylene NY=Nylon



| Part No. | Size | Max. Dia. | Price/ft. |
|---------------|-------|-----------|-----------|
| 11-12318 (PE) | 1/8" | 1/2" | . |
| 11-12316 (PE) | 3/16" | 1-1/2" | . |
| 11-12314 (NY) | 1/4" | 2" | . |
| 11-12338 (NY) | 3/8" | 3" | . |
| 11-12312 (NY) | 1/2" | 4" | . |
| 11-12334 (PE) | 3/4" | 6" | . |
| 11-12311 (PE) | 1" | 8" | . |

STA-KON ELECTRICAL TERMINALS

Color-coded MS25036 nylon ring w/self-insulated grip. 20% Discount on 100

| Wire Range: 22-18 | | | Wire Range: 16-14 Cont. | | |
|-------------------|-----------|-------|-------------------------|-----------|-------|
| P/N | Bolt Hole | Price | P/N | Bolt Hole | Price |
| 11-03864 | 4 | . | RB14-8 | 8 | . |
| 11-03865 | 6 | . | RB14-10 | 10 | . |
| 11-03866 | 8 | . | RB14-14 | 1/4 | . |
| 11-03862 | 10 | . | Wire Range: 12-10 | | |
| 11-03863 | 1/4 | . | RC10-6 | 6 | . |
| Wire Range: 16-14 | | | RC10-8 | 8 | . |
| 11-04093 | 4 | . | RC10-10 | 10 | . |
| 11-03869 | 6 | . | RC10-14 | 1/4 | . |
| | | | RC10-38 | 3/8 | . |

COBRA RUBBER MOUNTS

| Part No. | Size | Color | Qty. | Price |
|----------|------|---------|------|-------|
| 11-02470 | 3/4" | Black | 100 | . |
| 11-02472 | 3/4" | Natural | 100 | . |
| 11-02474 | 1" | Black | 100 | . |
| 11-02475 | 1" | Black | 1000 | . |
| 11-02476 | 1" | Natural | 100 | . |

COBRA ACRYLIC MOUNTS

| Part No. | Size | Color | Qty. | Price |
|----------|------|---------|--------|-------|
| 11-02478 | 3/4" | Black | 100ct | . |
| 11-02479 | 3/4" | Natural | 100ct | . |
| 11-02481 | 3/4" | Natural | 1000ct | . |
| 11-02482 | 1" | Black | 100ct | . |
| 11-02483 | 1" | Black | 1000ct | . |
| 11-02484 | 1" | Natural | 100ct | . |

STANDARD CINCH AND TRIM GUN

(C-200) Tension Adjust for 18 to 50 lb. Cable Ties

P/N 11-02468



CABLE TIES



This all nylon cable tie is designed to hold cables securely. Bundling strength military requirements. Installs in just seconds.

| Part No. | Cat. # | Length | Price |
|----------|---------|--------|-------|
| 11-04230 | L-4-18 | 4" | . |
| 11-04229 | L-7-50 | 7" | . |
| 11-04058 | L-14-50 | 14" | . |

CABLE TIE ASSORTMENT PACK

P/N 11-03768 11-04039
P/N 11-04230 11-04229
P/N 11-04058

TYTON HORIZONTAL IDENTIFICATION CABLE TIES

Length: 8"; Strength: 50 lbs. P/N 11-12360



TYTON VERTICAL IDENTIFICATION CABLE TIES

Length: 4"; Strength: 18 lbs.
P/N 11-12365

TYTON MOUNTING CABLE TIES

Length: 4"; Strength: 18 lbs. P/N 11-12350
Length: 8"; Strength: 50 lbs. P/N 11-12355

ADHESIVE AND SCREW CABLE TIE MOUNTS



| Part No. | Strength | Mounting | Price/50 |
|----------|----------------|----------|----------|
| 11-01017 | 18 to 30 lbs. | #4 Screw | . |
| 11-03854 | 18 to 50 lbs. | #8 Screw | . |
| 11-03855 | 18 to 150 lbs. | #8 Screw | . |

CRADLE CABLE TIE MOUNTS



| Part No. | Strength | Mounting | Price/50 |
|----------|----------------|------------|----------|
| 11-03987 | 18 lbs. | #6 Screw | . |
| 11-03988 | 18 lbs. | #8 Screw | . |
| 11-03989 | 18 to 50 lbs. | #8 Screw | . |
| 11-03990 | 18 to 50 lbs. | #10 Screw | . |
| 11-03991 | 18 to 120 lbs. | 1.4" Screw | . |



NYLON BULKHEAD SEALS

Nylon Bulkhead seals are used when electrical harnesses or tubing is passed through bulkheads in pressurized and non-pressurized aircraft.

Bulkhead Seal, Square, 1-1/8" Hole P/N 11-04059
Bulkhead Seal, Square, 3/4" Hole P/N 11-04061
Bulkhead Seal, Elliptical, 1/2" Hole P/N 11-04060
Bulkhead Seal, Elliptical, 1-3/8" Hole P/N 11-04062

COBRA LOW PROFILE CABLE TIES

With an exceedingly low profile and a contoured locking head, the Cobra configuration is safer, more flexible and stronger than existing cable ties. Safer because the (often barbed) stub is now deflected into a pocket at the rear of the head. More flexible because the flat lock section curves to the bundle contour and stronger because the Cobra uses an inline geometry, eliminating the stress points of traditional cable ties. Bundles down to 3/8" diameter and meets new AS 3361 specs. Features pick-proof underside lock & all rounded edges.



| Color | Qty. | Tensil | Length/Width | Part No. | Price |
|----------|------|----------|--------------|----------|-------|
| UV Black | 100 | 50 Lbs. | 7.5" x .178" | 11-01883 | . |
| UV Black | 1000 | 50 Lbs. | 7.5" x .178" | 11-01884 | . |
| Natural | 100 | 50 Lbs. | 7.5" x .178" | 11-01885 | . |
| Natural | 1000 | 50 Lbs. | 7.5" x .178" | 11-01886 | . |
| Black | - | 120 Lbs. | 14" x .178" | 11-02416 | . |
| Natural | - | 120 Lbs. | 14" x .178" | 11-02417 | . |
| Black | - | 18 Lbs. | 4" x .178" | 11-02464 | . |
| Natural | - | 18 Lbs. | 4" x .178" | 11-02466 | . |
| Natural | - | 18 Lbs. | 4" x .178" | 11-02467 | . |

COBRA CABLE TIE KITS

STANDARD

Contents of kit includes: 1 - C200 (Standard) Cinch and Trim Gun, 100 - 7.5" 50lb. Low Profile Cable Ties, 1 - Instruction Manual
Black 7.5" Ties P/N 11-06319
Natural 7.5" Ties P/N 11-06320

HEAVY DUTY

Contents of kit includes: 1 - C300 (Heavy Duty) Cinch and Trim Gun, 100 - 14" 120lb. Low Profile Cable Ties, 1 - Instruction Manual
Black 14" Ties P/N 11-04729
Natural 14" Ties P/N 11-04730

BOGERT CABLES



BOGERT'S LOW LOSS COPPER CABLE KITS

Piper Service Bulletin No. 836, considered "mandatory" by Piper Aircraft Corporation, calls for the inspection and replacement of aluminum battery-to-starter cables at the next scheduled inspection, but not to exceed 50 hours of operation. The aluminum cables may generate a lot of heat and have caused melted and blackened cables. This excessive heat buildup could also result in an electrical fire. No replacement parts are available from Piper, and Piper has also specified replacement materials that are not readily available and are very expensive. The Piper-specified cables and sizes actually reduce the maximum allowable cranking amperage to the starter. The Bogert "low-loss" cable assembly kits replace the cables affected by SB 836. They are ready to install and are FAA-PMA approved with an STC. The "low-loss" cables have at least 55% greater capacity than those specified in SB 836 and 25% greater capacity than O.E.M. parts. With the Bogert "low-loss" cables your starter will turn

at its rated speed with greatly reduced current drain from your battery. Please provide year, make, S/N and "N" number of aircraft when ordering. Custom length cables available for home-built aircraft. Request quotation. Advise if plane has a lightweight starter. Extra length cable is provided at no extra charge for lightweight design.

PIPER

| Aircraft Application | Part No. | Our Price | Aircraft Application | Part No. | Our Price |
|----------------------|------------------------------------|-----------|----------------------|----------------|-----------|
| PA-12 | 11-00247 | . | PA-28-235 | Cherokee | 11-15150 |
| PA-16 | 11-00248 | . | PA-28-236 | Dakota | 11-15152 |
| PA-18 | Super Cub | 11-15102 | PA-30 | Twin Comanche | 11-15154 |
| PA-20 | Pacer | 11-15104 | PA-31-300 | Navajo | 11-15156 |
| PA-22 | Tripacer/Colt | 11-15106 | PA-31-310 | Navajo | 11-15158 |
| PA-23-150/160 | Apache | 11-15108 | PA31-325 | Navajo | 11-15160 |
| PA-23-250 | Aztec (4&6 place) | 11-15110 | PA-31-350 | Navajo | 11-15162 |
| PA-24-180/250/260 | Comanche (Battery AFT) | 11-15112 | PA-31P | Navajo | 11-15164 |
| PA-24-260 | Comanche (battery fwd of firewall) | 11-15114 | PA-31T1 | Cheyenne I | 11-15168 |
| PA-31T | Cheyenne | 11-15166 | PA-32R-301T | ----- | 11-15184 |
| PA-24-260 | Comanche (AFT) | 11-15116 | PA-32-260/300 | Cherokee Six | 11-15170 |
| PA-24-400 | Comanche | 11-15118 | PA-32R-300 | Lance | 11-15172 |
| PA-25-235/260 | Pawnee | 11-15120 | PA-32RT-300 | Lance | 11-15174 |
| PA-25-235/260 | Pawnee (SN25-7556153 & up) | 11-15122 | PA-32RT-300T | Lance | 11-15176 |
| PA-28-140 | Cherokee | 11-15124 | PA-32-301 | ----- | 11-15178 |
| PA-28-150/160 | Cherokee | 11-15126 | PA-32R-301 | ----- | 11-15180 |
| PA-28-151 | Warrior | 11-15128 | PA-32-301T | Turbo Saratoga | 11-15182 |
| PA-28-161 | Warrior II | 11-15130 | PA-34-200 | Seneca I | 11-15186 |
| PA-28-180 | Cherokee | 11-15132 | PA-34-200T | Seneca II | 11-15188 |
| PA-28R-180 | Arrow | 11-15134 | PA-34-220T | Seneca III | 11-15190 |
| PA-28-181 | Archer II | 11-15136 | PA-36-285 | | 11-00250 |
| PA-28R-200 | Arrow II | 11-15138 | PA-36-300 | | 11-00251 |
| PA-28R-201 | Arrow III | 11-15140 | PA-36-375 | | 11-00252 |
| PA-28R-201T | Turbo Arrow III | 11-15142 | PA-38-112 | Tomahawk | 11-15192 |
| PA-28RT-201 | Arrow IV | 11-15144 | PA-39 C/R | | 11-00253 |
| PA-28RT-201T | Turbo Arrow IV | 11-15146 | PA-44-180 | Seminole | 11-15194 |
| PA-28-201T | Turbo Dakota | 11-15148 | PA-44-180T | Turbo Seminole | 11-15196 |

CESSNA - BEECHCRAFT - BELLANCA - GRUMMAN - LUSCOMBE - MOONEY - STINSON - COMMANDER - SWIFT

| Aircraft Application | ParT No. | Our Price |
|--|----------|-----------|
| Cessna 150 A, B, C | 11-00273 | . |
| Cessna 150 D, E, F, G, H | 11-00274 | . |
| Cessna 150 J, K, L, M | 11-00275 | . |
| Cessna 152 no APU | 11-00276 | . |
| Cessna 152 with APU | 11-00277 | . |
| Cessna 170 A | 11-00278 | . |
| Cessna 170 B | 11-00279 | . |
| Cessna 172 A | 11-00280 | . |
| Cessna 172 B, C | 11-00281 | . |
| Cessna 172 D, E (rear), F | 11-00282 | . |
| Cessna 172 G, H | 11-00283 | . |
| Cessna 172 I, K, L, M | 11-00284 | . |
| Cessna 172N | 11-00285 | . |
| Cessna 172P | 11-00286 | . |
| Cessna 175 A, B, C | 11-00287 | . |
| Cessna 177 B | 11-00288 | . |
| Cessna 177 RG | 11-00289 | . |
| Cessna 180 | 11-00290 | . |
| Cessna 180 A, B, C, D, E | 11-00291 | . |
| Cessna 180 J | 11-00292 | . |
| Cessna 180 K | 11-00293 | . |
| Cessna 182 1956 model | 11-00294 | . |
| Cessna 182 A | 11-00295 | . |
| Cessna 182 J | 11-00296 | . |
| Cessna 182 E, F, G, H, J, K, L, M, N, P, Q | 11-00297 | . |
| Cessna 185 E & A185E | 11-00298 | . |
| Cessna A185F 12 VOLT | 11-00299 | . |
| Cessna A185F 24 VOLT | 11-02211 | . |

| Aircraft Application | ParT No. | Our Price |
|--------------------------------|----------|-----------|
| Cessna U206 C-G | 11-00301 | . |
| Cessna 210 D | 11-00302 | . |
| Cessna 210 E | 11-00303 | . |
| Cessna T210 F | 11-00304 | . |
| Cessna 210 K, T210K | 11-00307 | . |
| Cessna 210 N, T210N | 11-00306 | . |
| Beechcraft BE-35-C33 | 11-00254 | . |
| Beechcraft BE-V35 | 11-00255 | . |
| Beechcraft BE-C35 | 11-00256 | . |
| Beechcraft BE-S35 | 11-00257 | . |
| Bellanca BL-14-19-2 | 11-00258 | . |
| Bellanca BL-14-19-3 | 11-00259 | . |
| Bellanca BL-17-30 | 11-00260 | . |
| Bellanca BL-17-30A | 11-00261 | . |
| Bellanca/Champion 7GCBA, 7ECA | 11-00262 | . |
| Bellanca/Champion 7GCAA, 7KCAB | 11-00263 | . |
| Bellanca/Champion 8KCAB | 11-00264 | . |
| Bellanca/Champion 7GCB | 11-00265 | . |
| Bellanca/Champion 7GCBC | 11-00266 | . |
| Grumman GRUM-AA5, 5A, 5B | 11-00267 | . |
| Grumman GRUM-AA-1A, 1B, 1C | 11-00268 | . |
| Luscombe LU-8E | 11-00269 | . |
| Mooney MO-M20C | 11-00270 | . |
| Mooney MO-M20F | 11-00271 | . |
| Stinson STI-108 1, 2, 3 | 11-00272 | . |
| Rockwell Commander RW-112 | 11-00308 | . |
| Rockwell Commander RW-114 | 11-00309 | . |
| Swift GC-1A, 1B | 11-00311 | . |



WHELEN AVIATION LIGHTING

POSITION LIGHTS AND ANTI-COLLISION LIGHT DISTRIBUTION PATTERNS REQUIREMENTS



An approved anti-collision strobe light system must project light 360° around the aircraft's vertical axis. One or more strobe lights can be used.



An approved anti-collision strobe light system must project light + or - 30° above and below the horizontal plane of the aircraft. One or more strobe lights can be used. The + or - 75° projected light is required since July 18, 1977.



ANTI-COLLISION AND POSITION LIGHT REQUIREMENTS, LOCATIONS, & DISTRIBUTION PATTERNS

All aircraft must have an approved anti-collision light and position light system for nighttime operations. The position lights consist of an Aviation Red on the right side, an Aviation Green on the left and an Aviation White taillight (REF. FAR 23.1389).

The anti-collision lighting system is required under FAR PART 91.205(c).

There are different requirements affecting different aircraft. These aircraft are categorized by the date of application for type certificate. Home built aircraft are determined by the date of issuance of the Experimental Operating Limitations. The different categories are as follows:

Aircraft for which type certificate was applied for after

April 1, 1957 to August 10, 1971:

These anti-collision systems must produce a minimum of 100 effective candela in Aviation Red or White (REF. FAR 23.1397), 360° around the aircraft's vertical axis, 30° above and below the horizontal plane (REF. FAR 23.1401).

Aircraft for which type certificate was applied for after August 11, 1971 to July 18, 1977:

These anti-collision systems must produce a minimum of 400 effective candela in Aviation Red or White (REF. FAR 23.1397), 360° around the aircraft's vertical axis, 30° above and below the horizontal plane (REF. FAR 23.1401).

Aircraft for which type certificate was applied for after July 18, 1977:

These anti-collision systems must produce a minimum of 400 effective candela in Aviation Red or White (REF. FAR 23.1397), 360° around the aircraft's vertical axis, 75° above and below the horizontal plane (REF. FAR 23.1401).

Note: The position lights must be wired independently of anti-collision lights.

INSTALLATION LOCATIONS

WING TIP:

The major difference in systems is the location of the strobe power supplies which can be mounted locally, one in each wing tip, or a single power supply can be mounted in the fuselage. Installation time can be greatly reduced if done in conjunction with an annual or one hundred-hour inspection. Properly installed power supplies and cabling are necessary for the safe operation of Whelen or any light systems.

FUSELAGE:

Fuselage mounted units can be either self-contained with the power supply and lighthouse as one unit, or remote lighthouses run off a separate power supply. To meet the field of coverage, one must be on the top of the fuselage and one on the bottom.

VERTICAL FIN:

Finally, if applicable, a single anti-collision light can be mounted on the vertical stabilizer. It can be either a self-contained or remote lighthouse depending on the aircraft.

HOME BUILT & KIT AIRCRAFT

For Aircraft with Standard Wing Tips – The most widely used system on the market, this provides all of the components for anti-collision and position lights without the need for a taillight. The power supply is mounted in the fuselage and shielded cable is run to the strobe lights. The following is recommended:

| Quantity | Model # | Part # | Description |
|--|----------|---------------|--|
| 1 each | HDACF | 01-0770028-05 | Power supply |
| 1 each | A600PG14 | 01-0790006-00 | Wing tip strobe/position/taillight, 14 VDC |
| 1 each | A600PR14 | 01-0790006-02 | Wing tip strobe/position/taillight, 14 VDC |
| Note: Model 9034001 and 9034002 can replace Model A600 for a LED solution | | | |
| 1 each | HD60 | 01-0750206-00 | Installation package |

For Aircraft with Enclosed Wing Tip Fairings – If the position and strobe lights are mounted under a clear fairing, a third tail strobe is required. The following is recommended:

| Quantity | Model # | Part # | Description |
|--|----------|---------------|--|
| 1 each | HDACF | 01-0770028-05 | Power supply |
| 1 each | A650PG14 | 01-0770054-00 | Wing tip strobe/position light, 14 VDC |
| 1 each | A650PR14 | 01-0770054-02 | Wing tip strobe/position light, 14 VDC |
| Note: Model 7111001 and 7111002 can replace Model A650 for a LED solution | | | |
| 1 each | A500AV14 | 01-0770024-00 | Tail position/strobe light assembly |
| 1 each | HDT390 | 01-0750205-00 | Installation package |

For Aircraft with Enclosed Wing Tip Fairings & Wing Tip Mounted Power Supplies – If position and strobe lights are mounted under a clear fairing, the need for a third tail strobe is required. The following is recommended:

| Quantity | Model # | Part # | Description |
|--|----------|---------------|---|
| 2 each | A490ATSC | 01-0770062-03 | Power supply |
| 1 each | A650PG14 | 01-0770054-00 | Wing tip strobe/position/taillight, 14 VDC |
| 1 each | A650PR14 | 01-0770054-02 | Wing tip strobe/position/taillight, 14 VDC |
| Note: Model 7111001 and 7111002 can replace Model A650 for a LED solution | | | |
| 1 each | A500AV14 | 01-0770024-00 | Tail position/strobe light assembly, 14 VDC |
| 3 each | HS5 | 01-0750215-00 | Installation package |

LOCATIONS ON THE AIRCRAFT FOR ANTI-COLLISION STROBE LIGHTS, TO COMPLY TO THE LIGHT PATTERN REQUIREMENTS



VERTICAL FIN

One anti-collision strobe light mounted on the vertical fin will meet the minimum requirements on most aircraft. A half red and half white lens is recommended.



WING TIP

Two wing tip strobe lights that protrude beyond the wing tip.



ENCLOSED WING TIP

Enclosed wing tip anti-collision strobe lights, require a third strobe light on the tail or vertical fin, to fill in the required light envelope. This is an approved anti-collision system.



FUSELAGE

In a fuselage mounted anti-collision strobe light system, a minimum of two strobe lights are necessary to get the required vertical coverage. This is an approved anti-collision system.

EL

WHELEN POWER SUPPLIES - LIGHT HEADS

HOW TO CHOOSE A POWER SUPPLY AND ABOUT COMETFLASH®

The power supply needed depends on the application, and the mounting location. Model HDACF Series is a fuselage mounted power supply that will power two or three lights. Model A490ATSC Series is designed for installation adjacent to the strobe lighthead and will power one light assy. Model A490TCF Series is the most economical power supply when adding only one light. It mounts adjacent to the strobe lighthead assembly (not legal for light output with red strobe light). Most other Whelen power supplies are application specific, call for details. Unless otherwise noted, all power supplies are CometFlash®. A major advancement in the field of safety lighting. By pulsing the flash tube four times in rapid succession, the effective "on-time" of the strobe is increased from 2/1000 of a second to 4/10 of a second. This increases your airplane's visibility.



MODEL HDACF SERIES - HDACF series provides simultaneous flashing, alternate flashing or both. It will operate one, two or three strobe lightheads. Operating the wing tip strobes in the alternating mode will provide an accumulated 42 joules of power to each light. When in the simultaneous mode, the accumulated power to each light is 21 joules. In the three light mode, the wing tips will flash simultaneous at an accumulated 21 joules each, they alternate with a third light operating at an accumulated 42 joules. On the trigger selector outlet, a switch mounted in place of the jumper will allow wing tip outlets 2 & 3 to be turned off, while the tail outlet 1 will remain on. This function is commonly used when the third light is for ground operations. This power supply will operate from 10 to 30 VDC.

SPECIFICATIONS: • Power Consumption: 7.0 amps @ 14 VDC; 3.5 amps @ 28 VDC • Weight: 2.1 lbs. (953gm) • Length: 5.50" (140mm) • Width: 5.0" (127mm) • Height: 2.37" (60mm)

| Model # | Approvals | Part No. | Price |
|---------|-----------|----------|-------|
| HDACF | FAA/PMA | 11-16218 | . |

MODEL A490ATSC SERIES - A490ATSC series operates one strobe lighthead. Its compact size allows mounting in the wing tip and/or the tail, adjacent to the lighthead. It produces an accumulated 34 joules of power and can be equipped to flash simultaneously with up to 5 other like units by connecting an 18 gauge wire between outlet 3 on the input power connector. This power supply will operate from 10 to 30 VDC.

SPECIFICATIONS: • Power Consumption: 4.0 amps @ 14 VDC; 2.0 amps @ 28 VDC • Weight: 1.7 lbs. (771gm) • Length: 5.0" (127mm) • Width: 3.12" (79mm) • Height: 3.06" (78mm)

| Model # | Approvals | Part No. | Price |
|----------|-----------|----------|-------|
| A490ATSC | FAA/PMA | 11-02666 | . |

MODEL A490TCF SERIES - A490TCF series operates one strobe lighthead. It is our most compact unit and can be mounted in the wing tip and/or the tail adjacent to the lighthead. It produces an accumulated 19 joules of power. It will only meet 400 CP when used with the A470A-W. This unit cannot be synchronized. Operates from 10 to 30 VDC (not approved for use with red strobe light). **SPECIFICATIONS:** • Power Consumption: 1.7 amps @ 14 VDC; 0.85 amps @ 28 VDC • Weight: 1.2 lbs. (544gm) • Length: 5.0" (127mm) • Width: 3.12" (79mm) • Height: 2.38" (60mm)

| Model # | Approvals | Description | Part No. | Price |
|----------|-----------|-----------------------------|----------|-------|
| A490TCF | FAA/PMA | 20" leads, amp connectors | 11-14714 | . |
| A490TCFM | — | 20" leads, Molex connectors | 11-06406 | . |
| 7000615 | — | 20" leads, no connectors | 11-07600 | . |

MODEL A490TCCF SERIES - A490TCCF series is the same as the A490TCF but has a mounting plate with additional holes that directly replaces factory installed systems on single engine Cessna's, Aero Commanders, and Grumman Americans. **SPECIFICATIONS:** • Power Consumption: 1.7 amps @ 14 VDC; 0.85 amps @ 28 VDC • Weight: 1.2 lbs. (544gm) • Length: 5.0" (127mm) • Width: 3.12" (79mm) • Height: 2.38" (60mm)

| Model # | Approvals | Description | Part No. | Price |
|----------|-----------|--|----------|-------|
| A490TCCF | FAA/PMA | 20" leads, amp connectors | 11-02661 | . |
| 7000612 | — | 9" output, 7" input, leads (Cessna 172) | 11-04493 | . |
| 7000616 | — | 20" lds, ms conn on output ld | 11-07601 | . |
| 7000617 | — | 3" output, 7" input & 4 pos. amp conn (Cessna) (182,206) | 11-04494 | . |

MODEL HDS SERIES - HDS series produces 20 joules of energy, SingleFlash, alternating between two light assemblies. The SingleFlash allows for a low current draw. This power supply will operate from 10 to 30 VDC. **SPECIFICATIONS:** • Power Consumption: 4.0 amps @ 14 VDC; 2 amps @ 28 VDC • Weight: 2.0 lbs. (907gm) • Length: 5.50" (140mm) • Width: 5.0" (127mm) • Height: 2.37" (60mm)

| Model # | Approvals | Part No. | Price |
|---------|-----------|----------|-------|
| HDS1428 | — | 11-03279 | . |

NOTE: All non-FAA approved whelwn parts are signified by a (—) in the approval column. Parts without FAA approval may still be purchased, however, installation of these parts on U. S. Type Certificated products may require additional FAA approvals.



MODEL 90340 SERIES STROBE ANTI-COLLISION/LED POSITION LIGHT ASSEMBLY

90340 series is an all inclusive wing tip mounted strobe anti-collision/position light assembly utilizing LED's for both the forward & tail position lights, eliminating the need for a tail mounted position light. The LED's provide a significant reduction in current draw over conventional position light bulbs. The strobe light lens assembly is radio shielded for maximum EMI/RFI protection. Direct replacement (exact footprint) for the Whelen Model A600PG/PR series without replacing the current strobe power supply. Single set of flying leads operates both forward & tail nav on 28 VDC version, and one set each of flying leads for the forward & tail nav on the 14 VDC version.



MODEL 90375 SERIES STROBE ANTI-COLLISION/LED POSITION LIGHT ASSEMBLY (FOR COMPOSITE WINGTIP STRUCTURE)

Same as 90340 series with addition of 3 feet of braided bonded protection. **SPECIFICATIONS:** • LED Navigation Light Power Consumption: 0.5 amps @ 14 VDC, 0.25 amps @ 28 VDC • Weight: 0.60 lbs. (272gm) 14 VDC, 0.65 lbs. (295gm) 28 VDC • Exposed Height: 2.70" (69mm) • LED Colors: Aviation Red, Aviation Green & Aviation White 1.1 lbs. (499gm) • Lens: Clear RFI coated glass: strobe, Clear Polycarbonate: Navigation Lights

| Model # | Approvals | Description | Part No. | Price |
|---------|------------------------------------|--------------|----------|-------|
| 9034001 | FAA TSO-C96a/TSO-C30c Typ II & III | Pos Grn, 14V | 11-05625 | . |
| 9034002 | FAA TSO-C96a/TSO-C30c Typ I & III | Pos red, 14V | 11-05626 | . |
| 9034003 | FAA TSO-C96a/TSO-C30c Typ I & III | Pos Grn, 28V | 11-05627 | . |
| 9034004 | FAA TSO-C96a/TSO-C30c Typ II & III | Pos red, 28V | 11-05628 | . |
| 9037501 | FAA TSO-C96a/TSO-C30c Typ II & III | Pos Grn, 28V | 11-06598 | . |
| 9037502 | FAA TSO-C96a/TSO-C30c Typ I & III | Pos red, 28V | 11-06599 | . |



MODEL A600 PG/PR SERIES

A600 PG/PR series wing tip anti-collision, forward position and tail position lights, all in one compact unit. Tail position light eliminates the need for a tail mounted position light. Available in 14 or 28 VDC and in a radio-shielded version. The forward position lamp is 26 watts and the taillight lamp is 25 watts. **SPECIFICATIONS:** • Weight: 0.8 lbs. (363gm) • Position Lamps Power Consumption: 4 amps @ 14 VDC; 2 amps @ 28 VDC • Exposed Height: 2.4" (61mm) • Length: 5.63" (143mm) • Width: 1.7" (43mm)

| Model # | Approvals | Description | Part No. | Price |
|----------|-----------------------------|--------------------------------|----------|-------|
| A600PG14 | FAA TSO-C30b / FAA/PMA | Pos Grn, 14V | 11-03220 | . |
| A600PG28 | FAA TSO-C30b / FAA/PMA | Pos Grn, 28V | 11-03245 | . |
| A600PR14 | FAA TSO-C30b / FAA/PMA | Pos red, 14V | 11-03221 | . |
| A600PR28 | FAA TSO-C30b / FAA/PMA | Pos red, 28V | 11-03246 | . |
| A600PGD1 | FAA TSO-C30b / FAA/PMA | Pos green, 14V, radio-shielded | 11-03636 | . |
| A600PGD2 | FAA TSO-C30b / FAA/PMA | Pos Grn, 28V, radio-shielded | 11-03732 | . |
| A600PRD1 | FAA TSO-C30b / FAA/PMA | Pos red, 14V, radio-shielded | 11-03638 | . |
| A600PRD2 | FAA TSO-C30b / FAA/PMA | Pos red, 28 V, radio-shielded | 11-06335 | . |
| 9000612 | FAA TSO-C30b used on Cirrus | Pos green, 28V, radio-shielded | 11-07602 | . |
| 9000613 | FAA TSO-C30b used on Cirrus | Pos red, 28V, radio-shielded | 11-07603 | . |



MODEL 71110 SERIES STROBE ANTI-COLLISION/LED POSITION LIGHT ASSEMBLY

71110 series is a wing tip mounted strobe anti-collision/position light assembly utilizing LED's for the forward position lights. The LED's provide a significant reduction in current draw over conventional position light bulbs. The strobe light lens assembly is radio shielded for maximum EMI/RFI protection. Direct replacement (exact footprint) for the Whelen Model A650PG/PR series without replacing the current strobe power supply. Navigation light portion is wired with flying leads.

SPECIFICATIONS: • LED Colors: Aviation Red, Aviation Green • LED Navigation Light Power Consumption: 0.25 amps @ 14 VDC or 28 VDC • Weight: 0.45 lbs. (204gm) 14 VDC, 0.50 lbs. (227gm) 28 VDC • Exposed Height: 2.70" (69mm) • Lens: Clear RFI coated glass: strobe, Clear Polycarbonate: Navigation Lights

| Model # | Approvals | Description | Part # | Price |
|---------|----------------------------------|---------------|----------|-------|
| 7111001 | FAA TSO-C96a / TSO-C30c Type II | Pos Grn, 14 V | 11-05630 | . |
| 7111002 | FAA TSO-C96a / TSO-C30c Type II | Pos red, 14 V | 11-05633 | . |
| 7111003 | FAA TSO-C96a / TSO-C30c Type III | Pos Grn, 28 V | 11-05635 | . |
| 7111004 | FAA TSO-C96a / TSO-C30c Type III | Pos red, 28 V | 11-05636 | . |

WHELEN SELF-CONTAINED LIGHT ASSEMBLIES



MODEL 70900 SERIES LED BEACONS - (for fixed wing aircraft) 70900 series are FAA TSO compliant self-contained anti-collision lights for fixed wing aircraft. An external power unit is not required. Conservative lab life results greater than 20,000 hours. No EMI or RFI produced. All units meet the minimum requirements stated in FAR Parts 23 & 25 for anti-collision light systems used on fixed wing aircraft, Ref; Class

III (100 effective candela) of SAE AS8017a minimum performance standards. STC SA615EA approved.

Models 7090004 & 7090005 are designed to replace existing light assemblies with the 3-3/4" (95mm) dia. mounting pattern (Ref. Whelen HRCFA series, 90081 series, and "old style" rotating beacons). Same mounting hole pattern, no modification to the aircraft is required. **SPECIFICATIONS:**

• Power Consumption: P/N 11-02523: 0.85 amps @ 14 VDC • Power Consumption: P/N 11-02524: 0.425 amps @ 28 VDC • LED Color: Aviation Red • Weight: 1.1 lbs. (499gm) • Exposed Height: 3.1" (78mm) • Exposed Diameter: 2.8" (71mm)

| Model # | Approvals | Description | Part No. | Price |
|---------|------------------------|-------------------------------|----------|-------|
| 7090004 | FAA TSO-C96a Class III | Red, 3-3/4 dia. mount, 14 VDC | 11-02523 | . |
| 7090005 | FAA TSO-C96a Class III | Red, 3-3/4 dia. mount, 28 VDC | 11-02524 | . |



9052051

MODEL 90520 SERIES LED FLASHING BEACON (RED & WHITE LED'S) - 90520 series LED beacons are FAA TSO compliant self-contained LED anti-collision lights (Ref. Class I - 100 effective candlepower). They are designed to replace strobe lighthoods as small as the A470A with available models to replace HR self-contained beacons (HRCFA) or our legacy 70900 LED beacon. Mounting plate included with assembly. Refer to models and descriptions below.

ELECTRICAL:

Models ending: 2001, 2004, 2005, 2014, 2015, 2051, 2055: 12" Flying Leads

Models ending: 2007, 2017, 2008, 2018: MS3102R10SL-3P Connector

MECHANICAL:

Models: 2004, 2014, 2008, 2018 are designed to replace existing beacons utilizing a 5 Hole mounting pattern on 4.656 diameter bolt circle (Whelen 70285 series / 7090501 series or 70900 with A440 adapter).

Models: 2005, 2015, 2007, 2017 are 3 3/4" opening designed to fit inside an A440 mounting adapter, mounting holes to fit in place of rotating beacons, Whelen model HRCFA, or 7090004, -05 series LED beacons

SPECIFICATIONS: • Current: 0.67 amps Average, 3.0 amps Peak • Weight: 0.65 lbs. (295gm) (-01 & -51) • Lens: Clear polycarbonate • Dimensions: 2.6" (66mm) Diameter, Exposed Height, 3.74" (95mm) (-01 & 51)

| Model # | Approvals | Description | Part No. | Price |
|---------|----------------------|---------------------------------------|----------|-------|
| 9052001 | FAA TSO-C96a Class I | LED red/white, 28 VDC & mount | 11-07615 | . |
| 9052051 | FAA TSO-C96a Class I | LED red/white, 14 VDC & mount | 11-07616 | . |
| 9052004 | FAA TSO-C96a Class I | LED red/white, 28 VDC & 5 hole mount | 11-07617 | . |
| 9052014 | FAA TSO-C96a Class I | LED red/white, 28 VDC & 5 lower mount | 11-07618 | . |
| 9052005 | FAA TSO-C96a Class I | LED red/white, 28 VDC, 3.75" adapter | 11-07619 | . |
| 9052015 | FAA TSO-C96a Class I | same as 9052005, lower mount | 11-07620 | . |
| 9052007 | FAA TSO-C96a Class I | LED red/white, 28 VDC, 3.75" adapter | 11-07621 | . |
| 9052017 | FAA TSO-C96a Class I | same as 9052007, lower mount | 11-07622 | . |
| 9052008 | FAA TSO-C96a Class I | LED red/white, 28 VDC & 5 hole mount | 11-07623 | . |
| 9052018 | FAA TSO-C96a Class I | LED red/white, 28 VDC & 5 lower mount | 11-07624 | . |



MODEL HRCFA SERIES - HRCFA series is a self-contained CometFlash® strobe anti-collision light. The unique polycarbonate optic lens and reflector design re-directs stray light rays into the horizontal plane to provide maximum 360° of uniform light coverage. Available in three different lens colors, aviation red, aviation white and split aviation red/white and in radio-shielded configurations. FAA approved as a direct replacement for any rotating beacon that uses a 3-3/4" (95mm) dia. mounting hole. Can be installed in the vertical fin or the fuselage. Fuselage installation requires the A440 mounting adapter. Operates between 10 to 30 VDC. **SPECIFICATIONS:** • Weight: 1.5 lbs. (680gm) • Height: 7.25" (184mm) • Diameter: 3.7" (94mm) • Power Consumption: 3.2 amps @ 14 VDC, 1.6 amps @ 28 VDC

| Model # | Approvals | Description | Part # | Price |
|---------|-----------|---------------------------------|----------|-------|
| HRCFA | FAA/PMA | Std. assy, red lens | 11-16214 | . |
| HRCFAW | FAA/PMA | Std. assy, white lens | 11-16212 | . |
| HRCFAS | FAA/PMA | Std assy, split red/white | 11-16216 | . |
| HRCFADR | FAA/PMA | Radio-shielded, red lens | 11-07625 | . |
| HRCFADW | FAA/PMA | Radio-shielded, white lens | 11-07626 | . |
| HRCFADS | FAA/PMA | Radio-shielded, split red/white | 11-07627 | . |



MODEL 71080 SERIES LED BEACON FOR ROTORCRAFT, (150 EFF. CD) (14 VDC & 28 VDC) - 71080 series LED beacons are FAA TSO compliant self-contained LED anti-collision lights (Ref. Class I - 150 effective candlepower). They are designed to replace a range of products. Refer to models and descriptions below.

ELECTRICAL:

7108051 Models ending: 8001, 8004, 8005, 8014, 8015, 8020, 8051, 8055: 12" Flying Leads

Models ending: 8007, 8017, 8008, 8018: MS3102R10SL-3P Connector

MECHANICAL:

Models: 8004, 8014, 8008, 8018 are designed to replace existing beacons utilizing a 5-Hole mounting pattern on a 4.656 diameter bolt circle (Whelen 70285 series/7090501 series or 70900 with A440 adapter).

Models: 8005, 8015, 8007, 8017 are 3 3/4" opening designed to fit inside an A440 mounting adapter, mounting holes to fit in place of rotating beacons, Whelen Model HRCFA, or 7090004, -05 series LED beacons

SPECIFICATIONS: • Current: 0.87 amps average, 3.0 amps peak • Weight: 0.65 lbs. (295gm) (8001 & 8051) • Lens: Clear polycarbonate • Dimensions: 2.6" (66mm) diameter, exposed height, 3.74" (95mm) (8001 & 8051)

| Model # | Approvals | Description | Part # | Price |
|---------|--------------------------------|--------------------------------|----------|-------|
| 7108001 | FAA TSO-C96a Class I (150 ecp) | LED red, 28 VDC & Mt. | 11-06174 | . |
| 7108051 | FAA TSO-C96a Class I (150 ecp) | LED red, 14 VDC & Mt. | 11-07656 | . |
| 7108004 | FAA TSO-C96a Class I (150 ecp) | LED red, 28 VDC & 5-Hole mount | 11-07687 | . |
| 7108014 | FAA TSO-C96a Class I (150 ecp) | Same as 8004, lower Mt | 11-07688 | . |
| 7108005 | FAA TSO-C96a Class I (150 ecp) | LED red, 28 VDC, 3.75" adapter | 11-07689 | . |
| 7108015 | FAA TSO-C96a Class I (150 ecp) | same as 8005, lower Mt | 11-07690 | . |
| 7108007 | FAA TSO-C96a Class I (150 ecp) | LED red, 28 VDC, 3.75" adapter | 11-07691 | . |
| 7108017 | FAA TSO-C96a Class I (150 ecp) | same as 8007, lower Mt. | 11-07692 | . |
| 7108008 | FAA TSO-C96a Class I (150 ecp) | LED red, 28 VDC & 5 hole mount | 11-07693 | . |
| 7108018 | FAA TSO-C96a Class I (150 ecp) | same as 8008, lower Mt. | 11-07694 | . |



MODEL 70905 SERIES LED BEACONS (FOR ROTORCRAFT) - NOTE: Users of 70905 Series LED beacons should examine Model 71080 (above). At a lower cost and less weight 71080 is designed to replace all 70905 Series beacons.

70905 series are self-contained anti-collision lights for Rotorcraft. An external power unit is not required. All units meet the minimum requirements stated in FAR Parts 27 & 29 for anti-collision light systems used on rotorcraft, Ref: Class I (150 effective candela) of SAE AS8017a minimum performance standards. 28 VDC Only.

7090505 is designed to replace existing beacons on the Eurocopter EC120, 130, & 135, or any other rotorcraft that uses the 4 hole mounting as shown on the mounting plate. It incorporates a MIL-C-38999 Series III, 20FA98PN connector for input.

SPECIFICATIONS: • Power Consumption: 0.45 amps @ 28 VDC • LED Color: Aviation Red • Weight: 1.4 lbs. (635gm) • Exposed Height: 4.04" (103mm) • Exposed Diameter: 3.66" (93mm)

| Model # | Approvals | Description | Part # | Price |
|---------|----------------------|-------------|----------|-------|
| 7090505 | FAA TSO-C96a Class I | Red | 11-05006 | . |

MODEL 70285 SERIES - 70285 series self-contained CometFlash® strobe anti-collision light. It utilizes the same lens/reflector and strobe tube as the model HRCFA, however, its vibration resistant, heavy-duty construction is specially designed for helicopter applications. It has a fixed mounting adapter and an MS input connector. Available in three different lens colors, Aviation red, aviation white, and split aviation red/white and in radio-shielded configurations. FAA approved as a direct replacement for any rotating beacon that uses a 3-3/4" dia. mounting hole. Unit will operate between 10 to 30 VDC. **SPECIFICATIONS:** • Weight: 1.5 lbs. (680gm) • Height: 8.0" (203mm) • Diameter: 3.7" (94mm) • Power Consumption: 3.2 amps @ 14 VDC, 1.6 amps @ 28 VDC

| Model # | Approvals | Description | Part # | Price |
|---------|-----------|----------------------------------|----------|-------|
| 7028521 | --- | Shielded, red lens | 70285-1 | . |
| 7028522 | --- | Shielded, red lens with .31 mask | 11-07696 | . |
| 7028523 | --- | White lens | 70285-3 | . |
| 7028524 | --- | Split red/white lens | 70285-24 | . |
| 7028525 | --- | Red lens | 70285-5 | . |
| 7028526 | --- | Shielded, red lens with .29 mask | 70285-6 | . |
| 7028527 | --- | White lens, with lock wire | 11-07698 | . |
| 7028528 | --- | Shielded, split red/white lens | 70285-2 | . |

NOTE: All non-FAA approved whelwn parts are signified by a (-) in the approval column. Parts without FAA approval may still be purchased, however, installation of these parts on U. S. Type Certified products may require additional FAA approvals.

EL

WHELEN SELF-CONTAINED LIGHT ASSEMBLIES



MODEL SACF SERIES - SACF series self-contained Comet-Flash strobe anti-collision light which utilizes the same power supply & housing as the model HRCFA. It uses an aviation white glass lens only, ideal for agricultural applications where chemicals are used. Because the lens has no optics built-in, it produces 300 effective candlepower. It uses a 3-3/4" dia. mounting hole. Fuselage installation requires the A440 mounting adapter. Operates between 10 to 30 VDC.

SPECIFICATIONS: • Weight: 1.5 lbs. (680gm) • Height: 5.50" (140mm) • Diameter: 3.7" (94mm) • Power Consumption: 3.2 amps @ 14 VDC, 1.6 amps @ 28 VDC

| Model # | Approvals | Description | Part # | Price |
|---------|-----------|---------------------|----------|-------|
| SACF | FAA/PMA | Aviation white lens | 11-03262 | . |



MODEL A440 MOUNTING ADAPTER - A440 mounting adapter is for fuselage installations for the HRCFA series and the SACF series.

| Model # | Approvals | Description | Part # | Price |
|---------|-----------|------------------|----------|-------|
| A440 | FAA/PMA | Mounting adapter | 11-03699 | . |



MODEL 70509 SERIES - 70509 series self-contained halogen flashing anti-collision light with the same mounting pattern as the factory installed beacon on single engine Cessna's 1967 & later. Available in three different lens colors, Aviation red, aviation white and split aviation red/white. When used in conjunction with the model 50519 mounting adapter, it can replace rotating beacons with the 3-3/4" (95mm) dia. mounting hole.



Note: Not recommended for installation on helicopters or twin engine aircraft.

SPECIFICATIONS: • Weight: 0.27 lbs. (122gm) • Height: 3.75" (95mm) • Diameter: 2.65" (67mm) • Power Consumption: 2.7 amps @ 14 VDC, 1.3 amps @ 28 VDC

| Model # | Approvals | Description | Part # | Price |
|----------|--------------|---|----------|-------|
| 7050900 | FAA TSO-C96a | 14V, red lens | 11-03235 | . |
| 7050901 | FAA TSO-C96a | 14V, white lens | 11-03268 | . |
| 7050902 | FAA TSO-C96a | 14V, red/white lens | 11-03231 | . |
| 7050903 | FAA TSO-C96a | 28V, red lens | 11-03276 | . |
| 7050904 | FAA TSO-C96a | 28V, white lens | 11-05108 | . |
| 7050905 | FAA TSO-C96a | 28V, red/white lens | 11-03292 | . |
| 7050907 | FAA TSO-C96a | 28V, red lens w/ mask, Cessna single engine | 11-07628 | . |
| 50519001 | — | option mounting adptr | 11-03238 | . |

MODEL 90350 SERIES SELF-CONTAINED LED GROUND RECOGNITION LIGHT ASSEMBLY



- 90350 series is a self-contained all LED ground recognition light assembly. The design is intended to provide a solution to the needs for ground recognition lighting on a wide variety of aircraft. All current source and flasher circuitry is contained within the

base plate. Unit is flush mounted to aircraft surface eliminating the need for large cutouts in the aircraft structure. Item ships with flying leads.

SPECIFICATIONS: • Power Consumption: 0.28 amps Avg. @ 28 VDC • LED Colors: Aviation Red • Lens: Aviation Red, Polycarbonate • Weight: 0.2 lbs. (91gm) • Exposed Height: 1.48" (38mm) • Exposed Width: 1.64" (42mm) • Exposed Length: 4.61" (117mm)

| Model # | Approvals | Description | Part # | Price |
|---------|-----------|-------------|----------|-------|
| 9035000 | — | Red, 28 VDC | 11-06172 | . |



MODEL 71055 SERIES LED BEACON - 71055 series beacons are FAA TSO compliant self-contained LED anti-collision lights. They are designed to replace existing quartz halogen flasher beacons installed as original equipment on single engine Cessna's from 1967 and later (contact factory for details). They can also replace remote mounted strobe lights (ref. Whelen A470 series) allowing for removal of the strobe power supply. Internal mounting plate provided with choice of mounting holes to retrofit most existing mounting patterns. STC SA615EA approved.

SPECIFICATIONS: • Power Consumption: 01-0771055-00 - 1.2 amps Avg. / 11-04542 - 0.6 amps Avg. • LED Color: Aviation RED • Lens: Clear Polycarbonate • Weight: 0.52 lbs. (236gm) • Exposed Height: 3.09" (78mm) • Exposed Diameter: 2.60" (66mm)

| Model # | Approvals | Description | Part # | Price |
|---------|------------------------|------------------------|----------|-------|
| 7105500 | FAA TSO-C96a Class III | LED beacon 14 VDC, red | 11-04541 | . |
| 7105501 | FAA TSO-C96a Class III | LED beacon 28 VDC, red | 11-04542 | . |

NOTE: All non-FAA approved whelwn parts are signified by a (—) in the approval column. Parts without FAA approval may still be purchased, however, installation of these parts on U. S. Type Certificated products may require additional FAA approvals.



MODEL 90088 SERIES LED ANTI-COLLISION LIGHT

- 90088 series is a self-contained LED anti-collision beacon. It's solid-state circuitry and LED light source obsolete the "old style" mechanical oscillating beacons as well as the Whelen 90044 series quartz halogen flashing beacons. Benefits include no moving parts, no EMI/RFI, no inrush current spikes and crisp on/off cycles. There are several models available to provide compatibility with existing mounting patterns and profiles, thus eliminating the need to alter the aircraft.

SPECIFICATIONS: • Power Consumption: 0.45 amps @ 28 VDC • LED Color: Aviation RED • Weight: 1.8 lbs (816gm) (unless otherwise noted) • Exposed Height: 2.70" (69mm) • Lens Color: Clear glass • Replaces: Whelen: 90044 Series and Grimes: G9950(-), 40-0100(-), 30-2140(-), 40-0117(-), 40-0127(-), 30-2647(-)

To determine the model required for replacement, the following information is needed: upper or lower mounting, number of mounting holes (5 or 8), weight & position installed. Beacons installed on the rudder. Top replacement on Gulfstream II & III require a 9008812 in conjunction with the optional 16 hole mounting plate, P/N 06-170618-00.

| Model # | Approvals | Description | Part # | Price |
|---------|------------------------|---|----------|-------|
| 9008811 | FAA TSO-C96a Class III | Lower, 5 hole, standard assembly, cable pigtail | 11-05004 | . |
| 9008812 | FAA TSO-C96a Class III | Upper, 5 hole, standard assembly, cable pigtail | 11-05005 | . |
| 9008813 | FAA TSO-C96a Class III | Upper, 5 hole, 2.25 lbs. rudder mount (Citations) | 11-07629 | . |
| 9008814 | FAA TSO-C96a Class III | Upper, 5 hole, 2.25 lbs. cable pigtail (Beech Barons) | 11-07630 | . |
| 9008815 | FAA TSO-C96a Class III | Lower, 5 hole, (MS27508E10A-5P connector) | 11-07631 | . |
| 9008816 | FAA TSO-C96a Class III | Upper, 5 hole, (MS27508E10A-5P connector) | 11-07632 | . |
| 9008817 | FAA TSO-C96a Class III | Lower, 5 hole, 2 drain holes (Hawker 800) | 11-07633 | . |
| 9008818 | FAA TSO-C96a Class III | Upper, 8 hole, 1.9 lbs, cable pigtail | 11-07634 | . |
| 9008819 | FAA TSO-C96a Class III | Lower, 8 hole, 1.9 lbs, cable pigtail | 11-07635 | . |



MODEL 90044 SERIES - 90044 series self-contained, 150 watt, quartz halogen flashing anti-collision light. Factory installed on Lear 31, Falcon 900 and Cessna Citation X. It is also a direct replacement for oscillating beacons on most corporate aircraft.

5-Hole **SPECIFICATIONS:** • Weight: 1.6 lbs. (726gm) to 2.5 lbs. (1134gm) • Height: 5.5" (140mm) • Power Consumption: 3.25 amps @ 28 VDC • Replaces: G9950(-), 40-0100(-), 30-2140(-), 40-0117(-), 40-0127(-), 30-2647(-)

To determine model required for replacement, the following information is needed: Lens color (red or white), upper or lower mounting location, number of mounting holes (5, 8, or 9), weight and position installed. Beacons installed on the rudder. Top replacement on GII and GIII require 9004401 or 9004402 in conjunction with the 16 hole mounting plate, P/N 06-170618-00.

| Model # | Approvals | Remarks | Lens | Mount | Base | Part # | Price |
|---------|--------------|---|-------|-------|--------|----------|-------|
| 9004401 | FAA TSO-C96a | Std. Assy | red | upper | 5 hole | 11-03293 | . |
| 9004402 | FAA TSO-C96a | Std. Assy | white | upper | 5 hole | 90044-02 | . |
| 9004403 | FAA TSO-C96a | Std. Assy | red | lower | 5 hole | 90044-03 | . |
| 9004404 | FAA TSO-C96a | Std. Assy | white | lower | 5 hole | 90044-04 | . |
| 9004417 | FAA TSO-C96a | Std. Assy | red | upper | 8 hole | 90064-17 | . |
| 9004418 | FAA TSO-C96a | Std. Assy | white | upper | 8 hole | 90044-18 | . |
| 9004419 | FAA TSO-C96a | Std. Assy | red | lower | 8 hole | 90044-19 | . |
| 9004420 | FAA TSO-C96a | Std. Assy | white | lower | 8 hole | 90044-20 | . |
| 9004435 | FAA TSO-C96a | 2.50 lbs. (Westwind) | red | upper | 8 hole | 90044-35 | . |
| 9004457 | FAA TSO-C96a | 2.25 lbs., cable pigtail (Beech Barons) | red | upper | 5 hole | 11-01968 | . |



MODEL 90033 SERIES SELF-CONTAINED LIGHT ASSEMBLIES - 90033 series self-contained, 150 watt, quartz halogen flashing anti-collision light which is factory installed on Beechcraft. It is also a direct replacement for oscillating beacons on most corporate aircraft.

2-Hole **SPECIFICATIONS:** • Weight: 0.6 lbs.(272gm) to 0.9 lbs. (408gm) • Height: 4.4" (112mm) • Power Consumption: 5.5 amps @ 28 VDC

| Model # | Approvals | Remarks | Lens | Mount | Base | Part # | Price |
|---------|--------------|-------------------------|-------|-------|--------|---------|-------|
| 900331 | FAA TSO-C96a | 18" cable, no connector | red | lower | 2 hole | 90033-1 | . |
| 900332 | FAA TSO-C96a | 18" cable, no connector | white | lower | 2 hole | 90033-2 | . |

EL

WHELEN POSITION LIGHT ASSEMBLIES

MODEL 71105 SERIES LED POSITION LIGHT ASSEMBLY - 71105 series



are fully FAA TSO compliant forward position lights. LED's provide a significant reduction in electrical current draw over conventional light bulbs. The 71105 is our latest design and lowest priced forward position light. Direct replacement for Whelen Model W1285 series (Version STC'd on Learjet Aircraft).

SPECIFICATIONS: • LED Navigation Light Power Consumption: 0.25 amps @ 14 VDC or 28 VDC • LED Colors: Aviation Red, Aviation Green • Weight: 0.20 lbs. (91gm) • 14 VDC, 0.25 lbs. (113gm) 28 VDC • Exposed Height: 2.70" (69mm) • Lens: Clear Polycarbonate

| Model # | Approvals | Description | Part # | Price |
|---------|----------------------|-------------------|----------|-------|
| 7110501 | FAA TSO-C30c Type II | Position grn, 14V | 11-05629 | . |
| 7110502 | FAA TSO-C30c Type I | Position red, 14V | 11-05631 | . |
| 7110503 | FAA TSO-C30c Type II | Position grn, 28V | 11-05632 | . |
| 7110504 | FAA TSO-C30c Type I | Position red, 28V | 11-05634 | . |



MODEL W1285 SERIES - W1285 series wing tip position light which uses a 26-watt incandescent lamp. It is a direct replacement for the brand "G" A1285 series. Specify 14 or 28 VDC.

SPECIFICATIONS: • Weight: 0.2 lbs. (91gm) • Height: 1.25" (32mm) • Length: 4" (102mm) • Power Consumption: 2 amps @ 14 VDC, 1 amp @ 28 VDC

| Model # | Approvals | Description | Part # | Price |
|----------|----------------------|-------------------|----------|-------|
| W1285PG1 | FAA TSO-C30b Type II | 14V, position grn | 11-03226 | . |
| W1285PR1 | FAA TSO-C30b Type I | 14V, position red | 11-03224 | . |
| W1285PG2 | FAA TSO-C30b Type II | 28V, position grn | 11-03891 | . |
| W1285PR2 | FAA TSO-C30b Type I | 28V, position red | 11-03283 | . |



MODEL 71015 SERIES LED FORWARD POSITION LIGHTS - 71015 series are FAA TSO compliant forward position lights. They are compatible with the Whelen W1250 position light mounting as well as any other make that uses the same mounting pattern.

SPECIFICATIONS: • Power Consumption: 0.3 amps @ 28 VDC • LED Color: Aviation Red; and Aviation Green • Weight: 0.2 lbs. (91gm) • Exposed Height: 1.33" (34mm) • Length: 2.41" (61mm)

| Model # | Approvals | Description | Part # | Price |
|---------|----------------------|-------------------|----------|-------|
| 7101501 | FAA TSO-C30c Type II | Grn position, 28V | 11-05011 | . |
| 7101502 | FAA TSO-C30c Type I | Red position, 28V | 11-05012 | . |



MODEL W1250 SERIES - W1250 series wing tip position light is designed for use under a wing tip fairing. It uses a 26 watt incandescent lamp and is a direct replacement for the brand "G" A1815A Series. Specify 14 or 28 VDC.

SPECIFICATIONS: • Weight: 0.3 lbs. (136gm) • Height: 1.25" (32mm) • Length: 2.75" (70mm) • Power Consumption: 2 amps @ 14 VDC, 1 amp @ 28 VDC

| Model # | Approvals | Description | Part # | Price |
|----------|----------------------|--------------------|----------|-------|
| W1250PR1 | FAA TSO-C30b Type I | Position red, 14 V | 11-04264 | . |
| W1250PR2 | FAA TSO-C30b Type II | Position red, 28 V | 11-03282 | . |
| W1250PG1 | FAA TSO-C30b Type I | Position grn, 14 V | 11-04263 | . |
| W1250PG2 | FAA TSO-C30b Type II | Position grn, 28 V | 11-03278 | . |



MODEL A555A SERIES - A555A series tail mounted position light which uses a 25 watt halogen lamp. The suffix "V" or "H" in the part number designates the aircraft mounting screw locations in respect to the light shield. "V" designates vertical mounting and "H" indicates horizontal mounting on the aircraft. Supplied with a 2 position "AMP" connector. Specify 14 VDC or 28 VDC. Replaces the brand "G" A2064 series.

SPECIFICATIONS: • Exposed Height: 1.4" (36mm) • Mounting Diameter: 1.06" (27mm) • Power Consumption: 2 amps @ 14 VDC, 1 amp @ 28 VDC • Weight: 0.1 lbs. (45gm)

| Model # | Approvals | Description | Part # | Price |
|----------|-----------------------|---------------|----------|-------|
| A555AV14 | FAA TSO-C30b Type III | Vert, 14 VDC | 11-03256 | . |
| A555AV28 | FAA TSO-C30b Type III | Vert, 28 VDC | 11-03267 | . |
| A555AH14 | FAA TSO-C30b Type III | Horz., 14 VDC | 11-03270 | . |
| A555AH28 | FAA TSO-C30b Type III | Horz., 28 VDC | 11-03275 | . |



MODEL 90377 SERIES LED POSITION LIGHT ASSEMBLY - 90377 series is a

wing tip mounted position light assembly utilizing LED's for both the forward & tail position lights, eliminating the need for a tail mounted position light. The LED's provide a significant reduction in current draw over conventional position light bulbs. Direct replacement (exact footprint) for the Whelen Model A675PG/PR series. Single set of flying leads operates both forward & tail nav on 28 VDC version, and one set each of flying leads for the forward & tail nav on the 14 VDC version.

SPECIFICATIONS: • LED Navigation Lights Power Consumption: 0.5 amps @ 14 VDC, 0.25 amps @ 28 VDC • LED Colors: Aviation Red, Aviation Green and Aviation White • Weight: 0.35 lbs. (159gm) • Exposed Height: 1.08" (27mm) • Exposed Width: 1.87" (47mm) • Exposed Length: 5.69" (145mm) • Lens: Clear Polycarbonate

| Model # | Approvals | Description | Part # | Price |
|---------|-----------------------------|--------------------|----------|-------|
| 9037701 | FAA TSO-C30c Types II & III | Position grn, 14 V | 11-06175 | . |
| 9037702 | FAA TSO-C30c Types I & III | Position red, 14 V | 11-06176 | . |
| 9037703 | FAA TSO-C30c Types II & III | Position grn, 28 V | 11-06177 | . |
| 9037704 | FAA TSO-C30c Types I & III | Position red, 28 V | 11-06178 | . |



MODEL A675 SERIES - A675 series wing tip position and taillight designed to eliminate the need for a tail mounted position light. It uses a 26 watt incandescent lamp for the forward position light and a 25 watt halogen for the tail position light. Specify 14 or 28 VDC.

SPECIFICATIONS: • Weight: 0.5 lbs. (227gm) • Height: 1.25" (32mm) • Length: 5.62" (143mm) • Power Consumption: 4 amps @ 14 VDC, 2 amps @ 28 VDC

| Model # | Approvals | Description | Part # | Price |
|----------|----------------------------|-------------------|----------|-------|
| A675PG14 | FAA TSO-C30b Type II & III | Position grn, 14V | 11-01895 | . |
| A675PR14 | FAA TSO-C30b Type I & III | Position red, 14V | 11-01896 | . |
| A675PG28 | FAA TSO-C30b Type II & III | Position grn, 28V | 11-01897 | . |
| A675PR28 | FAA TSO-C30b Type I & III | Position red, 28V | 11-01898 | . |



MODEL 71011 SERIES LED TAIL POSITION LIGHTS - 71011 series are LED tail position

lights designed to replace the existing "old style" tail lights typically seen mounted on most general aviation, corporate, and helicopter applications. They have all the advantages associated with using LED's as a light source, improved reliability, and reduced operating costs. Now offered with a 14 Volt version.

SPECIFICATIONS: • Power Consumption: 0.5 amps @ 14 VDC; 0.3 amps @ 28 VDC • LED Color: Aviation White • Weight: 0.2 lbs. (91gm) • Exposed Height: 1.36" (35mm) • Mounting Hole Pattern: 1.75" (45mm)

| Model # | Approvals | Description | Part # | Price |
|---------|-----------------------|-------------|----------|-------|
| 7101102 | FAA TSO-C30c Type III | Vert 28V | 11-05013 | . |
| 7101103 | FAA TSO-C30c Type III | Horz. 28V | 11-05014 | . |
| 7101112 | FAA TSO-C30c Type III | Vert 14V | 11-06325 | . |
| 7101113 | FAA TSO-C30c Type III | Horz. 14V | 11-06326 | . |



MODEL 70966 SERIES - 70966 series LED tail position light, is a high quality, long lasting, modern alternative to incandescent & halogen tail position lights. It offers significant technological upgrades over previous products. Utilizing LED technology, the following advantages are offered: Long Life (approx. 20,000 hours); Reduced Power Consumption (compared to alternative light sources); Shock & Vibration Resistant (no fragile filament to burn out); Light (produces bright white light) and No EMI or RFI Interference. 3 Year

Warranty. **SPECIFICATIONS:** • Exposed Height: 1.64" (42mm) • Length: 2.60" (66mm) • Width: 1.74" (44mm) • Power Consumption: 0.3 amps @ 28 VDC • Weight: 0.3 lbs. (136gm)

| Model # | Approvals | Description | Part # | Price |
|---------|-----------------------|---|----------|-------|
| 7096600 | FAA TSO-C30c Type III | 28 VDC - no connectors | 11-01228 | . |
| 7096601 | FAA TSO-C30c Type III | 28 VDC - connectors, case ground used on Beechjet | 11-07699 | . |

NOTE: All non-FAA approved whelwn parts are signified by a (—) in the approval column. Parts without FAA approval may still be purchased, however, installation of these parts on U. S. Type Certificated products may require additional FAA approvals.

EL

WHELEN EXTERIOR & INTERIOR LIGHTING



READING LIGHT - The Model A325 ML reading light will replace original equipment on 14 volt Piper aircraft. It is designed for passenger convenience and is equipped with an on/off slide switch. Specify voltage (14V or 28V). 14V P/N 11-03294
28V P/N 11-03682



COMPARTMENT FLOODLIGHT - The Model A325 FL is a floodlight for compartmental flooding and general lighting. It is equipped with an on/off slide switch. Specify voltage. 14V P/N 11-03681
28V P/N 11-03656



OVERHEAD CABIN LIGHT - The Model A360 is designed for recessed overhead lighting. Aluminum housing & Pyrex lens. Weight: 0.25 Lb. 14V P/N 11-03685
28V P/N 11-03686



MODEL 71144 'GOOSENECK' LED LIGHT ASSEMBLY - 71144 assembly features a positive off position and rheostat controlled light intensity. Models including 'side' mounted intensity control are which is designed for the S76D. 28 VDC Only. **SPECIFICATIONS:** • Power Consumption: 0.06 amps @ 28 VDC • LED Colors: Aviation White • Weight: 0.46 lbs. (209gm) • Black Nylon Hood: fixed in position

| Model # | Approvals | Description | Part # | Price |
|----------|-----------|-------------------------------|----------|-------|
| 7114416 | — | 16" adj map light, 28V - Wht | 11-07701 | . |
| 70190R12 | — | 16" adj map light, 28V - Red | 11-07731 | . |
| 70190B12 | — | 16" adj map light, 28V - Blue | 11-07732 | . |



MODEL 70844 SERIES LED POST LIGHTS - The model 70844 series are LED (Light Emitting Diode) instrument post light assemblies. They are designed to illuminate the instrument panel, and function as instrument mounting bolts. It is a high quality, long lasting, modern alternative to standard incandescent post lights. They offer significant technological upgrades over existing products. Utilizing LED technology, the following advantages are offered:

- Long life - approximately 20,000 hours.
- Reduced power consumption - compared to alternative light sources
- Shock and vibration resistant, no fragile filament to burn out
- Light - produces bright white light.
- No EMI or RFI interference

Specifications: • Wt.: .03 lbs. • Exposed Height: 1" w/o spacer • Width: 1.74 • Power consumption: .02 amps @ 14 V / .02 Amps @ 28V

| Model No. | Whelen P/N | Description | Part No. | Price |
|-----------|---------------|----------------|----------|-------|
| 7084400 | 01-0770844-00 | 14V, 1.0" post | 11-01215 | . |
| 7084401 | 01-0770844-01 | 14V, 1.5" post | 11-01216 | . |
| 7084402 | 01-0770844-02 | 28V, 1.0" post | 11-01217 | . |
| 7084403 | 01-0770844-03 | 28V, 1.5" post | 11-01218 | . |



A350 WHELEN POST LIGHTS - For illuminating instrument face. The 1" long 8-32 threaded shank serves as instrument mounting screw. Terminal on end of shank mates with threaded connector on insulated wire lead. Overall length 1-7/8". Blue tinted filter or red filter. With #330 (12V) or #327 (24V) bulb. **Order by Part No. ALL.....ea**

| Description | WHELEN P/N | OUR P/N |
|-----------------------|----------------|----------|
| White 14V (Blue Tint) | A350CNIWBKSH14 | 11-03205 |
| White 28V (Blue Tint) | A350CNIWBKSH28 | 11-03210 |
| Red 14V | A350CNRDBKSH14 | 11-03214 |
| Red 28V | A350CNRDBKSH28 | 11-03253 |



A715-1 LANDING LIGHT
The Model A715-1 landing light is standard equipment on new Beechcraft, and will retrofit into older aircraft, as well. Accommodates PAR 36 sealed beam lamp. Order lamp separately (#4509 - 100W, 12V; #4594 or #4613 100W, 24V; Wt. 1/2 lb. Size: 4-3/4" dia. x 6-1/2" long x 2-1/8" deep.
P/N 11-03281



MODEL 71141 SERIES LED LANDING LIGHT (INTERNAL MOUNT) PAR-36 STYLE - 71141 series is a self-contained all LED landing light assembly. The design is intended to provide a solution to the needs for a taxi & landing light on a wide variety of aircraft.

All current source and electronic circuitry is contained within the housing. Unit is available in several mounting configurations to retrofit existing typical PAR-36 lighting. Unit is designed to be mounted internally behind existing lens. Item ships with flying leads. Contact your OEM for installation eligibility on your aircraft.

SPECIFICATIONS: • Power Consumption: 1.5 amps @ 28 VDC • Weight: 1.0 lbs. (454gm) • Exposed Diameter: 4.46" (113mm), Overall Depth: 1.90" (48mm) • Lens: Clear Polycarbonate

| Model # | Approvals | Description | Part # | Price |
|---------|-----------|---|----------|-------|
| 7114112 | — | LED landing/taxing light internal mount | 11-06185 | . |
| 7114122 | — | LED landing/taxing light internal mount | 11-06186 | . |



MODEL 90361 SERIES LED LANDING LIGHT (EXTERNAL MOUNT) PAR-36 STYLE - 90361 series is a self-contained all LED landing light assembly. The design is intended to provide a solution to the needs for a taxi & landing light on a wide variety of aircraft. All current source and electronic circuitry is contained within the housing. Unit is available in several mounting configurations to retrofit existing typical PAR-36 lighting. Outer lens allows for mounting externally on aircraft, option of diffusion lens available upon request. Item ships with flying leads. Contact your OEM for installation eligibility on your aircraft. **SPECIFICATIONS:** • Power Consumption: 1.5 amps @ 28 VDC • Weight: 1.3 lbs. (590gm) • Exposed Diameter: 4.70" (119mm), Overall • Depth: 2.87" (73mm) • Lens: Clear Polycarbonate

| Model # | Approvals | Description | Part # | Price |
|---------|-----------|---|----------|-------|
| 9036110 | — | "U" bracket mounting | 11-06181 | . |
| 9036115 | — | LED taxi, assy with spreader optic, 14V | 11-06182 | . |
| 9036120 | — | "U" bracket mounting | 11-06183 | . |
| 9036125 | — | LED taxi, assy with spreader optic, 28V | 11-06184 | . |



MODEL 71125 SERIES LED RECOGNITION LIGHT - 71125 series LED recognition light is designed to provide supplemental lighting for a wide variety of aircraft applications. Provides all of the advantages of LED's as a light source, no EMI/RFI, low current draw, low heat, long life. Perfect for vibration prone areas. Item ships with flying leads. Several different beam spreads available. Designed to replace the Whelen A775 series. Version containing integrated MS connector also available. Can be used in conjunction with 71115 Flasher control assembly. Contact your OEM for installation eligibility on your aircraft. **SPECIFICATIONS:** • Power Consumption: 0.9 amps @ 14 Volts, 0.45 amps @ 28 Volts • Lens: Clear polycarbonate • LED Color: Aviation White • Weight: 0.3 lbs. (136gm) • Overall Width: 3.25" (83mm) □ Overall Depth: 1.25" (32mm) • Overall Height: 1.95" (50mm)

with flying leads. Several different beam spreads available. Designed to replace the Whelen A775 series. Version containing integrated MS connector also available. Can be used in conjunction with 71115 Flasher control assembly. Contact your OEM for installation eligibility on your aircraft. **SPECIFICATIONS:** • Power Consumption: 0.9 amps @ 14 Volts, 0.45 amps @ 28 Volts • Lens: Clear polycarbonate • LED Color: Aviation White • Weight: 0.3 lbs. (136gm) • Overall Width: 3.25" (83mm) □ Overall Depth: 1.25" (32mm) • Overall Height: 1.95" (50mm)

| Model # | Approvals | Description | Part # | Price |
|---------|-----------|-----------------------------|----------|-------|
| 7112510 | — | 10 degree beam pattern, 14V | 11-06164 | . |
| 7112511 | — | 20 degree beam pattern, 14V | 11-06165 | . |
| 7112512 | — | 90 degree beam pattern, 14V | 11-06166 | . |
| 7112513 | — | 30 degree beam pattern, 14V | 11-07702 | . |
| 7112520 | — | 10 degree beam pattern, 28V | 11-06167 | . |
| 7112521 | — | 20 degree beam pattern, 28V | 11-06168 | . |
| 7112522 | — | 90 degree beam pattern, 28V | 11-06169 | . |
| 7112523 | — | 30 degree beam pattern, 28V | 11-07703 | . |



MODEL A775 SERIES - A775 series recognition light assembly which produces up to 22,000 beam candlepower using only a 35 watt lamp. **SPECIFICATIONS:** • Drawing Number: 70110 • Weight: 0.14 lbs. (64gm) • Width: 3.25" (83mm) • Height: 1.75" (44mm) • Depth: 2.25" (57mm) • Power Consumption: 2.5 amps @ 14 VDC, 1.25 amps @ 28 VDC

| Model # | Approvals | Description | Part # | Price |
|---------|-----------|------------------------------|----------|-------|
| 7011001 | FAA/PMA | Molex connector (Piper), 14V | 11-07704 | . |
| 7011002 | FAA/PMA | Molex connector (Piper), 28V | 11-07705 | . |
| A77514 | — | 12" leads, 14 VDC | 11-03741 | . |
| A77528 | — | 12" leads, 28 VDC | 11-03742 | . |



INSTALLATION CABLE KITS - Cable kits include all required connectors for hooking up the strobe light to the power supply only. Warning placards and the Installation Service manual is included also. All cable is 16 gauge 3/C shielded. The cable diameter is .275" (7mm). Weight is .050 lbs. per linear foot. (Kits do not include switches or breakers)

| Model # | Approvals | Description | Part # | Price |
|---------|-----------|------------------|----------|-------|
| HS5 | — | 5' Cable kit | 11-04204 | . |
| HT10 | — | 10' Cable kit | 11-03253 | . |
| HS30 | — | 30' Cable kit | 11-03285 | . |
| HD60 | — | 60' Cable kit | 11-02667 | . |
| HDT390 | — | 90' Cable kit | 11-02668 | . |
| HT | — | Install kit only | 11-02669 | . |

REPLACEMENT CONNECTORS - Replacement connector kits and assemblies for cables.

| Model # | Approvals | Description | Part # | Price |
|---------|-----------|--------------------------------------|----------|-------|
| A441 | — | 3 Position male with pins kit | 11-03211 | . |
| A442 | — | 3 Position female with sockets kit | 11-03212 | . |
| A444 | — | 2 Position male with pins ass'y | 11-03700 | . |
| A446 | — | 2 Position female with sockets ass'y | 11-03702 | . |
| A447 | — | 4 Position male with pins | 11-07706 | . |
| A448 | — | 4 Position female with sockets | 11-07707 | . |

CRIMP TOOL - Pin and socket crimping tool.

| Model # | Approvals | Description | Part # | Price |
|---------|-----------|---------------------------------------|----------|-------|
| CRIMPAV | — | Pin/socket crimping tool, MILBAR #25E | 11-07708 | . |

EL

WHELEN STROBE SYSTEMS



WHELEN LED STROBE SYSTEM #1

LED Navigation and White LED Tail Light with Strobe Anti-Collision Light. **Whelen Strobe System #1 LED 14V Kit Includes:** 1 ea. Whelen Green LED Navigation 14V 9034003 1 ea. Whelen Red LED Navigation 14V 9034004 1 ea. Whelen A413A,HDA-CF 14/28V 1 ea. Whelen HD60 Power Supply Installation Kit 14V Kit..... P/N 11-07596.....
28v Kit..... P/N 11-07711.....

WHELEN LED STROBE SYSTEM #2

LED Navigation and White LED Tail Light with Strobe Anti-Collision Light. **Whelen Strobe System #2 LED 14V Kit Includes:** 1 ea. Whelen Green LED Navigation 14V 9034001 1 ea. Whelen Red LED Navigation 14V 9034002 2 ea. Whelen A490A, TS, CF 14V-28V 1 ea. Whelen Power Install Info Pack

14V Kit..... P/N 11-05646.....
28V Kit..... P/N 11-05647.....



WHELEN LED STROBE SYSTEM #4

LED Navigation with Strobe Anti-Collision Light **Whelen Strobe System #4 LED Navigation 14V Model 711 Series Kit Includes:** 1 ea. Whelen Green LED Navigation 14V 7111001 1 ea. Whelen Red LED Navigation 14V 7111002 2 ea. Whelen A490A, TS, CF 14V-28V 1 ea. Whelen Power Install Info Pack 14V Kit..... P/N 11-05639.....
28V Kit..... P/N 11-05640.....

WHELEN LED STROBE SYSTEM #4A

LED Navigation with Strobe Anti-Collision Light. **Whelen Strobe System #4A LED Navigation 14V Model 711 Series Kit Includes:** 1 ea. Whelen Green LED Navigation 14V 7111001 1 ea. Whelen Red LED Navigation 14V 7111002 2 ea. Whelen A490T, TS, CF 14V-28V 1 ea. Whelen Power Install Info Pack

14V Kit..... P/N 11-05641.....
28V Kit..... P/N 11-05642.....

WHELEN LED STROBE SYSTEM #5

LED Navigation with Strobe Anti-Collision Light. **Whelen Strobe System #5 LED Navigation 14V Model 711 Series Kit Includes:** 1 ea. Whelen Green LED Navigation 14V 7111001 1 ea. Whelen Red LED Navigation 14V 7111002 1 ea. Whelen A413A, HDA-CF 14V/28V 1 ea. Whelen Power Supply HD60 Installation

14V Kit..... P/N 11-05648.....
28V Kit..... P/N 11-05649.....



STROBE SYSTEMS WITH A600-PG/PR STROBE/NAV LIGHTS

NO. 1 Two A600-PG/PR Wingtip Strobe Lights, (1) A413A-HDA-CF-14/28, remote mounted Power Supply (400 Effective Candles) and HD-60 Installation Kit.

P/N 11-03000 (14V)..... P/N 11-03100 (28V).....

NO. 2 Two A600-PG/PR Wingtip Strobe Lights, (2) A490A,TS,CF Power Supplies (400 Effective Candles) and HT Installation Kit.

P/N 11-03200 (14V).....



STROBE SYSTEMS WITH A650-PG/PR STROBE/NAV LIGHTS

NO. 4 TWO LIGHT SYSTEM (With Local Power Supplies) - (2) A650-PG/PR Wingtip Strobe Lights, (2) A490A, TS, CF, Power Supplies (400 Effective Candles) and HT Information Packet.

14V..... P/N 11-03600..... 28V..... P/N 11-03610.....
(Same Kit but w/A490T, CF Power Supplies below)

14V..... P/N 11-03605..... 28V..... P/N 11-03615.....

NO. 5 TWO LIGHT SYSTEM (With Remote Power Supply) - (2) A650-PG/PR Wingtip Strobe Lights, (1) 413A,HDA-CF-14/28,CF remote mounted Power Supply (400 Effective Candles) & HD-60 Installation Kit.

14V..... P/N 11-03800.....
28V..... P/N 11-03805.....

NO. 6 THREE LIGHT SYSTEM (With Local Power Supplies) - Two A650-PG/PR Wingtip Strobe Lights, one A500 Tail Position/Strobe Light, (vertical) three A490A,TS,CF Power Supplies (400 Effective Candles Wingtip Strobes, 300 Effective Candles Tail Strobe) and HT Information Packet.

14V (A-500-Vert) P/N 11-04000-14-V.....
14V (A-500-Hor) P/N 11-04000-14-H.....

28V (A-500-Vert) P/N 11-04000-28-V.....
28V (A-500-Hor) P/N 11-04000-28-H.....

(Same Kit but w/A490T, CF Power Supplies below)

14V (A-500-Vert) P/N 11-04010-14-V.....
14V (A-500-Hor) P/N 11-04010-14-H.....

28V (A-500-Vert) P/N 11-04010-28-V.....
28V (A-500-Hor) P/N 11-04010-28-H.....

NO. 7 THREE LIGHT SYSTEM (With Remote Power Supply) - (2) A650-PG/PR Wingtip Strobe Lights, (1) A500 Tail Position/Strobe Light, (vertical) one A413A,HDA-CF-14/28 remote-mounted Power Supply (400 Effective Candles Wingtip Strobes, 330 Effective Candles Tail Strobe) & HD,T3-90 Installation Kit.

14V..... P/N 11-04400.....
28V..... P/N 11-04500.....



STROBE SYSTEMS WITH A650 STROBES

NO. 8 TWO LIGHT SYSTEM (WITH LOCAL POWER SUPPLIES)
(2)A650 Wingtip Strobe Lights,
(2) A490A,TS,CF Power Supplies (400 Effective Candles)
HT Information Packet.

P/N 11-04600 (14-28V).....

Same but w/A490T, CF Power Supplies.

P/N 11-04605 (14-28V).....

NO. 9 TWO LIGHT SYSTEM (WITH REMOTE POWER SUPPLY)

(2) A650 Wingtip Strobe Lights
(1) A413A,HDA-CF-14/28 remote-mounted Power Supply (400 Effective Candles)

HD-60 Installation Kit..... P/N 11-04800 (14-28V).....

NO. 10 THREE LIGHT SYSTEM (WITH LOCAL POWER SUPPLIES)

(2) A650 Wingtip Strobe Lights
(1) A500 Tail Position/Strobe Light, (vertical)
(3) A490A,TS, CF Power Supplies (400 Effective Candles Wingtip Strobes, 300 Effective Candles Tail Strobe)
HT Info Packet.

| Part No. | Description | Price |
|--|------------------------|-------|
| 11-05000-14-V | A-500-Verticle - 14V | . |
| 11-05000-14-H | A-500-Horizontal - 14V | . |
| 11-05000-28-V | A-500-Verticle - 28V | . |
| 11-05000-28-H | A-500-Horizontal - 28V | . |
| Same Kit but with A490T,CF Power Supplies | | |
| 11-05001-14-V | A-500-Verticle - 14V | . |
| 11-05001-14-H | A-500-Horizontal - 14V | . |
| 11-05001-28-V | A-500-Verticle - 28V | . |
| 11-05001-28-H | A-500-Horizontal - 28V | . |

NO. 11 THREE LIGHT SYSTEM (WITH REMOTE POWER SUPPLY)

(2) A650 Wingtip Strobe Lights
(1) A500 Tail Position/Strobe Light
(1) A413A,HDA-CF-14/28 remote-mounted Power Supply (400 Effective Candles)
HD,T3-90 Installation Kit.

| Part No. | Description | Price |
|---------------|------------------------|-------|
| 11-05400-14-V | A-500-Verticle - 14V | . |
| 11-05400-14-H | A-500-Horizontal - 14V | . |
| 11-05400-28-V | A-500-Verticle - 28V | . |
| 11-05400-28-H | A-500-Horizontal - 28V | . |



Homebuilders WHELEN STROBE KIT

This compact, lightweight strobe kit is very popular with builders of a variety of todays homebuilt aircraft. Kit includes: 2-A610 flash tube assys., 2-A612 magnifying lenses, 2-A490T,CF power supplies and 1-HT installation Kit.

P/N 11-00923.....

CUSTOM LOW ENERGY SYSTEM

Popular with Long-EZ, Q2, Q200 builders and others using a lightweight, low amperage generator or alternator. It consists of: (2) A600-PG/PR Wingtip Strobe Lights, (1) A413A, HDS-14/28 (Single Flash 20 Joules) remote mounted Power Supply, HD-60 Installation Kit (Draws less than 4A - 14V & produces 400 effective Candles.)

Kit # 11-05600

P/N 11-05600.....



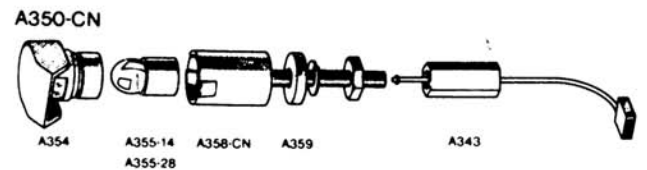
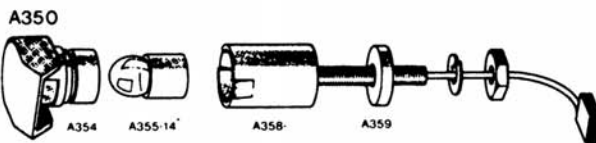
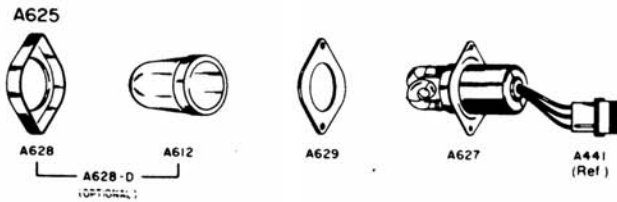
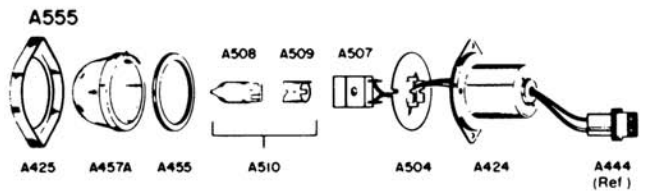
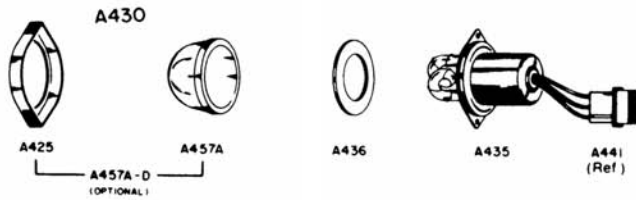
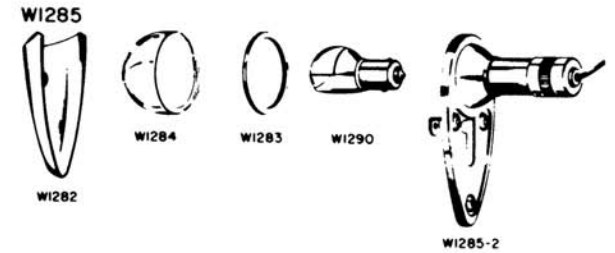
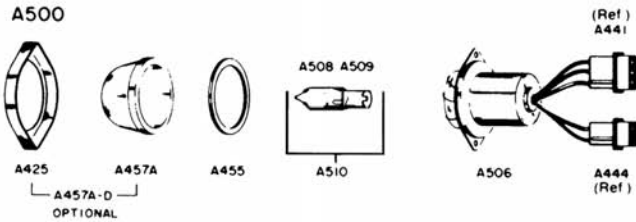
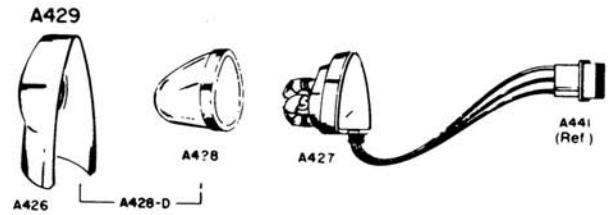
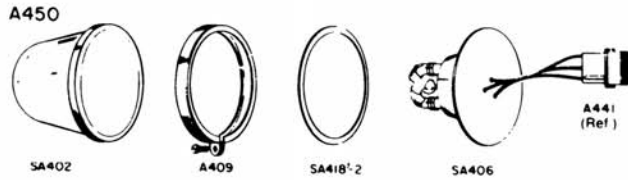
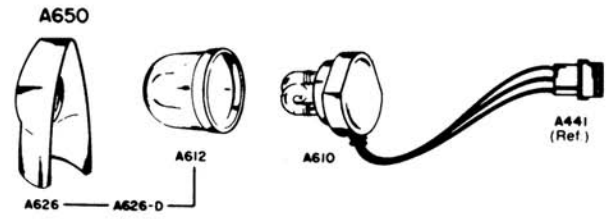
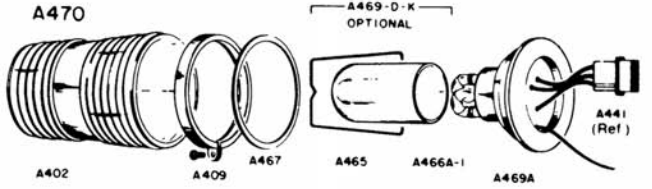
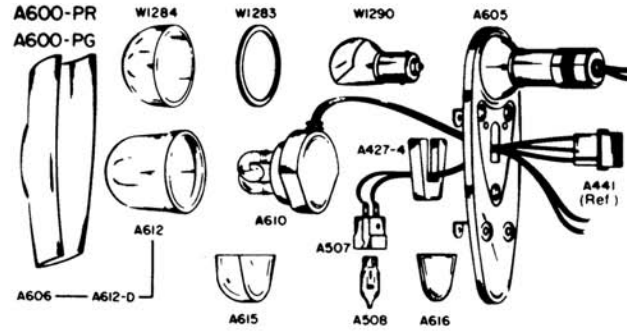
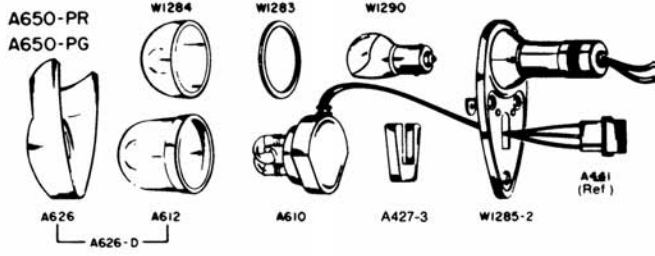
WHELEN STROBE TESTER

Designed to determine whether power supply is operating normally. Kit contains troubleshooting procedures. Also contains adapter for testing some Grimes and Hoskins strobe light systems.

P/N 11-06800.....

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WHELEN STROBE LIGHTS



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WHELEN STROBES

STROBE SYSTEM PARTS

| Model # | Description | Part No. | Price |
|----------------|---|----------|-------|
| A402R | Red Optic Lens | 11-03254 | . |
| A402W | White Optic Lens | 11-03271 | . |
| A402R/W | Split Red/White Optic Lens | 11-03248 | . |
| A406 | Flash Tube Assembly | 11-03687 | . |
| A409 | Clamp Ring Assembly | 11-03688 | . |
| A414A, HDH, CF | HDH,CF Power Supply | 11-03632 | . |
| A417-1 | Interconnecting Cable | 11-03658 | . |
| A421-1 | Warning Decal | 11-03691 | . |
| A425 | Tail Strobe Lens Retainer | 11-03692 | . |
| A426 | Wingtip Strobe Lens Retainer | 11-03233 | . |
| A427 | Flash Tube Assembly | 11-03219 | . |
| A427-M | Flash Tube Assembly with Molex Connector | 11-03272 | . |
| A427-4 | Rubber Pad Spacer | 11-03693 | . |
| A428 | Wingtip Strobe Lens | 11-03236 | . |
| A428-C | Wingtip Strobe Radio Shielded Lens | 11-03694 | . |
| A428-D | Wingtip Strobe Radio Shielded Lens plus A426 Retainer assy. | 11-03290 | . |
| A429 | Wingtip Strobe Head Assembly (Replaced by A650) | 11-03695 | . |
| A430 | Tail Strobe Head Assembly | 11-03696 | . |
| A435 | Flash Tube Assembly | 11-03697 | . |
| A440 | WRM-65 Mounting Adapter, for HR,DF & SA,DF | 11-03699 | . |
| A441 | AMP Connector and 3 Pins | 11-03211 | . |
| A442 | AMP Connector and 3 Sockets | 11-03212 | . |
| M441 | Molex Connector and 3 Pins for Piper Installation | 11-04215 | . |
| M442 | Molex Connector and 3 Sockets for Piper Installation | 11-04216 | . |
| A444 | AMP Connector and 2 Pins | 11-03700 | . |
| M444 | Molex Connector and 2 Pins for Piper Installation | 11-04217 | . |
| A445 | Switch Label | 11-03701 | . |
| A446 | AMP Connector and 2 Sockets | 11-03702 | . |
| A450 | Strobe Head Assembly | 11-03280 | . |
| A455 | Gasket | 11-03703 | . |
| A457A | Tail Light Lens for A500 and A555 | 11-03227 | . |
| A457A-D | Radio Shielded Tail Light Lens Assembly for A500 | 11-03704 | . |
| A465 | Spring | 11-03707 | . |
| A466A-1 | Radio Shielded Lens | 11-03708 | . |
| A467 | Gasket for A470 | 11-03709 | . |
| A469B | Flash Tube Assembly | 11-03225 | . |
| A469D-K | Radio Shielded Kit for A469A | 11-03711 | . |

| Model # | Description | Part No. | Price |
|----------------|---|----------|-------|
| A470-D | Radio Shielded Remote Strobe Head Assembly, Specify Color | 11-03291 | . |
| A470-A-D-S | Strobe Head Assembly, Shielded Red/White | 11-04976 | . |
| A470-D-R-SU | Radio Shielded Remote Strobe | 11-03714 | . |
| A490 TC CF | 14V Power Supply | 11-02661 | . |
| A490 TC CF | 28V Power Supply | 11-06406 | . |
| A500-V-D-14 | 14V Radio Shielded Tail Position Strobe Light Head Assy. Vertical Mount | 11-03721 | . |
| A500-V-D-28 | 28V Radio Shielded Tail Position Strobe Light Head Assy. Vertical Mount | 11-06407 | . |
| A500-H-D-14 | Radio Shielded Tail Position & Strobe Light Head Assembly Horizontal Mount | 11-03717 | . |
| A500-H-D-28 | Radio Shielded Tail Position & Strobe Light Head Assembly Horizontal Mount | 11-06327 | . |
| A500-V-D-M-14 | Radio Shielded Tail Position & Strobe Light Head Assembly Vertical Mount with Molex Connector | 11-03722 | . |
| A500-V-D-M-28 | Radio Shielded Tail Position & Strobe Light Head Assembly Vertical Mount with Molex Connector | 11-06329 | . |
| A500-H-D-M-14 | Radio Shielded Tail Position & Strobe Light Head Assembly Horizontal Mount with Molex Connector | 11-03719 | . |
| A500B-V-14 | Tail Position & Strobe Light Head Assembly (Beech) | 11-03715 | . |
| A500B-V-28 | Tail Position & Strobe Light Head Assembly (Beech) | 11-06330 | . |
| A500SP-28 | Tail Pos. & Strobe Assy. (Beech) | 11-03720 | . |
| A502 | Flash Tube & Socket Assembly | 11-03723 | . |
| A506 | Flash Tube & Socket Assembly | 11-03274 | . |
| A506-B | Flash Tube & Socket Assembly | 11-03724 | . |
| A506-M | Flash Tube & Socket Assembly | 11-03725 | . |
| A506-SP | Flash Tube & Socket Assembly | 11-03726 | . |
| A507 | Lamp Socket Assembly for A555 | 11-03240 | . |
| A508-14 | Halogen Lamp for A500,A555, A600 | 11-03216 | . |
| A508-28 | Halogen Lamp for A500,A555, A600 | 11-03208 | . |
| A509 | Lamp Shield for A500 and A555 | 11-03727 | . |
| A510-14 | Lamp Assembly for A500 & A555 | 11-03728 | . |
| A510-28 | Lamp Assembly for A500 & A555 | 11-06332 | . |
| A512-V-28 | Tail Position & Strobe Light Head Assembly (Gulfstream Commander) | 11-03729 | . |
| A540 | Long Mounting Adapter | 11-03730 | . |
| A600-PG-D-14 | Radio Shielded Wingtip Strobe Light with Forward & Tail Position Light Assembly | 11-03636 | . |
| A600-PG-D-28 | Radio Shielded Wingtip Strobe Light with Forward & Tail Position Light Assembly | 11-03732 | . |
| A600-PG-D-M-28 | Radio Shielded Wingtip Strobe Light w/ Forward & Tail Position Light Assembly (Molex Connector) | 11-03732 | . |
| A600-PR-D-M-14 | Radio Shielded Wingtip Strobe Light w/ Forward & Tail Position Light Assembly (Molex Connector) | 11-03638 | . |
| A600-PR-D-M-28 | Radio Shielded Wingtip Strobe Light w/ Forward & Tail Position Light Assembly (Molex Connector) | 11-06335 | . |
| A605 | Base Plate Assembly | 11-03733 | . |
| A606 | Retainer | 11-03260 | . |
| A610 | Flash Tube Assembly | 11-03213 | . |
| A610-M | Flash Tube Assembly | 11-03734 | . |
| A612 | Magnifying Lens | 11-03222 | . |
| A612-D | Radio Shielded Lens Retainer Assembly | 11-03735 | . |
| A615 | Lens for A600 Tail Light | 11-03230 | . |
| A616 | Gasket for A600 Tail Light | 11-03261 | . |
| A625 | Tail Strobe Head | 11-03228 | . |
| A625-D | Radio Shielded Tail Strobe Head Assembly | 11-03659 | . |
| A626 | Retainer Lens | 11-03229 | . |
| A626-D | Radio Shielded Lens Retainer Assy. | 11-03736 | . |
| A627 | Flash Tube Assembly | 11-03263 | . |
| A628 | Retainer Lens | 11-03737 | . |
| A629 | Gasket | 11-03660 | . |
| A650 | Wingtip Strobe Head Assembly | 11-03215 | . |

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WHELEN STROBES

| Model # | Description | Part No. | Price |
|----------------|---|----------|-------|
| A650-PG-D-14 | Wingtip Position & Strobe (Radio Shielded) Head Assy. | 11-03639 | . |
| A650-PG-D-28 | Wingtip Position & Strobe (Radio Shielded) Head Assy. | 11-06336 | . |
| A650-PR-D-14 | Wingtip Position & Strobe (Radio Shielded) Head Assy. | 11-03642 | . |
| A650-PR-D-28 | Wingtip Position & Strobe (Radio Shielded) Head Assy. | 11-06337 | . |
| A650-PG-D-M-28 | Radio Shielded Wingtip Strobe & Position Light Head Assemble w/ Molex Connector . | 11-06338 | . |
| A730 | Tail Flood Light Assembly | 11-03740 | . |
| A1610-14 | Power Supply | 11-03665 | . |
| C-70178-1 | Power Supply (Single Flash) | 11-04132 | . |
| C-70188-1 | Power Supply | 11-04133 | . |
| C-70190-1 | Goose Neck Light (12" Long) | 11-04134 | . |
| 70285-1 | Self Contained Strobe RadioShielded Red | 70285-1 | . |
| 70285-2 | Self Contained Strobe Radio Shielded Red with Mask | 70285-2 | . |
| 70285-3 | Self Contained Strobe White | 70285-3 | . |
| 70285-5 | Self Contained Strobe Red | 70285-5 | . |
| 70285-6 | Self Contained Strobe Radio Shield Red with Mask | 70285-6 | . |
| 70294-1 | Power Supply | 70294-1 | . |
| H102 | "B" Mounting Adapter | 11-03243 | . |
| H103 | "A" Mounting Adapter 3-3/4" | 11-03284 | . |
| HR-CF200-14 | 14V Power supply for HR or SA | 11-03838 | . |
| SA402 | Lens Assembly for SA & A450 | 11-04259 | . |
| SA406 | Flash Tube Assembly for SA & A450 | 11-03250 | . |
| W1282 | Forward Position Light Lens Retainer | 11-03232 | . |
| W1283 | Forward Position Light Gasket | 11-03209 | . |
| W1284-G | Forward Position Light Lens (Green) | 11-03206 | . |
| W1284-R | Forward Position Light Lens (Red) | 11-03207 | . |
| W1285-2 | Forward Position Light Base | 11-03244 | . |
| W1290-14 | 14 Volt Position Light Bulb | 11-02602 | . |
| W1290-28 | 28 Volt Position Light Bulb | 11-02604 | . |
| 90029-1 | Combination Wing-tip Light Assy. | 90029-1 | . |
| 90029-2 | Combination Wing-tip Light Assy. | 90029-2 | . |
| 90029-3 | Combination Wing-tip Light Assy. | 90029-3 | . |
| 90029-4 | Combination Wing-tip Light Assy. | 90029-4 | . |
| 90033-1 | Anti Collision Beacon Assy. Red | 90033-1 | . |
| 90033-2 | Anti Collision Beacon Assy. White | 90033-2 | . |
| 34-0226010-91 | Lamp Quartz 150 Watt | 11-05091 | . |

INTERIOR LIGHTING

| Model # | Description | Part No. | Price |
|--------------|-----------------------------------|----------|-------|
| A300-14 | 14V Map Light Assembly | 11-03673 | . |
| A300-28 | 28V Map Light Assembly | 11-03674 | . |
| A315-HI-B-14 | 14V Cockpit Utility Light | 11-03675 | . |
| A315-LO-B-14 | 14V Cockpit Utility Light | 11-03679 | . |
| A315-LO-B-28 | 28V Cockpit Utility Light | 11-03680 | . |
| A325-FL-14 | 14V Flood Light Assembly | 11-03681 | . |
| A325-FL-28 | 28V Flood Light Assembly | 11-03656 | . |
| A325-ML-14 | 14V Reading Light Assembly | 11-03294 | . |
| A325-ML-28 | 28V Reading Light Assembly | 11-03682 | . |
| *A350-14 | 14V Post Light Assembly | 11-03205 | . |
| *A350-28 | 28V Post Light Assembly | 11-03210 | . |
| A360-14 | 14V Dome Light Assembly Overhead | 11-03685 | . |
| A360-28 | 28V Dome Light Assembly Overhead | 11-03686 | . |
| A360SW | Dome Light Assembly w/Switch | 11-03629 | . |
| 70339-1 | Floodlight Assembly (14V) | 70339-1 | . |
| 70339-02 | Floodlight Assembly (28V) | 70339-02 | . |
| 70339-03 | Floodlight Assembly (14V Switch) | 70339-03 | . |
| 70339-04 | Floodlight Assembly (28V Switch) | 70339-04 | . |
| 70348-00 | Post Light (28V 10-32Thread) (IW) | 70339-00 | . |
| 70348-01 | Post Light (28V 10-32Thread) (RD) | 70339-01 | . |

PARTS FOR POST LIGHTS

| Model # | Description | Part No. | Price |
|---------|--------------------|----------|-------|
| A343 | Connector Assembly | 11-03252 | . |
| *A354 | Head Assembly | CALL | . |
| *A358 | Base Assembly | CALL | . |
| A359 | Spacer | 11-03684 | . |

* Requires dash numbers for lens color and finish. Please contact factory.
‡ For complete information contact factory.

RECOGNITION LIGHT & LANDING LIGHT

| Model# | Description | Part No. | Price |
|---------------|---|---------------|-------|
| A715-1 | 14V Fixed Landing Light (PAR 36) | 11-03281 | . |
| A775-14 | 14V Recognition Light 35 Watt | 11-03741 | . |
| A775-28 | 28V Recognition Light 35 Watt | 11-03742 | . |
| A775-EXP-14 | 14V - Recognition Light 35W Explosion Proof | 11-03648 | . |
| A777 | Lens for A775-EXP | 11-03649 | . |
| 70346-00 | Recognition Light (14V No Lens) | 70346-00 | . |
| 70346-01 | Recognition Light (28V No Lens) | 70346-01 | . |
| 70346-02 | Recognition Light (14V Clear Lens) | 70346-02 | . |
| 70346-03 | Recognition Light (28V Clear Lens) | 70346-03 | . |
| 70346-04 | Recognition Light (14V Optic Lens) | 70346-04 | . |
| 70346-05 | Recognition Light (28V Optic Lens) | 70346-05 | . |
| 01-0790095-02 | Fixed Landing Light (PAR 46) | 01-070095-02 | . |
| 38-0240063-00 | Sealed Beam Gasket (PAR 46) | 11-05103 | . |
| 38-0240197-01 | Sealed Beam Gasket (PAR 36) | 38-0240197-01 | . |
| 19-270407-000 | Clamp Ring (PAR 46) | 19-270407-000 | . |
| 19-250147-000 | Clamp Ring (PAR 36) | 19-250147-00 | . |

SURFACE ILLUMINATING LIGHTS

| Model # | Description | Part No. | Price |
|---------|----------------------------|----------|-------|
| A708-28 | 28V Halogen Lamp (50 Watt) | 11-00023 | . |
| A750 | Flasher Assembly | 11-00024 | . |

PARTS FOR ROTATING BEACON

Rotating Beacon Replacement- The round mechanical rotating beacon was used on the vertical fin of all Barons from 1961 thru 1969. Models using this light are 95-55 (1961), A55 (1968-1969). Note: The B55 Baron continued to use this beacon until production stopped in 1982.

| Model# | Description | Part No. | Price |
|--------|-------------|----------|-------|
| WRM-10 | Lexan Dome | 11-03257 | . |
| WRM-25 | Clamp Ring | 11-04272 | . |
| WRM-30 | Gasket | 11-04273 | . |

MISCELLANEOUS HARDWARE

| Model# | Description | Part No. | Price |
|---------|------------------------|----------|-------|
| GLJ-106 | Lamp Retainer | 11-03811 | . |
| GLJ-111 | Lamp Assembly | 11-03812 | . |
| GLJ-126 | Lens Retainer Assembly | 11-03813 | . |

EL

ELECTRONIC ACCESSORIES

VOLT AND VAC ALERT



*Provides an instantly recognizable voice warning directly in your headset if low vacuum (or pressure) or low voltage develops. * Includes a red warning light mounted close to the gyro instruments. Many aircraft are equipped with backup vacuum systems, however you must first know that your instrument power system has failed before any of these backup systems are engaged. You must "know you have a problem before you have a problem". Volt & Vac Alert consists of a small electronic unit that can be mounted anywhere in the aircraft. It connects to aircraft voltage, instrument power (vacuum or pressure), and the aircraft audio system. If the voltage falls below 12v or 24v the voice message "CHECK VOLTAGE CHECK VOLTAGE" will be heard. Should the gyro power fail, the pilot will hear the voice message "CHECK GYROS, CHECK GYROS" directly in his headset. The voice message will sound once, and then the red warning light will illuminate until the problem is fixed. The unit can be used in 12v or 24v aircraft with either vacuum or pressure gyro power systems. It can be installed in pressurized or un-pressurized aircraft. Sold as a complete assembly with everything necessary for the installation except a 1 amp fuse or circuit breaker. STC'd for most general aviation aircraft
P/N 10-00393

VOICE ALERT



Whenever the existing stall horn sounds, the pilot will hear the instantly recognizable voice message "STALL, STALL" from the built in speaker, and directly in his headset. If the gear warning horn sounds, the pilot will hear the voice message "CHECK LANDING GEAR, CHECK LANDING GEAR" alerting of the problem. No more confusion over which horn is sounding. These voice messages are in addition to the original horn sounds. The Voice Alert consists of a small electronic unit about 2-1/2" by 3-1/2" in size that can be mounted almost anywhere in the cockpit. The installed weight of the unit is less than 1 lb. The unit is supplied as a complete kit consisting of the electronic unit, a pre-wired cable assembly, and all the connectors and mounting hardware. The only other item required is a 1 amp fuse or circuit breaker. Installation is easy, and can be performed by an A&P mechanic or an avionics shop. The system is approved for both fixed and retractable gear aircraft.

| Description | Part No. | Price |
|--|----------|-------|
| VOICE ALERT 2040-1-1 produces voice messages for gear and stall warnings, and can be programmed with up to 8 additional warning voices such as altitude, vacuum, fuel, pressures, etc. Supplemental system only. | 10-03713 | . |
| VOICE ALERT 2040-1-2 produces stall and gear voice messages in the pilot's headset. Supplemental system only. | 10-00394 | . |
| VOICE ALERT 2040-1-1P similar to the 2040-1-1 except approved for installation as primary replacement for existing warning units like Cessna Electronic Dual Warning units | 10-03714 | . |
| VOICE ALERT 2040-1-2P similar to the 2040-1-2 except approved for installation as primary replacement for existing warning units like Cessna Electronic Dual Warning units | 10-03715 | . |

GEAR WARNING SYSTEM (2048)



* Provides both voice and visual warning if the landing gear is not in the correct position for either a runway landing or a water landing. * Airspeed activated, activation speed is easily set from 45 to 90 mph. * Works with aircraft having 2, 4, or 8 gear indicating lights or simple switches that provide gear position. Consists of a small electronic module (2.5 inch by 3.25 inch weighing less than 1 lb), and a panel mounted switch with light. The system is airspeed activated. The activation speed can be easily set using a screwdriver. On takeoff once the speed has exceeded the activation speed, the system activates. A time delay is built in to prevent false triggering due to speed fluctuations. The light in the switch illuminates when the system is activated. The pilot can perform a self test of the system. Can place in a disengage mode which temporarily disengages the system for slow flight. If the aircraft has flaps, a flap switch can be added to cause the landing sequence to be initiated whenever the flaps are fully extended. The unit also includes an airspeed activated switch which closes whenever the airspeed is above 45 mph. This can be used to activate a transponder, Hobbs meter etc. The unit is sold as a complete system including the electronic unit, a pre-made cable assembly, a pre-wired switch, connectors, mounting hardware etc. Experimental aircraft. P/N 11-02258

POWER GUARD BUS MANAGEMENT SYSTEM



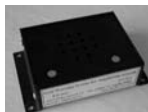
An essential bus management circuit designed to protect power sensitive and critical electronics. Starting currents are usually high enough to cause battery voltage to drop below tolerable limits for many electronics systems. The result could leave you without engine instrumentation until EFIS "reboots" (up to 30 seconds). Protection includes low voltage drop out and essential backup in the event of primary power loss. Filtration on the secondary supply and secondary battery charging are also an integral parts of the circuit. A secondary battery is required for the Power Gauge we recommend a 5-12 Amp battery for emergency supply. Several control modes are possible with the system allowing for installation and operational flexibility. Load Ratings: 7A continuous, 10A 10% duty. Dims: 4.75"l x 2.75"w x 1.2"h P/N 11-02044

AMPHIBIAN GEAR WARNING SYSTEM



Designed to provide an additional margin of safety for amphibian pilots by providing a backup electronic means of verifying landing gear position for both water and runway landings. Consists of a small electronic box (about 2.5 inch by 3.25 inch weighing less than 1 lb) that can be mounted anywhere in the aircraft, and 2 panel mounted switches with lights. The system is activated by airspeed. The activation speed can be set by a simple screwdriver adjustment. On takeoff, as the airspeed exceeds the activation speed, the system becomes active. There is a time delay built in to prevent false triggering. When the system becomes active, the lights in the panel switches will illuminate for 6 sec, to alert the pilot that the system is active. The pilot can perform a self test. Can be temporarily disengaged for slow flight. As the aircraft slows below the activation speed for a landing, the landing sequence is initiated. Panel switches are marked "L" for land, and "W" for water. If the gear is in the correct position, the voice message "GEAR O.K." will be heard. If the gear is not in the proper position, the voice message "CHECK LANDING GEAR, CHECK LANDING GEAR" will be heard. This message will continue until the speed is increased above the activation speed, or the gear is placed in the proper position. When installed in aircraft having multiple gear indicating lights, the system will respond with the "CHECK LANDING GEAR" voice warning if it determines that any of the wheels are in the wrong position. Also responds with the warning if the gear indicating lights lose power. Also incorporates an airspeed activated electronic switch which closes whenever the airspeed is above 45 mph. This can be used to activate a transponder, Hobbs meter etc. Supplied as a complete kit consisting of the electronic module, a pre-wired, color coded cable, switches, connectors, mounting hardware etc. The only other item required is a 1 amp fuse or breaker. STC'd for many amphibian aircraft and aircraft on amphibian floats
P/N 11-07537

GEAR ALERT SYSTEM 2050



NOTE: This system is not FAA approved. It is intended for installation in Experimental category aircraft only.

For Experimental amphibian aircraft consists of a small electronic module (2.5 inch by 3.25 inch weighing less than 1 lb), and a panel mounted switch with light. The system is airspeed activated. The activation speed can be easily set using a screwdriver. On takeoff, once the speed has exceeded the activation speed, the system activates. A time delay is built in to prevent false triggering due to speed fluctuations. The light in the switch illuminates when the system is activated. The pilot can perform a self test of the system. Disengage mode which temporarily disengages the system for slow flight. During this period, the light in the switch flashes indicating the system is disengaged. Pushing the switch again re-engages the system. As the aircraft slows for landing, the system enters the landing mode. The light turns off, and the electronics then checks the gear position lights to determine the gear position. If the aircraft has flaps, a flap switch can be added to cause the landing sequence to be initiated whenever the flaps are fully extended. A switch can be added to the throttle so that closing the throttle with the gear up will cause the warning voice message to be heard. The unit also includes an airspeed activated switch which closes whenever the airspeed is above 45 mph. This can be used to activate a transponder, Hobbs meter etc. The unit is sold as a complete system including the electronic unit, a pre-made cable assembly, a pre-wired switch, connectors, mounting hardware etc. P/N 11-07538

POWER BUSS 2075



An electronic device that provides 12 volt DC overload monitoring and protection for 18 electrical circuits. The Power Buss also monitors (high amperage) generator supply and landing gear actuator circuits. Protection is provided by 18 solid-state PTC current limiters that automatically remove power when a circuit becomes overloaded. Just as mechanical circuit breakers can be reset, the PTC can be reset if power to the PTC, or the load (or service) supplied by the PTC is manually shut off for approximately 15 seconds. Monitoring is provided by a red warning light (that includes the function of a momentary push switch) and an electronic voice annunciator system that provides an audio identification of the overloaded circuit through a built in speaker. Voice warnings can also be output into the pilot's headset. Includes an avionics buss that automatically removes power from sensitive avionics systems during engine start. Weighing only 13 oz. and self-contained the Power Buss module can be mounted anywhere behind the panel with only the warning light visible in the cockpit. Interconnect is made by quick connect terminals. The system's 18 PTC's provide an economical replacement for heavy circuit breakers. 18 different voice messages corresponding to the 18 circuits provide instant recognition of which circuit has tripped. The sophisticated electronic audio alert system removes the requirement for a separate (difficult to read and interpret) circuit display module. On power up the Power Buss automatically tests all circuits. Pressing the red warning light also tests the system with a "Test OK" annunciation. Experimental aircraft only. P/N 10-03716



ELECTRONIC ACCESSORIES - STROBES



MASTER NAG-THE MASTER SWITCH WARNING SYSTEM

An audible warning system for 12V or 24V aircraft designed to prevent leaving the master switch turned on in an aircraft. It is fully automatic and requires no attention from the pilot. It is armed by presence of engine oil pressure after the engine has been started and will alert the pilot if the master is left on after engine shutdown. Since the unit is triggered on engine shutdown by a loss of oil pressure a short time delay is experienced between shutdown and alarm activation. No sound will be heard when the master switch is first turned on. This allows the pilot to talk to ground control, clearance delivery etc., without the distraction of an alarm. The unit is constructed with MIL-SPEC components and printed circuit board construction. It is capable of 12 or 24 volt operation and is polarity protected, internally fused (no external circuit breakers or fuses required for installation) and can be triggered from a positive or negative signal from the Hobbs meter switch as described in the installation manual. Weighs less than two ounces, 8 milliamps. All mounting hardware and connectors are provided.

P/N 11-15200

ELECTRONIC FLAP CONTROL



Move aircraft flaps to 4 predefined positions/steps (Flaps Full Up, Flaps 1, Flaps 2, and Flaps Full Down). The positions may be defined by user at any time, when system is fully mounted and installed. The Box can be installed between Flap-switch, Position-indicator, Flap-motor and position sensor. Works with standard switches and position sensors. Has built-in Relays to drive directly the Flap Motor or solenoid-valves in hydraulic systems. **Features:** • Flap limit-switch (upper and lower) input • Auto/Manual-Switch input, to disengage Electronic-/Automatic-Mode in case of electronic failure. • Flap-Position-Sensor-Input (adjustable, to meet user requirements) • Flap-Position-Indicator-Output (adjustable, to meet user requirements) • Built-in mode switch to ease define Flap-stop-positions and working modes of device

• Full aluminum case • Detailed wiring diagram & setup-description • Dims: 4.72"x2.56"x2.13" • Weight: .474 lbs. • Output: Relays • Max input/Output-Current: 10A • Supply voltage: +12VDC
Electronic Flap Control..... P/N 11-01825
Flap Position Sensor..... P/N 11-01826
Spare Relays (12V, pluggable)..... P/N 11-01827

GRETZ AERO WARNING TONE

GENERATOR & AUDIO MIXER

GRETZ AERO AUDIO WARNING TONE GENERATOR - Warning tone can be used to get your attention for one of variety of events through your headset advising of a user selected function.

P/N 11-06491



GRETZ AERO AUDIO MIXER - A must have economical item if you have two or more audio sources in your aircraft. If you do not want to install a very costly and panel-space-hungry audio panel, the GA-AM is for you. Up to nine audio sources can be fed into this device. These audio sources could come from your com radio, a second com radio, your nav radio, GPS, marker beacon, or warning devices. You can even have music into your headset from your stereo CD player however it will be monaural. All that is needed is a music player.. The two stereo channels are fed into the Audio Mixer by using two of the Audio Mixer's nine audio inputs.

P/N 11-06490



DIGITAL VOLTAGE MONITOR

Helps pilots monitor critical electrical system. STC approved. Features a Multi Color LED display, which is easily viewable from a wide angle. In the event of an alternator/generator failure, the LED display indicates the reserve battery capacity. The display automatically adjusts to the ambient light for IFR or night operation and also serves as a reminder to turn off the electrical system after flight. Comes in either 12V or 24V models and includes all necessary hardware and FAA Documents. The display must be set to Dot mode for FAA approved installations.

12 Volt Digital Voltmeter P/N 10-00752
24 Volt Digital Voltmeter P/N 10-00753



CABIN POWER SYSTEM

The Cabin Power System provides a 12V outlet in the cabin. It consists of a Voltage Regulator Unit (VRU) assembly that is connected to a power outlet mounted within the aircraft cabin. The VRU (pictured) converts aircraft power to 12V @ 1.5A at the outlet. Size: 2-7/8" x 3.5" w x 2-1/8" h; Wt: 5 oz., the VRU can easily be mounted in a variety of locations. In Cessna 172, 182, & 206 models it is approved for mounting on top of the map compartment behind the instrument panel. STC-PMA'd for Cessna 172, 182, & 206 models. System is shipped complete w/Flight Manual Supplement, Instructions for Continued Airworthiness, and Installation Manual.

P/N 11-01894

SKYSPORTS BRIGHT STAR STROBE



Measuring only 4" high by 2 3/4" diameter, it weighs less than 5 ounces! Special dual xenon flashtube arrangement provides ultra-bright flash visible for over 3000' in daylight, much more at dusk and dawn. No separate power pack is required, all electronics are fully contained in the strobe itself. Lens is available in clear, red or green. Each strobe draws less than 300ma. Mounting bracket included. Buy two for wing-tip installation. Must be run from 12 volt battery. Dimensions: 4"x 2.75"(dia) Weight: 4.5 ounces.

Strobe 12VDC Clear..... P/N SS901C

ACCESSORIES

Strobe Lens Clear..... P/N SS902C
Strobe Lens Red..... P/N SS902R
Strobe Lens Green..... P/N SS902G



MINIATURE AEROFLASH ANTI-COLLISION SYSTEM

Mounted on vertical fin of many Cessna and other production aircraft models. Fully FAA-PMA approved. Only 2.5" dia., 2.5" high. Weighs 6 oz. Unit available with red or clear Fresnel dome. Has 125W quartz bulb. Draws 10 amps nominal at 12V. Use 12 or 14 Ga. wire for hookup. Kit consists of light assembly and 12V/24V power supply. Specify bulb voltage and red or clear dome.

12V Kit (Clear Lens) 157-0001C..... P/N 11-05906
12V Kit (Red Lens)..... P/N 157-0001R
24V Kit (Clear Lens) 157-0002C..... P/N 11-05907
24V Kit (Red Lens)..... P/N 157-0002R

| Description | Ref No. | Part No. | Price |
|--------------------------|---------|----------|-------|
| Flasher | A | 150-0015 | . |
| Red Lens | B | 111-0001 | . |
| Clear Lens | C | 111-0004 | . |
| Quartz Lamp 24 Volt/150W | D | 040-0003 | . |
| Quartz Lamp 12 Volt/125W | D | 040-0028 | . |
| Gasket | E | 080-0001 | . |
| Clamp Ring | F | 073-0002 | . |
| Socket & Plate Assembly | G | 073-0021 | . |
| Mounting Plate Assembly | H | 073-0055 | . |
| Aeroflash Resistor 100 W | - | 012-7426 | . |

MINIATURE AEROFLASH SINGLE LIGHT STROBE

A high-intensity anti-collision strobe system producing 10 joules. FAA-PMA approved. Mount on top or belly of fuselage or on vertical fin. The Xenon lamp is designed to produce symmetrical illumination pattern of light 360° around the aircraft and 70° above and below the horizon. Less than 3" dia., 2-1/2" high. Mounts in 7/8" dia. hole and is secured by two screws. Draws 2 amps nominal at 12V. Kit includes light, remote power supply and 15 ft. cable. Light has clear Fresnel lens and strobe tube. Wts: Light 6 oz., Power Supply 20 oz. Hardware NOT included.

12V Kit..... P/N 156-0007
24V Complete Kit..... P/N 156-0002
12V Power Supply..... P/N 152-0007
24V Power Supply..... P/N 152-0010
Flash Tube Only..... P/N 073-0141
Flash Tube Ass'y..... P/N 153-0001



AEROFLASH TWO-LIGHT STROBE KIT

Solid State Power Supply for each wing tip. Complete with two power supplies, two strobe tubes, lenses and retainer. Specify 12-14V or 24-28V. FAA approved. Used on Grumman aircraft.

| Kits consist of: | Part No. | Price |
|---|------------|-------|
| (2)-152-007, 12V Power Supply, (2)-153-008, Light Assy. | 156-0010 | . |
| (2)-152-0010, 24V Power Supply, (2)-153-0008, Light Assy. | 156-0011 | . |
| (2)-152-0021, 24V Power Supply Explosion Proof, (2)-153-0008, Light Assy. | 156-0011EX | . |

AEROFLASH NAV/ STROBE LIGHT KITS

These non-PMA'd remote nav/strobe light kits are excellent for ultralights and homebuilts. Kit includes one red light assembly, one green light assembly and two power supplies.

Single flash, 12V kit... P/N 156-0039-12V
Single flash, 28V kit... P/N 156-0039-28V
Double flash, 12V kit..... P/N 11-04762

AEROFLASH NAV/STROBE/POS. LIGHT KITS

These non-PMA'd remote nav / strobe /position light kits are excellent for ultralights and homebuilts. Kit includes one red light assembly, one green light assembly and two power supplies. The nav lights include clear position lights on rear of assemblies.

Single flash, 12V kit... P/N 156-0049-12V
Single flash, 28V kit... P/N 156-0049-28V
Double flash, 12V kit .. P/N 11-04763



AEROFLASH STROBES

AEROFLASH FAA/PMA AIRCRAFT APPROVAL LIST

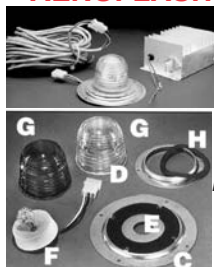
| Aeroflash Original P/N | Current P/N | Manufacture P/N | Description | Aircraft Installation Eligibility | Price |
|------------------------|-------------|------------------|---|--|-------|
| 40-6 | 040-0003 | G.A.A.C P/N | 24V/150W QUARTZ LAMP | AA1B, AA5A, AA5B | . |
| 40-0010 | 040-0028 | | 12V/125W Bulb | | . |
| 150-0002 | Same | | 14V Single or Dual Flasher | AA1B, AA5A, AA5B | . |
| 151-0001 | Same | | 14V Light Assembly, Red Lens | AA1B, AA5A, AA5B | . |
| 152-0004 | 152-0007 | | 14V Power Supply | AA1B, AA5A, AA5B | . |
| 153-0008 | Same | | Strobe Assembly | AA1B, AA5A, AA5B | . |
| 073-0270 | Same | Varga P/N | U-Type Flash Tube Assembly | 2150A | . |
| 152-0004 | 152-0007 | | 14V Power Supply | 2105A | . |
| 152-0008 | 152-0007 | | 12V Power Supply Single Flash | | . |
| 150-0015 | Same | Rockwell P/N | 14V or 28V, Sgle. Dual Flasher DVA-2 | 112, 112B, 112TC, 112TCA, 114 | . |
| 151-0001 | Same | | 14V Light Assembly Red Lens | 112, 112B, 112TC, 112TCA, 114 | . |
| 150-0015 | Same | Great Lakes P/N | 14V or 28V, Sgle. Dual Flasher DVA-2 | 2T-1A-1, -2 | . |
| 151-0001 | Same | | 14V Light Assembly Red Lens | 2T-1A-1, -2 | . |
| 40-6 | 040-0028 | C17312-3 | 12V/125W Bulb | 150, 172, 177, 177RG, 180, | . |
| 40-0010 | 040-0028 | | 12V/125W Bulb | 182, 185, 188, 206, 207 | . |
| 40-14 | 040-0003 | C17312-1 | 24V/150W QUARTZ LAMP | 210, 337, 28 Volt Version of | . |
| 40-0027 | | | | 185, 188, 206, 207 | . |
| 73-0165 | 073-0270 | C622006-0108 | U-Type Flash Tube | 150, 172, 177, 177RG, 180 | . |
| 111-0016 | Same | C622006-0103 | Wing Tip Clear Dome | 150, 172, 177, 177RG, 180, 182, 185, 188, 206, 207, 210 | . |
| 150-0008 | Same | C594501-0204 | 28 Volt Single or Dual Flasher A2E | 337 | . |
| 150-0010 | 150-0015 | C594502-0102 | 14V or 28V, Single/ Dual Flasher DVA-2 | 150, 172, 177, 177RG, 180, 185, 188, 296, 207, 120 | . |
| 151-0002 | 151-0001 | C621001-0106 | 14V Lamp Assembly Red Lens X1E-6 | 150, 172, 177, 177RG, 180, 182, 185, 188, 206, 207 | . |
| 151-0006 | 151-0005 | C621001-0102 | 28V Lamp Assembly Red Lens X2E | 210, 337, 28 Volt Version of 206, 207, 185, 188 | . |
| 152-0004 | 152-0007 | C622008-0101 | 14V Power Supply | 150, 172, 177, 177RG, 180, 182, 185, 188, 206, 207, R172, 210 | . |
| 152-0010 | 152-0010 | C622008-0102 | 28V Power Supply | 210, 28 Volt Version of 185, 188, 206, 207, R182, 150, 172, 177, 177RG, 180, R172 | . |
| 153-0006 | 153-0009 | C622006-0107 | Wing Tip Strobe Assembly | 150, 172, 177, 177RG, 180, 182, 185, 206, 207, 210 | . |
| 151-0008 | 11-02103 | Not FAA Approved | 24-28V Red Tear Drop Lt Assy | Helicopter | . |
| 151-0009 | 11-02104 | Not FAA Approved | 24-28V Red Light Assy w/ Mt Plate | Helicopter | . |

AEROFLASH TAIL STROBE/ POSITION LIGHT KIT

This non-PMA'd kit for experimental aircraft only includes (1) 12V clear lens assy. & (1) 12V single flash remote power supply, output 10 joules.

Model 156-0029SF Kit..... P/N 11-00979.....
Replacement Clear Dome..... P/N 11-00980.....
Replacement Gasket..... P/N 11-00981.....
Replace. Flashtube w/pos. lamp..... P/N 11-00982.....

AEROFLASH FUSELAGE MOUNT SYSTEM



P/N 156-0017 consists of:

One-152-0007 12 Volt Power Supply
One-163-0001 Light Assembly
One-073-0217 Cable Assembly

P/N 156-0018 consists of:

One-152-0010 24 Volt Power Supply
One-163-0001 Light Assembly
One-073-0217 Cable Assembly

P/N 156-0018EX consists of:

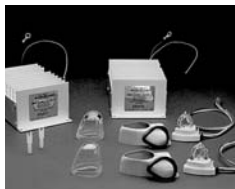
One-152-0021 24 Volt Power Supply Explosion Proof
One-163-0001 Light Assembly
One-073-0217 Cable Assembly

Spare Parts for Light Assemblies:

| Ref # | P/N | Description | Price |
|-------|----------|---|-------|
| A | 152-0007 | 12V Power Supply Clear Anodized | . |
| | 152-0010 | 24V Power Supply Gold Anodized | . |
| | 152-0021 | 24V Power Supply Explosion Proof Blue Anodize | . |
| B | 073-0271 | Cable Assembly | . |
| C | 073-0055 | Mounting Plate Assembly | . |
| D | 101-0020 | Hold Down Ring | . |
| E | 080-0008 | Gasket | . |
| F | 073-0141 | Strobe Flashtube | . |
| G | 111-0001 | Red Lens | . |
| | 111-0004 | Clear Lens | . |
| H | 080-0001 | Gasket | . |

AERO FLASH PIGGYBACK WING TIP STROBES

Original equipment on many Cessnas. Kit includes two strobe units with wiring which mount on Grimes Model "E" wing position lights (not furnished), two power supplies which mount on wing tip ribs, and two lens retainers. Strobes simply plug into power supplies - no interconnecting cables. Draw just 2.5 amps nominal at 12 volts.



P/N 156-0003 consists of:

Two-152-0007 12 Volt Power Supply
Two-153-0009 Light Assembly

P/N 156-0004 consists of:

Two-152-0010 24 Volt Power Supply
Two-153-0009 Light Assembly

P/N 156-004EX consists of:

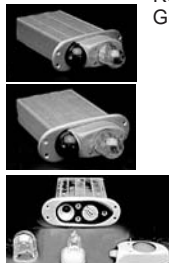
Two-152-002124 24V Power Supply
Explosion Proof Ideal for
wet-wing aircraft
Light Assembly
Two-153-0009

| Ref # | P/N | Description | Price ea. |
|----------|----------|---|-----------|
| A | 152-0007 | 12 Volt Power Supply Clear Anodized | . |
| | 152-0010 | 24 Volt Power Supply Gold Anodized | . |
| 152-0011 | | 24 Volt Double Flash Power Supplies (each draws 2.7 amps and weighs 1.33 lbs.) | . |
| | 152-0021 | 24V Power Supply Explosion Proof Blue Anodize | . |
| B | 073-0270 | Strobe Flashtube | . |
| C | 101-0084 | Lens Retainer | . |
| D | 080-0018 | Gasket | . |
| E | 111-0016 | Clear Dome | . |

AEROFLASH NAVIGATION/STROBE COMBINATION SYSTEM

Red..... P/N 156-0019R.....
Green..... P/N 156-0019G.....

Spare Parts:



| Ref # | P-N | Description | Price ea. |
|-------|-----------|-----------------------|-----------|
| A | 152-0024 | 24V Power Supply | . |
| B | 111-0068 | Clear Dome | . |
| C | 040-0043 | Strobe Flashtube | . |
| D | 101-0238A | Hold Down Bracket | . |
| E | 111-0066 | Red Navigation Dome | . |
| | 111-0067 | Green Navigation Dome | . |
| F | 040-0046 | Navigation Lamp | . |
| | *080-0046 | O-Ring Gasket | . |
| | *080-0042 | Flange Gasket | . |

*Not Shown

AEROFLASH REPLACEMENT FLASHERS



P/N 150-0002 consists of:

12 Volt Single and/or Dual Flasher
Replaces Old Style Flashers in Cessna Aircraft

P/N 150-0003 consists of:

24 Volt Alternating Flasher Replacement
for Helicopters

Aeroflash flashing lights have been used on Cessna aircraft since 1964. The strobes have been original equipment since 1977 on Cessna, Varga and Aero Commander.

P/N 150-0008 consists of:

24 Volt Single and/or Dual Flasher
Replaces Old Style Flashers in Cessna Aircraft

P/N 150-0013 consists of:

24 Volt Single Flasher

EL

STROBES – POSITION LIGHTS - LED LIGHTS

ILLUSION AIRCRAFT STROBE



Powered by the lighting coil of Rotax and other two-cycle engines, this is the most efficient strobe light on the market because it uses only the power normally wasted by the voltage regulator in a battery charging system. It has no effect on the charging system, so you can still connect other equipment to the lighting coil. The two strobe lights flash alternately an average of 55 times per second. Lesser strobe systems fire their lights simultaneously, resulting in a much longer firing cycle because the lighting coil can only develop so much power in a given time. The illusion Strobe use a specialized prismatic Fresnel lens. This lens increase the strobe's effective light intensity up to 8 times. The illusion Strobe works with the new Rotax 170W dual-ignition lighting coils and the standard 125W single-ignition type. It meets Part 103 requirements to add to an extra hour of legal flying time each day. The illusion Strobe comes with 2 lights rated at 25 joules; driver, wire, hardware, instructions, and a two-year manufacturer's warranty.

Dual Wingtip Strobe Sys.....P/N 10-00819
Single Strobe SystemP/N 11-05911

FLIGHT STROBE FS 4400



This precision compact unit mounts easily on top or below fuselage, and directly replaces rotating beacons. It features a high-intensity Xenon arc lamp, a high-efficiency push pull inverter circuit for stable flash voltage and a flame-resistant military circuit board assembly. The lamp is readily replaceable without removing the unit from the aircraft, and the unit weighs only 1 lb. 4 oz. The Flight Strobe FS-4400 is visible for over 50 miles at night, in haze, smog or bright sunlight and is manufactured using the highest quality components for maximum reliability and service life. Amp draw 3 Amp. (14V) & 1.5 Amp (28V). STC'D for Cessna 180. FAA form 337 for field approval is required for installation of other certified aircraft. Order adapter separately.

14V (FS-4400-14V) P/N 11-01018.....
28V (FS-4400-28V) P/N 11-01019.....
FS-4400 Adapter..... P/N 11-06500.....
FS-227 Repl. Bulb 14V/28V P/N 11-06510.....
FS-210C Clear Lens..... P/N 11-01024.....
FS-210C/R2 (1/2 Clear-1/2 Red)..... P/N 11-01026.....
FS-210R Red Lens..... P/N 11-01021.....
Fuse for FS-4400..... P/N 11-02027.....

PSA TRIMCRAFT LED BASED LIGHTS



8000 SERIES (LED) ANTI-COLLISION BEACON - LED based self-contained, High Impact Polycarbonate Optical Lens. Lighter, Brighter, Cooler Longer Life (up-to 50,000 hrs.) and draws less than 1 amp. (.13 amps) @ 12vdc. Weighing in at 3.5oz. it stands 3" high and 2.5" in diameter. P/N 11-07241 (Red)
P/N 11-07246 (Clear)

MODEL 918 (LED) TAIL LIGHT TL918 TAIL LIGHT - LED based Tail Light that weighs only 1.5oz. High Impact Polycarbonate Optical Lens. Up-to (50,000 hrs.) life. Draws .13 amps @12vdc. It measures approximately 1.6" high and 1.4" diameter. P/N 11-07242.....

MODEL 927 (LED) ANTI-COLLISION BEACON - Completely Self-Contained LED Based Anti-Collision Beacon 927ACB (RED OR CLEAR) High Impact Polycarbonate Optical Lens. Up-to (50,000 hr.) life. Draws .14 amps@12vdc. It measures approximately 1.6" high and 1.4" diameter. That's right, it is in the same package as the Tail Light! Lighter, Brighter and Cooler, and weighs only 1.6 oz. P/N 11-07243 (Red)
P/N 11-07244 (Clear)

ELECTRONIC (IN LINE) FLASHER MODEL PSA-EF - High Impact Polycarbonate Case. An (in line) 12vdc up-to 5amp flasher to flash all those lamps you always wanted to flash. 1" x 1" x 1/2", wt .8oz.P/N 11-07245

LED REPLACEMENT LAMPS FOR NAVIGATION LIGHTS

Upgrade your Red & Green Navigation Lights to LED's. Replaces standard lamps in Whelen, Grimes, and Hoskins Navigation lights. It's simple! Just replace your old incandescent bulbs with our new LED lamps and you are ready to go. Longer life, runs cooler, draws less than .2 amps, 43 candle power, meets FAR 23-1391, and is Mil Spec.

| Description | Part No. | Price |
|--------------------------------|----------|-------|
| LED7512-12V Red Lamp | 11-07744 | . |
| LED7512-12V Green Lamp | 11-07745 | . |
| LED7512-24V Red Lamp | 11-07746 | . |
| LED7512-24V Green Lamp | 11-07747 | . |
| LED75TPL-12 Tail Position Lamp | 11-07748 | . |
| LED75TPL-24 Tail Position Lamp | 11-07749 | . |



WING LIGHTS

W1285 series are the same design as Grimes Model E. Available with red or green lens and 12V or 24V bulb. W1250 PG/PR are FAA approved position



lights and are designed to fit underneath the wing tip fairings.

| W1285 | |
|--------------------------|----------|
| 14V Green W1285 Assembly | 11-03226 |
| 28V Green W1285 Assembly | 11-03891 |
| 14V Red W1285 Assembly | 11-03224 |
| 28V Red W1285 Assembly | 11-03283 |
| W1250 | |
| 14V Green W1250 Assembly | 11-04263 |
| 28V Green W1250 Assembly | 11-03278 |
| 14V Red W1250 Assembly | 11-04264 |
| 28V Red W1250 Assembly | 11-03282 |
| Replacement Bulbs | |
| 14V W1290 Bulbs | 11-02602 |
| 28V W1290 Bulbs | 11-02604 |



GRIMES MODEL B - Early type wing light with flat mounting pad. Mounts on tip of wing. Wt. 7oz Order by part number.

SINGLE CONTACT -

w/#93 Bulb New Surplus
Green, 14V P/N A-2430-1-G
Red, 14V P/N A-2430-1-R



STEEL FORMED NAVIGATION LIGHT PLATES

Wing tip light plate is welded or screwed to wing tip bows to attach teardrop type position lights. Tail light plate is welded to rudder to attach Model S tail light. Model E Wing Light Plate .P/N 11-06900..... ea
Model S Tail Light Plate.... P/N 11-07000..... ea

"C-LITE" WING TIP NAV LIGHT INDICATORS

These indicators identify your wingtips when taxiing at night, and assure your nav lights are working. Installs in minutes with just a screwdriver, and you don't disconnect the lights to do it. Works with high-or-low-wing aircraft, thick wing too. Designed for use with Grimes #A-1285 & #B-6345 nac lights, which means practically all aircraft. P/N 5122.....

TAIL LIGHTS

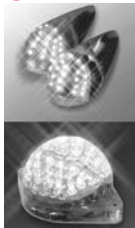
GRIMES MODEL S - For tailcone or rudder installation. Wt: 3oz. Single contact. 15 Candlepower. With #93 (12V) bulb. P/N 11-03652.....

GRIMES EARLY MODEL C - Mounts on trailing edge of rudder. Wt. 5 oz. Double contact. 15 Candlepower. With #94 (12V) bulb. Model B-1943-4 (New Surplus).....P/N 11-07200

REPLACEMENT PARTS FOR POSITION LIGHTS

Lenses for Grimes A, B, C Wing or Tail Lights
Clear.....P/N 11-03662..... Red.....P/N 11-03655.....
Green.....P/N 11-03663.....
Lenses for Grimes Model E or Whelen Wing Tip Lights
Red.....P/N 11-02754..... Green.....P/N 11-02755.....
Lens for Model S Tail Light (Clear) P/N 11-07400.....
Bale Wire - Grimes..... P/N 11-03664.....

ULTRALIGHT POSITION LIGHTS & STROBES



The new LED technology allows excellent navigation lights with only approximately 10% of the input power, compared with conventional navigation lights. The casting in a high-optical plastic makes the EPL (Electronic Position Light) absolutely insensitive against water, vibrations and other environmental influence. The efficiency of the output is much higher than with conventional electric light bulbs. The self-warming of the EPL is low and can be determined as safe. To avoid overheating, the heat balance is controlled electronically. As a precaution you must pay attention to ventilation with a cover installed, so that no heat accumulation within the casing can appear. This may be assumed by suitable constructive measures. These lights are manufactured in Germany.

Ultralight EPL Wing Tip Light Set.....P/N 11-05120.....
Ultralight EPL Tail LightP/N 11-05121.....
Ultralight EPL Beacon/Strobe.....P/N 11-05122.....
Ultralight EPL Complete Light Set.....P/N 11-05123.....

AVEOFLASH LIGHTING - ROCKRACK SWITCHES

AVEOFLASH - 14V LED AIRCRAFT POSITION LIGHTS



The AveoFlash™ aircraft lights are patented designs, with unmatched technology and performance features that are finally available at affordable prices. This incredible series of lights incorporate the exclusive SmartStrobe™ synchronizer circuitry, which is integral to the lights, no external flash unit/strobe power unit is required. Another unique and exclusive feature is the Aveo PowerOptimizer™ technology designed into the circuit board, it means less power consumption from even brighter lights.

The AveoFlash™ aircraft lights are patented designs, with unmatched technology and performance features that are finally available at affordable prices. This incredible series of lights incorporate the exclusive SmartStrobe™ synchronizer circuitry, which is integral to the lights, no external flash unit/strobe power unit is required. Another unique and exclusive feature is the Aveo PowerOptimizer™ technology designed into the circuit board, it means less power consumption from even brighter lights.



TAIL POSITION/STROBE - Consists of one aerodynamic oval Red/White/White Flash

AveoFlash 14V Tail Light - Red P/N 11-06630.....



ANTI-COLLISION - Consists of All Red flashing 360°
AveoFlash 14V Anti-Collision - Red . P/N 11-06631.....

AVEOFLASH - E-SERIES™ AIRCRAFT LED LIGHTS



E-Series AveoFlashLP™ Aircraft lights meet both TSO C30c and C96a design specifications, and EXCEED the requirements of TSO C30c, C96a, SAE AS 8037 and AS8017a, and DO-160B. E-Series AveoFlashLP™ are unbreakable lights with a lifetime warranty at an affordable price for your kit, sport, ultralight or experimental aircraft. No more broken expensive lens to replace, no more bulbs to replace! With the

Exclusive free-replacement lifetime warranty they are the last lights you will ever need to purchase.

Integrating the most technologically-advanced and brightest LEDs available in the world to the amazing and all-new exclusive AveoOptimizer™ circuitry, the futuristic E-Series are marked as "LP", for "low profile". At a fully 25 mm (1 inch) lower overall height than the 2008 AveoFlash™ lights, the E-Series lights feature:



- A 9-32 volt input range, no more separate lights by voltage
 - Light synchronization feature as standard
 - Combined 3-in-1 Nav/Position/Strobe
 - An even lighter overall weight
 - Minimum drag profile
 - And of course the industry-exclusive Lifetime Warranty
- Combined with the unbreakable AveoDiamidium™ encasing, and a blinding output of strobe, position and nav lights, AveoFlashLP™ is sure to make you BE SEEN, NOT SORRY™.



| Description | Part No. | Price |
|---|----------|-------|
| AveoFlashLP™ E-Series Winglights Pair - strobe navigational green and red wingtips. | 11-07360 | . |

AVEOFLASH - POSISTROBE™ & POSISTROBE XP™ LED AIRCRAFT LIGHTS



Posistrobe™



PosistrobeXP™

The E-series PosiStrobe™ and PosiStrobeXP™ aircraft lights are patented designs, with unmatched technology and performance features that are finally available at affordable prices. This incredible series of lights incorporate the exclusive SmartStrobe synchronizer circuitry, which is integral to the lights, no external flash unit/strobe power unit is required. Another unique and exclusive feature is the Aveo PowerOptimizer technology designed into the circuit board, it means less power consumption from even brighter lights. The PosiStrobe™ is universal voltage input of 14-28 volts.

PosiStrobe is for Part 103 craft, trikes and ultralights. PosiStrobeXP is for light sport and experimental class.

At only 1.76 ounces, there is not a better solution to tail position/strobe needs in the world. The PosiStrobeXP™ meets both TSO C30c and C96a design specifications.

| POSISTROBE™ | | |
|---|----------|-------|
| Description | Part No. | Price |
| White / White AveoFlash PosiStrobe™ 9-32V | 11-06632 | . |
| Red / White *SPECIAL ORDER* AveoFlash PosiStrobe™ 9-32V | 11-07118 | . |
| Red / Red AveoFlash PosiStrobe™ 9-32V | 11-07119 | . |

| POSISTROBEX™ | | |
|---|----------|-------|
| Description | Part No. | Price |
| White / White AveoFlash PosiStrobeXP™ 9-32V | 11-07361 | . |

AVEO ROCKRACK SWITCHES



| SWITCHES | | |
|---|----------|-------|
| Description | Part No. | Price |
| Lighting 10 pk - Nav, Strobe, Taxi, landing, Beac/AC, Cockpit, map, Panel, Wig-Wag, On/Off | 11-07826 | . |
| Avionics 10 pk - Autopilot, Nav1, Nav2, Generator, Avionics Master, Weather, Standby Vacuum, Comm, Camera, Music | 11-07827 | . |
| Ice & Heat 10 Pk - De-ice, Prop De-ice, Cabin Heater, Fan, Defrost, Carb heater, Boots, TKS, Pitot Heat, Seat Heat | 11-07829 | . |
| Pumps 10 Pk - Fuel Pump, Fuel Pump, AUX, Transfer Pump, HUD Pump, Boost Pump, Boost Pump High/Boost Pump Low, Prime, High/Low, On/Off | 11-07832 | . |
| General 10 Pk - Emerg Bus, Up/Down arrow, MagL, MagR Aux, On/Off, High/Low, Aux Master, Avionics Master, Pitot heat | 11-07830 | . |
| Engine & Airframe 10 Pk - Standby ALT, Battery Master, Starter, Alternator, Elec Ignition, Speed Brake, parachute, Elec Trim, Left Mag, Right Mag | 11-07831 | . |
| Red switch top with icon Battery Master | 11-06641 | . |
| Red switch top with icon Avionics Master | 11-06642 | . |
| 14 Gauge Tab Terminals - 12 Pack | 11-07833 | . |
| 14 Gauge Tab Terminals - 24 Pack | 11-07834 | . |
| 14 Gauge Tab Terminals - 60 Pack | 11-07835 | . |
| Switch Bottom part - red | 11-06643 | . |
| Switch Bottom part - green | 11-06644 | . |
| Switch Bottom part - blue | 11-06645 | . |
| Switch Bottom part - white | 11-06646 | . |

| EXTRA MOUNTS | | |
|--|-------------|-------|
| Description | Part Number | Price |
| End Module | 11-06648 | . |
| Middle Module | 11-06649 | . |
| Single Module | 11-06650 | . |
| Connector | 11-06651 | . |
| Removing Tool - 2 required to remove the switch. | 11-06652 | . |

EL

KUNTZLEMAN STROBE SYSTEMS

KUNTZLEMAN MAGNUM STROBES

The **SINGLE MAGNUM SMART STROBE** Driver is a state of the art single strobe light system. There is not another system on the market like this one. It will operate on 10 to 80 volts of AC or DC input power. It can be powered directly from the engine lighting coil (AC) or from a battery (DC) without any change in brightness or its double wink flash pattern at a 74 per min. rate. There are NO options to change and NO special equipment needed. This model is a favorite for king post installations and with the PPC flyers. It is also available with either the standard STREAMLINE HEAD or the COMBO STREAMLINE WHITE HEAD. Both are popular for tail mounting. Average current draw is less than 2 Amps. The driver measures 4 1/2" X 3 1/2" X 1 1/2" and weighs 10 ounces.

Smart Strobe Driver Box only - Single Magnum Smart Strobe driver only, without a strobe head. SS-DO
P/N 11-05116.....



Single Magnum Smart Strobe with round clear Fresnel Head - The globe style is a Fresnel lens. The head comes with 6' of wire and plug attached. SS-TM
P/N 10-01609.....



Streamline Model with Driver and Streamline Head - Includes 25' of 3 conductor wire, plug, pins and mounting hardware (includes adaptor plate for curved surface mounting if needed). SS-SLM P/N 10-01611.....



SINGLE MAGNUM SMART STROBE DRIVER with a Round Taillight Strobe - Includes 25' of wire and mounting hardware. SS-TL-STR... P/N 11-07345.....



STREAMLINE COMBO Head, White Led & Strobe Combination - Includes 25' of 5 conductor shielded wire, plug, pins and mounting hardware (includes adaptor plate for curved surface mounting if needed). SS-SLCW
P/N 11-05114.....



ROUND TAILLIGHT COMBO Head - White Led & Strobe Combination Includes 25' of wire and mounting hardware. SS-TL-L/S..... P/N 11-07346.....

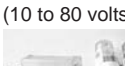


The **DOUBLE DUAL MAGNUM STROBE** Driver is available in two models, the DDM 12 volt DC model and the SDDM smart model. The SMART Model simply means it can be powered by 10 to 80 volts of AC or DC. The 12 volt model is powered by the 12 volt electrical system of your aircraft. The strobe bulb fires a rapid double flash on one head and then the other in an alternating pattern. The first flash catches the eye and the second identifies your position. Total flash rate is 74 per min. Average current draw is less than 2 Amps. The driver measures 4 1/2" X 3 1/2" X 1 1/2" and weighs 10 ounces.

Double Dual Magnum Driver Box Only - 12VDC Driver Box Only 12 volt Model DDM-DO P/N 11-05118.....



Double Dual Magnum Smart Driver Box Only - Smart Model (10 to 80 volts of AC or DC)SDDM-DO P/N 11-05117.....



Double Dual Magnum Driver Box with round clear Fresnel Heads - Two Round Fresnel Heads, driver, 6' of 3 conductor wire, plugs, pins, and installation hardware (Tang Mount used on PPC, TRIKES, or where bolting heads to frame is desired).



STANDARD - 12 VDC Model with /ROUND FRESNEL heads DDM-RH
P/N 10-01610.....

SMART - with /ROUND FRESNEL headsSDDM-RH
P/N 11-04956.....



Double Dual Magnum Driver Box with standard streamline Heads - Two Streamline Heads, driver, 50' of 3 conductor wire, plugs, pins, and installation hardware (includes adaptor plates for curved surface mounting if needed).

STANDARD 12 volt Model with Driver and Two STANDARD STREAMLINE Heads..... P/N 10-00824.....

SMART - model with with Driver and Two standard streamline Heads SDDM-SL P/N 11-04995.....



Two **STREAMLINE COMBO** heads, driver, 50' of 5 conductor shielded wire, plugs, pins, adaptor plates (for curved or flat surface mounting) and installation hardware. SONEX Aircraft adapter plates available

at no additional charge when mentioned at time of purchase.

COMBO - 12 VDC Model with Streamline Combo Heads DDM-SLC
P/N 11-04835.....

SMART - with Streamline Combo Heads SDDM-SLC
P/N 11-04957.....

KIT #1 IS A SET OF SPECIAL HEADS - For builders of RV 7, 9, & 10



aircraft or any other kit that has like mounted wing lights. Due to the wing light configuration on these aircraft, the

white rear facing LED on the regular Combo head is of no use, because it can't be seen from the rear. A white position or tail light is then needed. These are strobe and red / green position light equipped heads No white LEDs, a 2 strobe driver box, that fires both wing strobes in an alternating double wink pattern, a white round LED equipped tail light to be mounted at the rear of the aircraft. 50 feet of 5 conductor shielded wire for the wings, plugs, pins and mounting hardware. Total power draw for this system is about 2 1/2 Amps at 14 volts. P/N 11-05833.....

The **TRIPLE MAGNUM 3 LIGHT STROBE** Driver is a 12 volt DC operated system. It fires 3 strobe heads in a double wink pattern. The two wing tip lights alternate between left and right while the tail, or third light is synchronized to flash every time one of the wing tips are flashing. Resulting in about 140 flashes per minute. The driver box measures 4 1/2" X 7" X 1 1/2" and weighs 17.2 ounces. The current draw with 3 standard heads is about 3 amps. If using two COMBO heads and one standard head it is about 3 3/4 Amps. This makes it the most power conservative triple strobe system on the market.



Triple Magnum 3 Light DRIVER BOX ONLY - 12 volt Model TRI3-DO..... P/N 11-01355.....



TRI 3 DRIVER with 3 STANDARD HEADS, Streamline or Round. - with 3 standard SL or ROUND FRESNEL heads, please specify. Complete with 75' of wire, plugs, pins, adaptor plates (for flat or curved surface mounting) and all the installation hardware. TRI3-SLP/N 11-01829.....



TRI 3 DRIVER with 2 COMBO HEADS & 1 STREAMLINE, ROUND FRESNEL or TAIL-LIGHT HEAD - The TRIPLE MAGNUM 3 light system with 2 COMBO & a choice of either 1 Standard Streamline Head, 1 Round Fresnel



head or 1 Round Tail Light without LEDs (Additional cost for the Round Tail Light) for the third head, please specify. Complete with 75' of shielded wire, plugs, pins, adaptor plates (for flat or curved surface mounting) and all the installation hardware. (Please specify choice at time of order) TRI3-SLC..... P/N 11-05125.....



TRI 3 DRIVER with 3 COMBO HEADS - The TRIPLE MAGNUM 3 light system with 3 COMBO heads, please specify Streamline Combo or Round Tail light Combo for third head. Complete with 75' of shielded



wire, plugs, pins, adaptor plates (for flat or curved surface mounting) and all the installation hardware. The tail COMBO heads both have a strobe and white LEDs to be used as a STROBE and WHITE tail light. TRI3-SLCW P/N 11-05119.....

KIT #2 IS A SET OF SPECIAL HEADS - For builders of RV 7, 9, & 10



aircraft or any other kit that has like mounted wing lights. Due to the wing light configuration on these aircraft,

the white rear facing LED on the regular Combo head is of no use, because it can't be seen from the rear. A white position or tail light is then needed. A set of special heads. They are STROBE and RED / GREEN Position light equipped heads WITHOUT the white LEDs, a 3 strobe driver box, that fires both wing strobes in an alternating double wink pattern and a third STROBE and LED equipped round tail light for mounting at the rear of the aircraft. The tail strobe fires in sync with each wing. Also, included is 75 feet of 5 conductor shielded wire, plugs, pins and mounting hardware. Total power draw for this system is about 4 Amps at 14 volts. TRI3-RV..... P/N 11-05834.....

KUNTZLEMAN REPLACEMENT PARTS AND ACCESSORIES

Standard Streamline Head Assembly - Silicon and lexan head measures 3-1/4" x 1" and weighs 1.8 ounces each. (bulb unit, clear lens, adapter plate, 25 feet wire, plug, pins, hardware and heat shrink) SL-HA
P/N 11-05127.....

Standard Streamline Bulb Unit - Less lensSL-BU
P/N 11-05128.....

Standard Streamline Lens Only - SL-L. P/N 11-05130.....

Round head Assembly - Round clear Fresnel lens. Measures 2-1/2" dia. at the base and 3-1/2" tall. Weighs 6 ounces, and standard 6 ft. wire and plug installed. RND-HA -CLEAR P/N 11-05135.....

Round Clear Fresnel Lens - RND-L..... P/N 11-05139.....

Round Wire Bulb Unit - Works on all Magnum drivers.
RND-3WBW - 3 Wire.... P/N 11-05137.....

Combo Streamline Head Assembly - Also fitted with LED position lights. Measures 3-1/4" x 1" and weighs 2.8 ounces. 12 volt LEDs draw only (complete 2 head & wire) SL-HAC-S. P/N 11-07465.....

SL-HAC-G - Green & White aft LEDs (1 head & wire)
SL-HAC-G..... P/N 11-07466.....

W/O Strobe Bulb SL-HAC-WG..... P/N 11-07348.....

SL-HAC-R - Red/Wh aft LED SL-HAC-R..... P/N 11-07467.....

W/O Strobe Bulb SL-HAC-WR..... P/N 11-07349.....

SL-HAC-W - White aft LEDs SL-HAC-W..... P/N 11-07469.....

W/O Strobe Bulb SL-HAC-W..... P/N 11-05132.....

Combo Streamline - REPLACEMENT Strobe Bulb Unit Only, fits SL and ROUND Combo tail light heads..... P/N 11-05133.....

Combo Streamline - LENS Only SL-LC.... P/N 11-05134.....

Round Taillight with Strobe Only..... P/N 11-05805.....

Round COMBO Taillight..... P/N 11-05804.....

Round Taillight with LEDs TL-LED..... P/N 11-05806.....

Strobe Head Plug Set - SH-PS..... P/N 11-05140.....

Inline Plug Set - IL-PS..... P/N 11-05141.....

Trike Mount Adaptor Kit - TRK-MT..... P/N 11-05143.....

3 Wire Cable Extension - EXT-3W..... P/N 11-05142.....

Mounting Kit - RND-MK..... P/N 11-07347.....

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ULTRALIGHT STROBES - AEROSUN LIGHTING



KUNTZLEMAN SELF CONTAINED 12 VDC STROBE

The SC103 STROBE is a self contained 12 volt DC operated light designed specifically for Ultralight use where an external 12 vdc power source (battery) is available. Its physical size is the smallest of any self contained strobe light in its class. Measuring 2 1/2" dia. At the base and 4" tall. Using the same xenon flash tube and Fresnel lens that is currently being used on its big brother the Single Magnum Smart Strobe. The brightness has been actual flight tested before sunset and is visible at 3 statute miles (FAR 103 requirement). The flash is in a single wink pattern at about 42 per minute, power consumption is 500 ma (1/2 Amp) and it weighs only 7 1/2 ounces. The SC103 is mounted with a 1/4 X 20 stud located in the center on the bottom of the unit. Also, a stainless steel tang is supplied. Its rugged construction makes it a great economical stand alone unit. P/N 11-04098.....

SHOCK MOUNT - Designed to be used when mounting the SC103 strobe in an area of high vibration. P/N 11-06251.....



KUNTZLEMAN LANDING/TAXI/RECOGNITION (LTR) LIGHTS

LSA and EXPERIMENTAL aircraft line of lights. Made in the USA, called the LTR which stands for Landing-Taxi-Recognition. The LTR consists of 9 extremely bright LEDs, focused through special lenses. This results in a white beam of light that has been measured with a light meter to be 2 1/2 times the brightness of a 55 watt halogen lamp while drawing 1/3 the current and 1 1/2 that of an HID lamp at about the same current. Powered by 12 to 14 volts DC it uses only 1.35 Amps of power. The LTR dimensions are 3" Dia. X 1" deep and weighs less than 6 ounces. Flashing it on & off can be accomplished with an led flasher from your local auto parts store. You must see the LTR in operation to believe the light output. Sold with a money back satisfaction guarantee. P/N 11-06854.....



KUNTZLEMAN HOT BOX

The HOT BOX is a complete electrical system intended for use with an electric starter equipped engine. The box contains a heavy duty regulator, starter solenoid, custom length cables, labeled terminal strips, a fuse panel and many more features. P/N 11-05144.....

Hot Box with Regulator HB..... P/N 11-05144.....

Hot Box no Regulator HB..... P/N 11-05145.....



RED LED AIRCRAFT BEACON

This self contained 14 Volt beacon uses surface mounted LED (Light Emitting Diode) technology and meets FAA requirements for anti-collision light systems in both airplane and rotorcraft categories. This rugged little unit measures 1.7 inches in diameter, 3.5 inches tall and weighs 8.4 ounces. The average current draw at 14 volts is 0.6 Amps with a peak input current of 1.2 Amps. It has a flash rate of 60 per minute and will not produce EMI or RFI interference. The color is Aviation Red LEDs through a clear Polycarbonate Fresnel lens. The manufacturers projected life for their LEDs is up to 100K hours. Mounting is accomplished by a #10-32 stainless steel stud that is in the bottom center of the base. NOT TSO'D P/N 11-05111.....

LED TASK LIGHTS



BEZEL MOUNT - 12V - Wires exit out the side, white dimmer light .16 amp P/N 11-05682.....

SURFACE MOUNT - 12V - Wires exit out the back, brighter light .60 amp P/N 11-05683.....



SUN SPOT

SUNSpot is designed as a certified, drop-in replacement for your existing GE4509, PAR36 aircraft lights. It is mounted in place of the conventional clamp mount with a single bolt attach point, or can be ring-clamped to the existing mount. SUNSpot delivers 2800 lumens at 36W compared to a 100W halogen at 2000 lumens; 30% the power and greater light output. AeroSUNSpot has the same great design features as other aircraft light designs: * Wide Input Voltage Range (9VDC-36VDS) * Built in Wig/Wag (stand-alone or synchronous with any of our other products) * Over-temp Sense Protection; ensures our 50,000 hour lifetime guarantee * Low-voltage Sense (shuts down half the LED's in emergency, low voltage conditions) sold each P/N 11-06578.....



SUNTAIL

SunTail is designed to perform the tail position/strobe functionality on the rudder of the aircraft. The design addresses all the shortcomings of the existing line of competitive products and can synchronize its strobe with any of the AeroLEDs' wingtip family of nav/strobe and nav/position/strobe products. As with the ExP, SunTail™ was intended to meet or exceed all of the FAA requirements for certification. The product is expected to receive certified approval by the third quarter of 2009. P/N 11-07781.....

COURTESY LIGHTS FOR CESSNA AIRCRAFT



This unique LED lighting system operates from a standard 9 volt battery. The system is designed to replace one or more inspection panels on the bottom of each wing with a new inspection panel and a battery operated LED light. This LED will provide lighting around the aircraft for loading passengers or assisting in pre-flight inspections during night time operations.

The LED has been designed and tested specifically for aircraft applications where altitude and temperature fluctuations can destroy certain components of a standard LED. The unit is also equipped with an indicator to assist the pilot in finding the switch in the dark. A timing feature allows the operator to run the light for either 3 or 15 minutes after which time the unit will shut itself off. Available with your choice of 5 different sized inspection panels. STC'd for many models of Cessna Aircraft. **Visit or website for aircraft eligibility list.**

| Description | Part No. | Price |
|--|----------|-------|
| Courtesy Light with 5-1/16" Inspection Panel (Most Common) | 11-05741 | . |
| Courtesy Light with 5-11/16" Inspection Panel | 11-05742 | . |
| Courtesy Light with 6-1/32" Inspection Panel | 11-05743 | . |
| Courtesy Light with 6-13/64" Inspection Panel | 11-05744 | . |
| Courtesy Light with 7-9/16" Inspection Panel | 11-05745 | . |



SUNLITE LANDING LIGHTS

The SUNLite is protected against overheating with a built in protection circuit, is protected from lightning transients and ESD, voltage spikes, reverse voltage, and undervoltage conditions. Polycarbonate leading edge windows are commonly used with wing-mounted landing lights, and are typically available for most airplane types from a number of third-party suppliers. The AeroSUNLite dimensions are shown below in units of inches. This light is small enough to fit in the wingtip cutout found in Van's RV kits. AeroSun Lite 800 2 Lumen Lights (Single) P/N 11-06280.....



1600 LED LANDING LIGHT

The 1600 is a wing-mounted LED (Light Emitting Diode) landing light with a built-in wig wag mode in addition to its standard operation as a landing/taxi light. The 1600, made from extruded aluminum, is a very intense light source that uses 8 high power LEDs to produce up to 1600 lumens of light using just 24 Watts of power. The product is ideal of open airflow environments. Each uses one fourth the power of an equivalent 100 Watt halogen light while producing as much usable light. The LED light sources last up to 50,000 hours of constant operation. The unit is completely sealed and is very rugged. Completed and passed formal DO-160E testing for chapter 21 RFI and conducted emissions to category H, which is the most stringent level required. For installation on experimental category airplanes. Sold each P/N 11-05797.....



X-TREME

The X-treme is a wing-mounted LED (Light Emitting Diode) landing light with a built-in wig wag mode in addition to its standard operation as a landing/taxi light. The X-treme, made from a heavy T6-6061 aluminum, is a very intense light source that uses 8 high power LEDs to produce up to 1600 lumens of light using just 24 Watts of power. Ideal for non-airflow closed environments. Meets our internal Safety of Flight Designs (SoFD) criterion that surpasses all other manufacturers. Sold each P/N 11-06465.....



AERO-LEDS AERO PULSAR

The world's first LED-based Nav/Strobe lighting product that meets TSOs C30C and C96C. Will exceed the requirements which have traditionally been relegated to legacy technologies such as Xenon strobes and incandescent lighting. The design addresses all the shortcomings of the existing line of competitive products and was intended to meet or exceed all of the FAA requirements for certification. The product is expected to receive certified approval. P/N 11-06577.....



SUNRAY

The SunRay is a wing-mounted LED (Light Emitting Diode) landing light with a built-in wig wag mode in addition to its standard operation as a landing/taxi light. The SunRay is a very intense light source that uses 4 high power LED's to produce up to 500+ lumens of light using 12 Watts of power. The SunRay is equivalent to 1/2 of an AeroSUN 1600. P/N 11-07778.....



MICROSUN

The MicroSun is a wing-mounted LED (Light Emitting Diode) landing light with a built-in wig wag mode in addition to its standard operation as a landing/taxi light. The MicroSun is a very intense light source that uses 12 high power LED's to produce up to 1500+ lumens of light using 20 Watts of power. The MicroSun is equivalent to an AeroSUN 1600. P/N 11-07779.....

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LED LIGHTS - BEACONS - DIMMERS

AC-POWERED FLASHER



This anti-collision flasher meets Part 103 ultralight dawn to dusk flying requirements. The units draw 2.7 amps at 14V (nominal). It has a clear Lexan Polycarbonate lens and a 35W halogen lamp. Mounting bracket shown is also included..... P/N 10-01490

ULTRALIGHT BEACONS



These miniature self-contained units use solid state circuitry for reliability and a lexan lens that is UV protected and shatter resistant for durability. The beacon uses a commonly available 35W halogen DC lamp. 12V DC power source required for both units Wt: less than 7oz. Size: 3" h x 2-5/8" h. For Experimental Aircraft Only

Beacon, clear lens..... P/N 11-03007.....
Beacon, red lens P/N 11-03008

LIGHTMAN HIGH INTENSITY STROBE



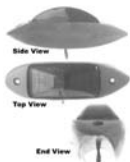
Lightman is a high quality portable battery operated strobe which is an ideal addition to a pilot survival kit. Its brilliant flash can be seen up to 3 miles and operates for 3-7 hours on AA batteries. It is impact & weather resistant; size: 3.5" on each triangular side; wt: 3.5oz. w/batteries.

Includes storage pouch, belt/visor clip, magnet, & other attachment accessories. Furnished with clear dome. P/N 11-08200

Dome only (Price/ea.)

Amber.... P/N 11-08205..... Red .P/N 11-08210.....
Green..... P/N 11-08215..... Blue.P/N 11-08220.....
Clear..... P/N 11-08225.....

ULTRALIGHT RED/GREEN POSITION LIGHTS



Made for easy installation to fit the tube that makes up the wing tip of most Ultralights. Powered by 12VDC and drawing only 1/3 amp each, these lights are just the thing for the Ultralight flyer that wants to add that special touch of position lights to his bird for those twilight flights. These

easy to mount lights measure 1-3/8" x 4-3/8". Please note that these lights are NOT TSO'd for VFR night flight...P/N 11-01356

NFLITE'S LOW VOLTAGE ANNUNCIATOR



The EA-1050 is designed for experimental aircraft. The microcontroller-based design is reliable, light-weight, consumes minimal current, and uses very little panel real estate. The industrial grade surface mount components used are shock/vibration resistant and

provide a wide operating temperature range.

The large red LED flashes for 60 seconds when alternator output voltage drops to 13V (normal output is ~14V). It then goes to continuous illumination until the condition is rectified. The flashing draws immediate attention to the condition -- continuous illumination is not a pilot distraction thereafter.

The voltage drop could be the result of an alternator malfunction or an overloaded system. Check by switching off a high load device, like landing light or strobes. If the ALT light goes off, the alternator is not malfunctioning but you are sourcing more voltage from your battery than the alternator is replacing. If the ALT light remains on, the alternator is malfunctioning and all non-essential electrical systems should be shut down immediately to conserve remaining battery voltage.

The LED activates when the master switch is turned on and goes out after engine start, assuming the alternator side of the master is on and alternator output is normal. Observing this should be a checklist item, as it indicates that conditions are normal and the annunciator unit is functioning prior to flight.

The flashing LED serves as a reminder to turn off the master switch after engine shutdown. It's also a helpful reminder to turn on the alternator switch after engine start (recommended starting procedure).

The entire unit is less than 1 sq. in. x 0.5" deep. A drill template is provided for attaching the LED bezel unit to the panel.

Complete installation and electrical connection instructions are also provided. P/N 11-02451.....

BLACK FLUTED CONTROL KNOB



Black Bakelite knob. Fluted grip. 1/4" brass bushing with set screw. 3/4" in diameter x 7/16" high. Fits potentiometers for Superior Panel Technology dimmers.

P/N 11-07344.....

SINGLE / 2 CHANNEL PWM DIMMERS



The two dimmers include a single channel model. Both use pulse wave modulation, or PWM electronic design for precise control of LED lighting such as LED instrument panel lighting, baggage, utility, map or post lights. The self-contained products are designed for easy installation and feature integrated on/off switches on each rheostat.

Rated at 18 Watts per dimmer channel, the dimmers are capable of operating a large number of interior lighting products and are engineered to provide additional over-current, over-voltage and reverse polarity protection.

Single Channel Pilot's Light Dimmer

Single Channel Dimmer is ideal for LED Light Strips, General Panel Lighting or Series of Lights (such as map or baggage lights). The rotating control has its own on/off switch.



- * 1.5A (18W) 12V dimmer using PWM (pulse wave modulation) for precise control
- * Integrated on/off switch and smooth action rotating control
- * Just 1.75" x 1.75" inches square. 1/4" shaft with high quality knob
- * Screw down terminals for input and output wiring. Very easy to install.
- * Powerful enough to operate numerous panel lights and convenience lights
- * To install, drill 1/4" hole, wire input and output to screw terminals and install.

2-Channel Pilot's Light Dimmer

Dual Channel (2 channel) Dimmers can be used with any combination of lighting - Dual Color LED Light Strips or for controlling 2 different sets of lights. Each channel has its own ON/OFF switch and dimmer control.



- * Each channel controls 1.5A (18W) using pulse-wave modulation for precise control
- * Controls LED or incandescent lighting, up to 18W each channel
- * Dual integrated on/off switches and smooth action rotating control
- * Permits complete independent operation of each channel (on/off & dimming)
- * Just 2.5" x 1.75" inches square. Dual 1/4" shafts with push-on knobs
- * Screw down terminals for input and output wiring. Very easy to install.
- * Powerful enough to operate numerous panel lights and convenience lights

Specifications:

- * Mode of Operation: Continuously variable, pulse width modulation (PWM)
- * Supply Voltage: 8 to 20 VDC working voltage, up to 30VDC momentary. Dimmer must be fused at power source
- * Output Voltage Range: From zero VDC to supply voltage
- * Output Current Range: Up 1.5A
- * Max Continuous Output Current: Full rated current up to 105F (40C), 75% of rated current up to 115F (46C)
- * Ambient Temp Range: Minus 40F (-40C) to 115F (46C), with restriction as noted
- * Size: About 1-3/4" inch square
- * Weight: 30 to 40 gm, depending on wired connection type
- * Heat Sink: Electrically isolated from voltage and acts as a circuit enclosure. Max. temperature rise under load is about 40 F (22C) above ambient.

| Description | Part No. | Price |
|-------------------------------|----------|-------|
| Single Channel PWM Dimmer 12V | 11-06674 | . |
| Single Channel PWM Dimmer 24V | 11-07286 | . |
| Two Channel PWM Dimmer | 11-06675 | . |

COCKPIT LIGHTS — STROBE POWER SUPPLIES

754 SERIES LED COCKPIT LIGHTS



These versatile cockpit lights can be used to illuminate the instrument panel. They can be repositioned to illuminate your charts with their 110 degrees of angle adjustment while being able to rotate a full 360 degrees. Dimensions: 3/4" diameter, 1-5/8" tall fully-extended, 7/8" tall at 90 degrees.

The mounting stud is 1/4" in diameter and can be mounted onto a surface up to .200" thick. Switchable models facilitate wiring an SPDT switch (not included) to the light, allowing either red or white operation. We also offer a flush-mount flange to mount the light if the back side of the light is unreachable.

Flush Mount - (Pictured above) This part is for mounting and LED light Model 754 from the front side. The adapter base is 1-1/2" in diameter, stands 1-2" tall, and has a 1" bolt hole circle.

| Model | Description | Body | Part No. | Price |
|-----------|---------------------------|-------|----------|-------|
| 754R-14V | 4 Red 14V L.E.D.s | Alum. | 11-04393 | . |
| 754R-28V | 4 Red 28V L.E.D.s | Alum. | 11-04394 | . |
| 754W-14V | 4 White 14V L.E.D.s | Alum. | 11-07481 | . |
| 754W-28V | 4 White 28V L.E.D.s | Alum. | 11-07482 | . |
| 754RW-14V | 2 Red 2 White 14V L.E.D.s | Alum. | 11-04395 | . |
| 754RW-28V | 2 Red 2 White 28V L.E.D.s | Alum. | 11-04396 | . |
| 754R-14V | 4 Red 14V L.E.D.s | Black | 11-07483 | . |
| 754R-28V | 4 Red 28V L.E.D.s | Black | 11-07484 | . |
| 754W-14V | 4 White 14V L.E.D.s | Black | 11-07485 | . |
| 754W-28V | 4 White 28V L.E.D.s | Black | 11-07486 | . |
| 754RW-14V | 2 Red 2 White 14V L.E.D.s | Black | 11-07487 | . |
| 754RW-28V | 2 Red 2 White 28V L.E.D.s | Black | 11-07488 | . |

| Accessories | Body Color | Part No. | Price |
|-------------|------------|----------|-------|
| Flush Mount | ALUMINUM | 11-04397 | . |
| Flush Mount | Black | 11-07502 | . |



LED MAPLIGHTS

The body of the maplight is constructed of aircraft grade 6061 T6 aluminum and black anodize treated for protection from corrosion. The LED bulbs and internal components are high quality components, and are engineered to withstand 150% of their rated voltage without damage. The wire is

tefzel coated mil-spec wire used in certified aircraft and the component potting material is a two part epoxy making this maplight highly vibration and shock resistant. The average bulb life of the LED used in this product in excess of 20,000 hours of use and the maplight draws only 20 milliamps of power with virtually no heat produced.

The red LED used in this maplight gives the most light available in environments where night vision must be retained. This "LED Maplight" is built to be durable, simple to operate, lightweight and compatible with dimming systems. Each "LED maplight" is tested twice during production for maximum quality and customer satisfaction. The "LED maplight" is intended for use in Experimental, Amateur-Built aircraft only.

MAPLIGHT I - 4 LEDs

| Color | Voltage | Part No. | Price |
|-------|---------|----------|-------|
| Red | 12 | 11-04387 | . |
| Green | 12 | 11-04388 | . |
| White | 12 | 11-04389 | . |
| Red | 24 | 11-04390 | . |
| Green | 24 | 11-04391 | . |
| White | 24 | 11-04392 | . |

MAPLIGHT II - 6 LEDs

| Color | Voltage | Part No. | Price |
|-------|---------|----------|-------|
| Red | 12 | 13-06620 | . |
| White | 12 | 13-06621 | . |
| Blue | 12 | 13-06622 | . |
| Green | 12 | 13-06623 | . |
| Red | 24 | 13-06624 | . |
| White | 24 | 13-06625 | . |
| Blue | 24 | 13-06626 | . |
| Green | 24 | 13-06627 | . |

MAPLIGHT II - 6 LEDs Dual Color

| | | | |
|-------------|----|----------|---|
| White/Red | 12 | 13-06628 | . |
| White/Blue | 12 | 13-06629 | . |
| White/Green | 12 | 13-06630 | . |
| White/Red | 24 | 13-06631 | . |
| White/Blue | 24 | 13-06632 | . |
| White/Green | 24 | 13-06633 | . |

Accessories

Surface Mount Adapter SMA/MMIIP/N 13-06651



1512 SERIES LED EYE-BALL COCKPIT LIGHTS

These lights work great in overhead consoles and tight spaces. 30 degree adjustable angle, 360 degree adjustable rotation. LED technology draws less current (40 mA max.) and last much longer, (20,000+ hours.) and are fully dimmable.

The light is available in three light color version, two housing colors, and two voltages. The light colors are four red LED's, four white LED's, and two red/two white LEDs that can be lit separately with a SPDT switch (not included.) The housing colors are black or clear anodize. There are two voltages: 14 and 28. The light has a 1.45" flange and mounts in a 1.25" hole. The light requires 1" behind the mounting surface and is only 5/8" in front. It will accept up to 0.2" thick mounting surface.

| Model | Description | Body | Part No. | Price |
|------------|---------------------------|-------|----------|-------|
| 1512R-14V | 4 Red 14V L.E.D.s | Alum. | 11-07489 | . |
| 1512R-28V | 4 Red 28V L.E.D.s | Alum. | 11-07490 | . |
| 1512W-14V | 4 White 14V L.E.D.s | Alum. | 11-07491 | . |
| 1512W-28V | 4 White 28V L.E.D.s | Alum. | 11-07492 | . |
| 1512RW-14V | 2 Red 2 White 14V L.E.D.s | Alum. | 11-07493 | . |
| 1512RW-28V | 2 Red 2 White 28V L.E.D.s | Alum. | 11-07494 | . |
| 1512R-14V | 4 Red 14V L.E.D.s | Black | 11-07495 | . |
| 1512R-28V | 4 Red 28V L.E.D.s | Black | 11-07496 | . |
| 1512W-14V | 4 White 14V L.E.D.s | Black | 11-07497 | . |
| 1512W-28V | 4 White 28V L.E.D.s | Black | 11-07498 | . |
| 1512RW-14V | 2 Red 2 White 14V L.E.D.s | Black | 11-07499 | . |
| 1512RW-28V | 2 Red 2 White 28V L.E.D.s | Black | 11-07501 | . |



PRECISE FLIGHT HID LANDING & TAXI LIGHTS

HID Lighting provides the brightest illumination available. Increase Safety Increase Visibility 6X Brighter than Standard Lights 5000 Hour Bulb Life Reduce Heat & Power Consumption For Experimental Aircraft Only Only 35 Watts, Equivalent to 200

| Type | Shape | Voltage | Part No. | Price |
|----------------|-----------|---------|----------|-------|
| Landing Lights | Round | 12V | 11-05588 | . |
| | Round | 24V | 11-05589 | . |
| | Rectangle | 12V | 11-05590 | . |
| | Rectangle | 24V | 11-05591 | . |
| Taxi Lights | Round | 12V | 11-05582 | . |
| | Round | 24V | 11-05583 | . |
| | Rectangle | 12V | 11-05584 | . |
| | Rectangle | 24V | 11-05586 | . |

SUPER NOVA STROBE



Provides the most powerful flash circuitry available to the light-plane market. Computer-controlled design allows the pilot to select from several different flash patterns, sequencing four ultra-bright compact flash heads, alternating two pairs of flashes, or operating either two or four flash heads with either a fast double or quadruple flash. A powerful 60 joules of energy.. Operates from any 12-30 volt DC source. Current draw: 5.5 amps @ 12VDC Input power: 70 watts Output power: 60 watts System weight: 4 lbs Power pack size: 5 x 6 x 2 P/N SUPERNOVA

EL

LED LIGHTING - INSTRUMENTS LIGHTING



LED CABIN LIGHTS

- 12 very bright LEDs in an ABS housing.
- 12 or 24 volts, very low current draw (under 80 mA);
- Compact size - just 3 x 2 x 1" with side mounting flanges for easy installation.
- Broad, "flood" lighting distribution
- Extremely resistant to vibration, shock and

moisture

- Ideal for baggage area and utility light illumination

| Description | P/N | Price |
|-----------------------------------|----------|-------|
| Pilot LED Cabin W003-12 LED Red | 11-05521 | . |
| Pilot LED Cabin W003-12 LED White | 11-05522 | . |
| Pilot LED Cabin W003-12 LED Blue | 11-05524 | . |



CABIN LIGHTS

Designed for use in experimental aircraft, these LED lights are excellent for cabin lighting, work station lighting, interior lighting, or cargo space illumination. They feature small size (2" x 3"), low power draw (less than 95ma, and weigh less than 3 ounces. The basic module consists of 3 rows of LED's potted with epoxy in a strong plastic housing. This makes it extremely resistant to vibration and moisture. The modules are very efficient, and are available in 12 or 24V and in super bright white or red colors. Furnished with a diffused light pattern and a 3 ft. cable length. No on-off switch.

Example Uses for These Convenient Lights Include:

- Cabin Lighting
- Work Station Lighting
- Interior Illumination of Work Area (Without Loss of Night Vision)
- Illumination of Operator Controls
- Cargo Space Illumination

Benefits:

- Small Size - Only 2" x 3"
- Low Power Draw - Typically Less Than 95mA
- Customizable to Meet your Unique Needs
- Low Cost
- Weight is Less Than 3 Ounces

12V Red LED..... P/N 11-02880
 24V Red LED..... P/N 11-02883



MINI LED SPOT LIGHTS

- For experimental aircraft
- High intensity, dimmable multi-LED lamps
- Easy to install
- Flexible pivot mounts
- 1.75" length, 1" wide (at lens), 1.75" height (with base)
- 12 volts, less than 50mA
- Metal housing available in Black and Aluminum
- Red and White LED Colors

W003-MiniSpot (Silver/Red)

| Description | P/N | Price |
|---|----------|-------|
| Silver Case / Red LED - P/N #W003-MINISPOT (Silver/Red) | 11-05517 | . |
| Silver Case/ White LED - P/N#W003-MINISPOT (Silver/White) | 11-05518 | . |
| Black Case/ Red LED - P/N#W003-MINISPOT (Black/Red) | 11-05519 | . |
| Black Case / White LED - P/N#W003-MINISPOT (Black/White) | 11-05520 | . |

EL

LED MAP LIGHT, DOME, AND BAGGAGE AREA LIGHTS

LED UNDER-PANEL MAP LIGHT

- Three very bright LEDs in an ABS housing.
- Compact size, just 2" long. #4 holes for horizontal mountng

- 12 volts, low current draw (under 40 mA)
- Ideal for map lighting or utility installations
- When located under dash or instrument panels, this map light places light horizontally - to light console panels, maps, etc..



LED DOME AND BAGGAGE AREA LIGHTS

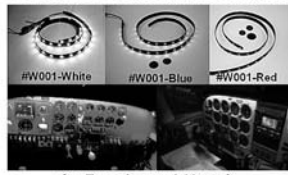
- Compact (1-1/2") chrome housing with four very bright 4 LEDs
- 12 volts, very low current draw (under 40 mA)

For experimental aircraft only

| Description | P/N | Price |
|---------------------------------------|----------|-------|
| Pilot LED Under Panel W003- Map Light | 11-05527 | . |
| Pilot LED Dome W002-4 White | 11-05525 | . |
| Pilot LED Dome W002-4 Red | 11-05526 | . |

INSTRUMENT PANEL LIGHT STRIP

Flexible LED Instrument Lights



Flexible LED Instrument Lights

- Dimmable LEDs encased in a flexible resin strip
- Ideal for mounting under glare shields for instrument panel lighting
- Available in White, Red and Blue LEDs
- Can be trimmed every 2-1/2 inches (every 3 LEDs)

for Experimental Aircraft

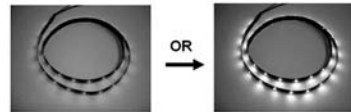
- Easy-to-install, waterproof, shockproof and requires no inverter to operate.
- Draws only 83 mA, 12 volts DC, and has a service life of over 10,000 hours
- 35" length, 3/8" width and 1mm high. Installs in minutes with double-sided tape

| Description | P/N | Price |
|-----------------------------|----------|-------|
| 12V LED Light Strip - Red | 11-05224 | . |
| 12V LED Light Strip - Blue | 11-05225 | . |
| 12V LED Light Strip - White | 11-05226 | . |
| 24V LED Light Strip - Red | 11-06828 | . |
| 24V LED Light Strip - Blue | 11-06829 | . |

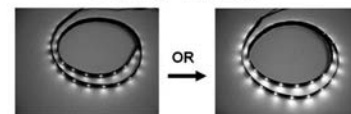
FLEXIBLE LED INSTRUMENT LIGHTS - DUAL COLOR

- Dimmable LEDs encased in a flexible resin strip.

Dual Color - Red/White



Dual Color - Blue/White



- Identical to standard Flexible LED strips but with twice the LEDs. Permits independent control of the RED and White or Blue and White colors.

- Ideal for using White lights for loading/unloading or in cloudy conditions and MIX or use of colored lighting during dusk or night conditions.

- Same dimensions and features of standard Flexible LED

lights: power consumption no greater than 160mA.

| Description | P/N | Price |
|---|----------|-------|
| Dual Flexible LED Instrument Light W001-Dual Red | 11-05511 | . |
| Dual Flexible LED Instrument Light W001-Dual Blue | 11-05512 | . |

FLEXIBLE LED INSTRUMENT LIGHTS - WITH CIGARETTE LIGHTER AND DIMMER



For production aircraft OR experimental aircraft

- The same quality Dimmable LEDs as our standard Flexible LED instrument Lights but with a Cigarette Lighter plug and in-line dimmer control
- Ideal for non-permanent installation in aircraft and other vehicles
- Power is supplied by the Cigarette Lighter plug (12 Volt systems only)

- In-line dimmer controls lighting level
- Available in Red, White or Blue LEDs.
- Ideal for mounting under glare shields for instrument panel lighting
- Can be trimmed every 2-1/2 inches (every 3 LEDs)
- Easy-to-install, waterproof, shockproof and require no inverter to operate.
- Draws only 83 mA, 12 volts DC, and has a service life of over 10,000 hours
- LED is 35" length, 3/8" width and 1mm high.

| Description | P/N | Price |
|---|----------|-------|
| Flexible LED With Cigarette Lighter W003- CLA Red | 11-05513 | . |
| Flexible LED With Cigarette Lighter W003- CLA White | 11-05514 | . |
| Flexible LED With Cigarette Lighter W003- CLA Blue | 11-05515 | . |
| Flexible LED With Cigarette Lighter Dimmer Kit | 11-05516 | . |

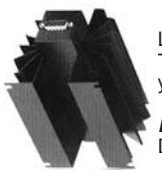
BATTPACK BATTERY BACKUP



The BattPack Battery Backup System can be used as an emergency/secondary power source for aircraft lighting. The 14V or 28V system will provide up to one hour or more of lighting for the FiberLite instrument lighting system (that uses LED light sources) or the Glow Strip (electroluminescent lamp) glare shield lighting system or for other low current draw lighting such as internally lighted instruments. The system includes the battery holders, a three position switch (normal, off, emergency), engraved placard and tefzel hook-up wire.

14V - BP12V.....11-06595 28V - BP24V..11-06596

DIMMING SYSTEMS - COCKPIT LIGHTS



AMERI-KING LIGHT DIMMERS

Linear Designed, Single, Triple, Quad outputs. FAA TSO-C71 approved. Input: +14 Vdc or + 28 Vdc. One year warranty. Optional extension of three years.

Features: • Short Circuit Protection. Solid State Linear Design. D-Sub/Miniature AMP connector included

| Description | Part No. | Price |
|--------------------------------|----------|-------|
| AK-551-LD-S 1 POT 6 AMP 0-14V | 11-06227 | . |
| AK-551-LD-S 1 POT 6AMP 0-28V | 11-06228 | . |
| AK-551-LD-S 1 POT 12AMP 0-14V | 11-06229 | . |
| AK-551-LD-S 1 POT 12AMP 0-28V | 11-06230 | . |
| AK-551-LD-S 1 POT 18AMP 0-14V | 11-06231 | . |
| AK-551-LD-S 1 POT 18AMP 0-28V | 11-06232 | . |
| AK-551-LD-S 1 POT 24AMP 0-14V | 11-06233 | . |
| AK-551-LD-S 1 POT 24AMP 0-14V | 11-06234 | . |
| AK-551-LD-D 2 POT 12AMP 0-14V | 11-06235 | . |
| AK-551-LD-D 2 POT 12-AMP 0-28V | 11-06236 | . |
| AK-551-LD-D 2 POT 24AMP 0-14V | 11-06237 | . |
| AK-551-LD-D 2 POT 24AMP 0-28V | 11-06238 | . |
| AK-551-LD-Q 4 POT 24AMP 0-14V | 11-06239 | . |
| AK-551-LD-Q 4 POT 24AMP 0-28V | 11-06240 | . |
| AK-551-LD-O 8 POT 24AMP 0-14V | 11-06241 | . |
| AK-551-LD-O 8 POT 24AMP 0-28V | 11-06242 | . |



SOLID STATE LIGHT DIMMING KIT

Economical solution for the dimming of aircraft interior lighting. This heavy-duty solid state dimming kit by Superior Panel Technology includes a potentiometer with built-in off switch and 115W power transistor mounted to a heat sink. The supplied colored Mil Spec wire and very easy to follow wiring diagram allows the aircraft builder to customize the wiring harness to fit individual needs. When compared to rheostats, this unit provides more even dimming when a combination of LEDs, incandescent bulbs and electroluminescent lamps (such as SPT's Glow Strips) are used. Appropriate for both 14V and 28V systems. P/N 11-00846.....



LIGHT DIMMING KIT

Kit includes a Mil.Spec Potentiometer, Mil. Spec Power transistor mounted to a heatsink and a wiring harness. Breaker Size: 2A @ 14V, 1.5A @ 28V, Operating Range: 0-32 VDC, Current: 1.4A @ 14V, 0.7A @ 28V, Power: 20W P/N 11-02082.....



PANEL LIGHT DIMMING RHEOSTATS

These high-quality rheostats are used in production aircraft to dim instrument panel lights. Size: 1-9/16" dia. x 2-1/4" long. Mounts in 3/8" dia. panel hole. Shaft is 1/4" dia. w/ flat for knob set screw. New manufacture. Power Rating: 25 Watts. 0-8 OHM Panel light dimming retrostat..... P/N 0144 0-15 OHM Panel light dimming retrostat... P/N 5150



FINGER GRIP KNOB

Finger grip knob or rheostats. 1-1/2" Diameter, 1/4" Hole. P/N 5150



LC-40E/LC-40 LIGHTING CONTROLLERS

The LC-40e comes in an anodized brushed aluminum chassis. Features extra control knob sensitivity at dim end of the lighting range where it is needed most. It is microcontroller controlled and has continuous over voltage, current limit & fault protection. Each channel can handle 1.5 amps. LC-40E P/N 11-03366.....

MULTIPLE CIRCUIT SOLID STATE LIGHT DIMMERS



Choose from 2, 3, or 4-circuit heavy-duty 115W light dimming systems by Superior Panel Technology. Circuit board design with pin connector allows for easy and neat wiring. Mil Spec Tefzel color-coded wire is included. Unlike rheostats, this system will provide even dimming of incandescent lights, electroluminescent lamps (such as the SPT Glow Strips) and LEDs when used in combination on the same circuit. A separate control switch (with circuit breaking off position) is included for each circuit.

- 2 Circuit.....P/N 11-02046
- 3 Circuit.....P/N 11-02047
- 4 Circuit.....P/N 11-02049



VAL CLA 500 COCKPIT LIGHTING ASSEMBLY

The CLA 500 is a Multiple Circuit, Solid State Cockpit Lighting Assembly that will accommodate (4) independent dimmer lighting circuits such as instruments, sub panels, avionics, eyebrow, overhead, flood, and post lamps etc. The CLA 500 unit itself measures 5"l x 4.7" w x 1.5" h; wt: 0.8 lbs. The unit is rated at 14/28VDC input at 2.5 amps max per circuit. The CLA 500 comes complete with 4 on/off dimmer control switches and connector assembly. The CLA 500 carries a full 1-yr. factory warranty. P/N 11-05700(14v) P/N 11-04592(28v)



COCKPIT LIGHTS

TYPE C4A - A multi-purpose light providing narrow spotlight or floodlight beam. Rotate dial for red or white lens. Push-button for instant full light. Adjustable rheostat. Coiled cord & snap-in mounting base makes light portable in cockpit area. New mfg. Most suitable for larger aircraft. 12V P/N 11-03921 24V P/N 11-03922

MINIATURE EYEBALL COCKPIT LIGHTS

A low power, low intensity light for continuous use as chart or instrument light, allowing easy viewing of magenta lines and figures on sectional charts as well as red lines on instruments without wiping out night vision. Black acrylic ball with 1/4" aperture rotates in ABS housing for full swivel adjustment. 1.5" dia. overall. Mounts with 3 screws. Wt: .5 oz. Power consumption 1.12W @ 14V. Bulb life approx. 3500 hrs. Ideal for small homebuilts. Used on Voyager's world flight. P/N 11-07800

MOD1 OVERHEAD CONSOLE

The Mod1 Overhead Console is mounted to top of cabin or top wing skin with four stainless steel screws into the four standoffs or posts on Console. All lights are ordered separately. Weight: 3.8 oz. P/N 11-06003.....



EYEBALL COCKPIT LIGHTS

These high quality cockpit lights are engineered to match the eyeball swivel vents on the page on Air Vents in this catalog. Simple twist on/off operation provides white beam for cockpit lighting. Made from 2024T351 aluminum. Diameter: 2.75". Has 4 mounting holes (1/8" dia.) which are spaced 2-3/8" apart on a mounting plate with a thickness of .71". Made in USA.

- Black (no bulb)..... P/N 05-01401.....
- Gray (no bulb)..... P/N 05-01402.....

Order 14V or 28V bulb separately 14V..... P/N 11-04197..... 28V..... P/N 11-04172.....



NIGHT FLIGHT LIGHT

Red, Blue and Green lights independently dimmable with emergency battery that automatically operates in case of total power failure at the same adjustment. The unit is attached with Velcro in any position and connected to the power with cigarette lighter cord (provided), or directly connected to the harness in the vehicle with a fuse of 2 Amp in line. The combination of the 3 colors creates the perception of white light. Measurements: 2.36"x1.58"x1.22". Input Power: 12 volts to 28 volts. Warranty: One year warranty parts and labor in the factory (the lifetime of the components of this unit is approximately 50,000 hours.) P/N 11-06482



K11 AIRCRAFT PANEL DIMMER

The A & T Labs panel light dimmer provides features and functionality not available in other commercial dimmer products. Features: • 3 outputs with a tracking capability - One output is the "Master", and the other two can be set to track the master from 0 to any set voltage behind the master. This allows items on the dimmer bus to be grouped according to their relative brightness for better overall tracking. For example, the Vision Micro- systems products are typically way out of line in brightness compared to others at the same voltage • Quiet analog design • Multi-channel tracking capability • Daylight full-on over-ride capability for GPS annunciators, etc. • Current limiting/short circuit protection • Thermal protection • Low drop-out voltage (ability to adjust the dimmer bus up as close to the battery voltage as possible) • Photocell light sensor automatic control capability • Low cost • Performance: • Voltage range: 0 to Input supply - .6V • Output current - Depends on ventilation - Each channel is capable of 5 amps, practical dissipation limitation is ~ 5 amps total for all channels. (For 28 volt systems, current limit is 1 A per channel) Unit connections are made through a DB15 connector, and are easy to integrate into the rest of the aircraft wiring. P/N 11-02244



INSTRUMENT LIGHTING

MAX DIM DIMMER CONTROL UNIT

5-35 VDC 0-12.5A Control 350 Watts in a 1-1/4" Diameter package. Complete compact, light weight, powerful, solid state dimmer. Great for light wedges. FAA STC Approved. PMA'd. Features: • Aircraft Lighting Boat Cruiser Cabins. • Instrument Panels. • Hundreds of DC Lighting Control applications P/N 11-05738.....



MAXPULSE LANDING LIGHT CONTROL/PULSER - (STC'D)

The MaxPulse is a solid state landing light controller. The small size and one ounce weight places this controller in a class of its own. Extreme long life, low temperature operation, high current capability, noise free operation and small size makes it a ideal landing light controller for all aircraft. This new STC version sports eight functional pulse, flash and steady state modes of operation. It is also an ideal replacement for old technology controllers requiring large heavy heat sinks and or noisy relays as part of the installation. STC'd P/N 11-06998..... NON-STC'd P/N 11-05737.....

For Complete info on the Non-STC'D version please visit our website at www.aircraftspruce.com

UMA INSTRUMENT LIGHTING - PMA'D



Advanced lighting system to replace your existing post or indirect lighting system with a electroluminescence

light strip contained in a bezel allowing a bright 360° uniform light. EL lighting does not use bulbs which create heat and require replacements. The specially designed EL light is placed in a bezel and is simply mounted between the instrument and the panel in just minutes without modification to the panel or instrument. Only the white lighting color is PMA'd. Copies of approved 337 installations are available upon request.

3-1/8" Lighting Bezel

Knob Cut-out

P/N 2-30-G, 2-30-W or 2-30-R

No Cut-out

P/N 2-31-G, 2-31-W or 2-31-R

Center Cut-out

P/N 2-33-G, 2-33-W or 2-33-R

Double Cut-out

P/N 2-34-G, 2-34-W or 2-34-R

2-1/4" Lighting Bezel

Knob Cut-out

P/N 2-20-G, 2-20-W or 2-20-R

No Cut-out

P/N 2-21-G, 2-21-W or 2-21-R

Double Cut-out

P/N 2-24-G, 2-24-W or 2-24-R

Standard lighting colors are White(W), Green(G) or Red(R). Inverter is required.

Price per Bezel

INVERTERS FOR UMA LIGHTING -

5V (JETS) P/N 10-02086.....

14V P/N 10-02083.....

28V P/N 10-00986.....

Each inverter will run up to 12 lighting wedges.

Rheostat..... P/N 6002.....

Elec. Wire Kit* P/N 10-02085.....

*Contains AMP connector and connecting pins

EL

UMA ELECTRO-LUMINESCENT LIGHT STRIPS



UMA, Inc. now offers an ultra-thin (0.006") flexible self-adhesive long-life light strip based on the same technology that is used in our EL Light Bezel. Since there is no filament, these light strips are not bothered by vibration or rapid changes in temperature. Perfect for use under a glare shield, or for any other interior lighting need (both aircraft and automotive). Length may be cut as needed. Available colors are Aviation Green & White/Blue. Power Inverter required.

| Dimensions | Color | Part No. | Price |
|--------------|----------------|----------|-------|
| 0.5"W x 25"L | White/Blue | 10-00321 | . |
| 0.5"W x 25"L | Aviation Green | 10-00322 | . |
| 1.5"W x 18"L | White/Blue | 10-00323 | . |
| 1.5"W x 18"L | Aviation Green | 10-00324 | . |

LEADING EDGE LANDING LIGHT KIT



Kit consists of (2) GE #4509 12V, 100W sealed beam lamps, brackets for installation, switch, switch plate, 60 ft. of 2-conductor hookup wire & instructions. Size: 4.5"hx5.25"w x2.25"d w/ bulbs installed.

Complete Kit P/N 11-08000.....

Replacement #4509 Bulbs P/N 11-03796.....

NULITE INSTRUMENT LIGHTING SYSTEM



Replace your existing lighting system of post lights or indirect lighting using the latest technological developed in optical enhancements. The NULITE uses dual incandescent bulbs with a rated life of 10,000 hours in a translucent material designed to look like an internally lighted unit. Nulites are easily installed by anyone in just minutes and are pre-cut to fit all standard instruments operating on 14, or 28 Volts. NULITE light wedges can be installed over the instrument or between the panel and the instrument. One wire is connected to ground and the other to a dimmable buss. Installation takes about 30 minutes for each unit and does not require any special tooling. The instrument is not altered in any way therefore only a log book entry is required. FAA/PMA approved.

| Description | Part No. | Price | Description | Part No. | Price |
|------------------------|----------|-------|-----------------------|----------|-------|
| 14V 2-1/4" | 11-03851 | . | 28V 3-1/8" for VSI | 11-01230 | . |
| 14V 2-1/4" Left cutout | 11-01257 | . | 14V 3-1/8" Rt. cutout | 11-02574 | . |
| 14V 2-1/4" Rt. cutout | 11-04373 | . | 28V 3-1/8" | 11-03852 | . |
| 28V 2-1/4" | 11-02571 | . | 28V 3-1/8" Lt. cutout | 11-02762 | . |
| 28V 2-1/4" Left cutout | 11-04374 | . | 28V 3-1/8" Altimeter | 11-02851 | . |
| 28V 2-1/4" Rt. cutout | 11-04375 | . | 28V 3-1/8" Rt. cutout | 11-03853 | . |
| 14V 3-1/8" | 11-02572 | . | 14V 3-1/8" R/L cutout | 11-00818 | . |
| 14V 3-1/8" Lt. cutout | 11-02673 | . | 28V 3-1/8" R/L cutout | 11-01352 | . |
| 14V 3-1/8" Altimeter | 11-02573 | . | 14V, 4" light bar | 11-02788 | . |
| 14V 3-1/8" for VSI | 11-01099 | . | 28V, 4" light bar | 11-02789 | . |

FIBERLITE INSTRUMENT LIGHTING SYSTEM



FiberLites, by Superior Panel Technology, offers an innovative FAA approved instrument and label lighting system that uses fiber optics to evenly illuminate aircraft instruments with easily accessible, long lasting, LED light sources. Fiber-optics are affixed to specially designed bezels that are sandwiched between the instrument and the panel for appearance of an internally lighted instrument. The advantages of using FiberLites over other lighting devices are a) easier wiring, three LED light sources will light up all the instruments on most panels b) the LEDs are very long lasting, however, if they ever do need to be replaced, they are easily replaced without having to remove any instruments c) FiberLites provide even 360 degree lighting around the instrument, d) the instrument is not altered in any way e) FiberLites can be used to backlight printed labels. The following items are included in the FiberLite package. a) Three LED light sources with appropriate resistor (must specify 14 or 28V system). b) Eight 3/8" instrument bezels c) You can substitute TWO 2 1/4" inch bezels for each 3 1/8" inch instrument light. For example a package could consist of SIX 3 1/8" and FOUR 2 1/4" instrument lights. Bezels come in 3 sizes (3 1/8" standard with four screw holes (FL318), 3 1/8" with cut-out in corner that can be rotated either for a right or left hand cut-out (FL318CO) and the 2 1/4" bezel with four screw holes (FL214). Please specify the bezel sizes, and quantity and the voltage of the aircraft. A solid state dimmer is needed to dim LEDs. Order Superior Panel Technology's single circuit dimmer (part number 11-00846). A great compliment to this product is the BattPack battery backup system.

FiberLite Package Price P/N 11-04009.....

Individual Parts Pricing:

2-1/4" inst..... P/N 11-04000.....
 3-1/8" inst..... P/N 11-04002.....
 3-1/8" inst w/cut out..... P/N 11-04003.....
 14V LED Light Source..... P/N 11-03998.....
 28V LED Light Source..... P/N 11-04001.....
 Solid State Dimming Kit..... P/N 11-00846.....

FIBERLITE ILLUMINATED LABELING

BATT INST RADIO TRIM PROP GEAR LIGHT

Backlite the wording on your panel with FiberLite fiber optics and custom printed labels. A single fiber optic ribbon can illuminate a label strip up to 8.2" in length. You can use two fiber optic ribbons for labels up to 14" in length. Fiber optic tails are 30" in length to allow for remote light source placement. Use either the FiberLite 8-port light source (see above) or an ultra-bright small LED light source. One port on the 8-port light source will illuminate two 8" labels (or one longer label that utilizes two fiber optic ribbons). The LED light source can illuminate up to seven fiber optic ribbons. Mounting channel is 5/16" in height and the label has a black background with white lettering. The FiberLite fiber optic ribbons can also be used to backlite reverse engraved panels.

| Labels | Part No. | Price |
|--|----------|-------|
| Single line label up to 8.2" in length | 11-00224 | . |
| Label 8.3" - 14" in length | 11-00225 | . |
| Above labels include mounting channel, custom printed label, fiber optic ribbon and connectors | | |

| Light Sources | Part No. | Price |
|---|----------|-------|
| 14V LED Light Source | 11-03999 | . |
| 28V LED Light Source | 11-07838 | . |
| 8-port light source see above The LED light sources are wired using appropriate resistor. | | |

| Fiber Optic ribbons - for Backlighting Reverse Engraved Panels | | | | | |
|--|----------|-------|-------------|----------|-------|
| Size | Part No. | Price | Size | Part No. | Price |
| 1/4" x 6" | 11-04005 | . | 1/4" x 8.7" | 11-04006 | . |
| Ribbons come with 30" leads and connectors for light source chosen | | | | | |

PULSE LIGHT SYSTEMS - LANDING/TAXI LIGHTS

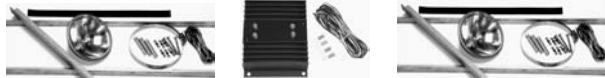


PULSAR LANDING LIGHT PULSE LIGHT SYSTEM

Pulses your landing or taxi light with a steady solid state electronic controller I/C. Filtered for quiet operation. Bulb life is not shortened, in fact bulb life is extended 10Xs longer; because the filaments never completely go out so there is no thermal shock turn-on. Pulsar's controlled pulse rate keeps the filament running much cooler than if the bulb was on continuously. Even longer life w/ GE Halogen lights. Your panel landing or taxi light switch is turned OFF, Pulsar's separate On/Off switch turned ON, your light will begin to pulse. If you are landing at night, and want your lights on steady, you simply reach to that landing light switch (which has been off during the pulse mode) and turn it ON. Your landing light or taxi light will come on steady because Pulsar has not changed or altered your aircraft wiring. Owner installed in 30 minutes. Pulsar is approved for all 100 Watt GE lights. Weight: 3.5 oz.; Size: 3.25" length x 2" width x 1" height. The Standard Pulsar system uses a relay switch. The MOSFET Pulsar system (Metal oxide semi-field effect transistors) uses advanced P-channel technology which does not fail (no transistors or relays) and each pulse is brighter, than other older Transistorized Pulse-Lights. Wing-Tip Aircraft Owners can easily look out the window to see their landing lights. AvTek's Green-LED allows pilot with a Nose-Landing-Light to know from the cockpit if the light is: Pulsing, on steady or out. Only AvTek's Pulsar has these extra features. MOSFET comes with all features. When ordering Pulsar, please indicate how many landing lights you wish to pulse and where they are in your aircraft, as well as your aircraft make and model. Dual Alternating Pulsing lights should never be side by side. Instead dual lights need to be located one in each wing. Two lights side by side can be pulsed together, or pulse just one light and leave the other light off.

| Description | Bulb | Part No. | Price |
|---|-------------------------------|----------|-------|
| Regular Pulsar with relay, Recommended for occasional flyers. | Standard halogen 50Watt Bulbs | 11-01258 | . |
| Pulsar for planes with one light on each wing, Recommended for frequent flyers, Mosfet Never needs repair, no transistors/relays | Quartz Q-4509 or Q-4591 | 11-04408 | . |
| Pulsar for planes with two lights on each wing, Recommended for frequent flyers, Mosfet Never needs repair, no transistors/relays | Quartz Q-4509 or Q-4591 | 11-04625 | . |
| AvTek Power MOSFET Pulsar Pulsing Light for 1 Light with speed select and built-in LED | Standard halogen Bulbs | 11-05124 | . |

LANDING LIGHT AND FLASHER KIT



This Superior Panel Technology kit includes two bright 14V halogen bulbs, the SPT landing light flasher unit with wiring, toggle switch with attractive reverse engraved cover plate and the needed material to install the two lights in the wings' leading edge outboard bays. These halogen lamps are significantly brighter than both 50 and 100W incandescent bulbs. The solid state flashing system alternately flashes your landing lights and greatly extends the life of the halogen bulbs. The landing lights are easily aimed with the spring-loaded adjusting screws. The flashing unit is easy to install by following the comprehensive installation instructions. One 4PDT switch is added to the panel, giving you the option to switch from the flashing mode to the steady landing light mode. 14V. **FOR EXPERIMENTAL AIRCRAFT ONLY.**

P/N 11-02051

SPT LANDING LIGHT FLASHER

Increase the visibility of your aircraft and give yourself that extra margin of safety. This solid state flashing system alternately flashes your landing lights so pilots in other aircraft and controllers in the tower will be able to see our aircraft much easier. The flasher unit extends the life of your landing lights since they run much cooler and its easy to install by following the comprehensive installation instructions. One toggle switch is added to the panel, giving you the option to switch the lights from the flashing mode to the landing mode. Choose the flashing unit based on the wattage of bulb used in the aircraft. For 14V systems only

FOR EXPERIMENTAL AIRCRAFT ONLY.

50W bulbs..... P/N 11-02070
100W bulbs..... P/N 11-02071



LIGHTSAVER

The Lightsaver prevents this massive inrush allowing the filament to draw the rated current even at turn on with no change in typical light output performance. The filament life increases up to 10 times due to reducing the stress induced by inrush current. This is something the lamp manufacturers don't want you to know. After all they are in the business of manufacturing replacement lamps for your aircraft. Installation is simple.

| Description | Part No. | Price | Description | Part No. | Price |
|-------------|----------|-------|-------------|----------|-------|
| 12 V 100W | 11-07316 | . | 24 V 150W | 11-07318 | . |
| 24 V 100W | 11-07317 | . | 24 V 250W | 11-07319 | . |

XEVISION LANDING & TAXI LIGHTS



XeVision™ super bright Xenon metal halide arc discharge landing & taxi lights for experimental aircraft. Light so bright and white you'd swear it's daylight; 500,00 candle power (3200 lumens) for our 35 Watt and more than 750,000 candle power (5400 lumens) for our 50 Watt systems – up to more than 8 times brighter than a standard 100 watt incandescent sealed

beam. High HID efficiency means less than half the amp draw and about 1/2 of the radiated heat of standard or Halogen lamps.

XeVision™ offers reliable HID pulsing capability based on the proprietary XeStrike™ series ballasts and the XePulse™ (patent pending) pulsing module. All XeVision HID lighting systems are tested up to 100,000 feet altitude. XeVision systems are warranted up to 35,000 feet for continuous fail-safe operation.

XeVision offers retrofit kits for direct replacement or complete lighting system kits for new aircraft installation, different lamp shapes/sizes available. Many installation locations are possible now with a variety of lamp shapes and sizes, extremely small form factor, and lower lamp housing temperatures. They are especially suited for tight spaces in composite aircraft. XeVision reflectors are made of metal, not plastic. High Intensity Discharge (HID) lighting is the most significant breakthrough in aviation lighting since the development of modern sealed beam lamps. XeVision offers "Certified" quality at a very competitive price with a 5 year warranty and up to 3,000 hour typical lamp life.

The XeStrike™ proprietary ballasts XV1D or XV4D are an integral part of all XeVision aircraft lighting systems with the following features: * 12 or 24 VDC voltage input. * Designed for pulsing or dimming of HID Xenon bulbs with the XePulse™ HID control module. * Designed for 35 watt or 50 watt output, 75 watt for special applications only. * Extremely low EMI/RFI in combination with third generation D1S bulbs with integrated igniter and double shielded silicone cables. * Digital power control for pre-programmable start-up algorithm.

| XeVision conversion kit & components | Key features & other information |
|---|--|
| XeVision XV-36-SL - Standard landing light conversion kit . With XV1D or XV4D ballast and D1S bulb. | Beam angle 9° horizontal & vertical. PAR 36 size. Preferred Application - PAR 36 conversion, lamp diameter 4-5/16" |
| XV-36-SL 35 Watt | P/N 11-01760 |
| XV-36-SL 50 Watt | P/N 11-05038 |
| XeVision XV-36-ST - Standard taxi light conversion kit . XV1D or XV4D ballast and D1S bulb. | Beam angle 55° horizontal & 10° vertical. Preferred Application - PAR 36 conversion, lamp diameter 4-5/16" |
| XV-36-ST 35 Watt | P/N 11-01761 |
| XV-36-ST 50 Watt | P/N 11-05037 |
| XeVision XV-46-SL - Landing light conversion kit . XV1D or XV4D ballast and D1S bulb. | Beam angle 10° horizontal & vertical. Preferred Application - PAR 46 conversion, lamp diameter 5-11/16" |
| XV-46-SL 35 Watt | P/N 11-01762 |
| XV-46-SL 50 Watt | P/N 11-05204 |
| XV-46-ST - Taxi light conversion kit . XeVision XV-46-ST taxi light conversion kit XV1D or XV4D ballast and D1S bulb. | Beam angle 50° horizontal & 8° vertical. Preferred Application - PAR 46 conversion, lamp diameter 5-11/16" |
| XV-46-ST 35 Watt | P/N 11-01763 |
| XV-46-ST 50 Watt | P/N 11-05208 |
| XV-22 - Landing or taxi light for external use like gear struts. XV1D or XV4D ballast and D1S bulb. | 15° horizontal & 10° vertical. Landing/taxi light conversion designations Preferred Application - Lamp fixture, rectangular, only 2.25" high 4.7" wide, and 4.2" deep. |
| XV-22 35 Watt | P/N 11-01765 |
| XV-22 50 Watt | P/N 11-05209 |
| XV-23 - Landing or taxi light in wing area or externally as on a gear structure. With XV1D or XV4D ballast and D1S bulb. | 20° horizontal & 8° vertical. Preferred Application - Lamp fixture, rectangular, only 2.25" high 4.7" wide, and 4.2" deep. |
| XV-23 35 Watt | P/N 11-01764 |
| XV-23 50 Watt | P/N 11-05210 |



REPLACEMENT LAMPS – GLARESHIELDS

UNIVERSAL REPLACEMENT LAMPS

All Universal Corporation lamps are appropriately approved by the FAA. Our long life incandescent and halogen lamps offer greater light output with increased life and reduced costs. All lamps feature heavy filament construction. Improved design and manufacturing techniques produce a lamp far superior in service with lower cost to the user and packaging provides maximum protection in shipping, handling and storage.



| Universal | Grimes | Whelen | Gen. Electric | Cessna | Piper | Aeroflash | Our P/N | Price |
|-------------|------------|----------|---------------|------------|---------|-----------|----------|-------|
| 12V125W | | | | C17312-3 | | 40-0028 | 040-0028 | . |
| 24V150W | - | - | - | - | - | 40-0003 | 040-0003 | . |
| U303 | | | GE-303 | 303 | | | 11-01948 | . |
| U327 | | | GE-327 | 327 | | | 11-01949 | . |
| U330 | | | GE-330 | 330 | | | 11-01950 | . |
| U387 | | | GE-387 | | | | 11-01951 | . |
| U1163 | 11631 | | | | | | 11-01953 | . |
| U1512 | 1512 | | | 1512 | | | 11-01954 | . |
| U1524 | 1524 | | | 1524 | | | 11-01955 | . |
| U1687 | 1687 | | | | | | 11-01956 | . |
| U1940 | 1940 | WRM-1940 | GE-1940 | 1940 | | | 11-01958 | . |
| U1982-SP | LP-1982SP | | GE-1982SP | | 761-214 | | 11-01960 | . |
| UA-7079B-12 | 1-7079B-12 | | | A-7079B-12 | | | 11-01962 | . |
| UA-7079B-24 | A-7079B-24 | | | A-7079B-24 | | | 11-01963 | . |
| UA-7512-12 | A-7512-12 | W1290-14 | | A-7512-12 | | | 11-01964 | . |
| UA-7512-24 | A-7512-24 | W1290-28 | | A-7512-24 | 753-478 | | 11-01965 | . |

GALAXY LANDING LIGHT BULBS

| Bulb # | Volts | Watts | Par # | Part No. | Price ea |
|--------|-------|-------|-------|----------|----------|
| 4313 | 13 | 250 | 36 | 11-03524 | . |
| 4509 | 13 | 100 | 36 | 11-02219 | . |
| 4509Q | 13 | 100 | 36 | 11-02220 | . |
| 4522 | 13 | 250 | 46 | 11-03525 | . |
| 4537 | 13 | 100 | 46 | 11-03526 | . |
| 4553 | 28 | 250 | 46 | 11-03527 | . |
| 4570 | 28 | 150 | 46 | 11-03528 | . |
| 4580 | 28 | 450 | 46 | 11-03529 | . |
| 4581 | 28 | 250 | 46 | 11-03530 | . |
| 4587 | 28 | 250 | 36 | 11-03531 | . |
| 4591 | 28 | 100 | 36 | 11-03532 | . |
| 4594 | 28 | 100 | 36 | 11-03533 | . |
| 4595 | 13 | 100 | 36 | 11-03534 | . |
| 4596 | 28 | 250 | 36 | 11-03535 | . |
| 4626 | 28 | 150 | 36 | 11-03536 | . |

GRAIN OF WHEAT INSTRUMENT BULBS



Replace burnt out Grain of Wheat Bulbs that are used to illuminate many instrument panels & instruments. These blue-white silicone booted lamps are filtered for illuminating integrally white-lighted aircraft instruments and panels as called out in MIL-L-27160. Available in 14/28V.

14V.....P/N 11-02052.....
28V.....P/N 11-02053.....

GRIMES REPLACEMENT FLASH TUBE



Replaces Grimes Part No. 5S-0221-1
P/N 11-10000.....

GRIMES LAMPS FOR EXTERIOR LIGHTS

| Lamp No. | Volts | Application | Price |
|----------|-------|--------------------------------|-------|
| 11-02601 | 12 | Wing Tip Lights, Model E | . |
| 11-02604 | 24 | Wing Tip Lights, Model E | . |
| 11-03661 | 12 | Rot. Bcn G7740A, G8400, D7080A | . |
| 11-03739 | 24 | Rot. Bcn G7740A, G8400, D7080A | . |

WHELEN LAMPS FOR EXTERIOR LIGHTS

| Lamp P/N | Application | Price |
|----------|------------------------------|-------|
| 11-03219 | Wing Tip Strobe, Xenon Flash | . |
| 11-03697 | Tail Strobe, Xenon Flash | . |
| 11-03225 | Flash Tube for SA & A450 | . |
| 11-03274 | Flash & Socket for A500 | . |
| 11-03216 | Halogen Lamp, A500/A555/A600 | . |
| 11-02602 | Replacement bulb (14V) | . |
| 11-02604 | Replacement bulb (28V) | . |
| 11-03897 | (12V) Rotating Beacon | . |

RAPCO REPLACEMENT LAMPS

| Rapco P/N | Our P/N | Price | Rapco P/N | Our P/N | Price |
|------------|----------|-------|------------|----------|-------|
| RAC17312-1 | 11-04356 | . | RA327 | 11-04363 | . |
| RAC17312-3 | 11-04357 | . | RA7079B-12 | 11-04364 | . |
| | | | RA7079B-24 | 11-04365 | . |
| | | | RA1512 | 11-04358 | . |
| | | | RA1524 | 11-04359 | . |
| | | | RA330 | 11-04362 | . |
| | | | RA7512-12 | 11-04366 | . |
| | | | RA7512-24 | 11-04367 | . |

SEE RAPCO LAMP CROSS REFERENCE CHART
AT WWW.AIRCRAFTSPRUCE.COM

WHELEN FLASH TUBE FOR GRIMES STROBES



This flash tube replaces Grimes P/Ns 30-0467, 30-1467, 30-1331, 30-1172-5, & 30-0515 series. Used on many Cessna aircraft.

W55-0221-1P/N 11-02780.....

GLARE SHIELD KIT



This Glare Shield kit provides the materials to produce a professional custom padded glare shield. The composite lay-up of material has passed the FAR 25.853 burn requirements and a burn certificate is provided with each kit. Kit includes 1.5 linear yards x 54" wide black SPT Leather-Like Vinyl, 1.5 linear yards x 48" wide 1/8" SPT open cell foam cushioning, two 1/16" x 8" x 50" ABS base material, aluminum stiffener, bull nose trim, template foam and cardboard template material. Complete easy to follow instruction sheet is provided to help you produce a professional looking padded glare shield that has the look and feel of leather. The electroluminescent Glow Strip Glare Shield Lighting (P/N 11-00848) fits nicely under this Glare Shield.

P/N 11-06324.....

GLOW STRIPS



Superior Panel Technology has developed a brighter, more uniform and longer lasting Glare Shield lighting system. The 18" x 1" Glow Strip electroluminescent lamps provide a beautiful, even (no hotspots) aviation green light output that is very easy on the eyes. The ultra-thin lamps (.065 including the adhesive backing) are very flexible and conform to the curves of the underside of the glare shield. The Glow Strips meet the FAA 23.853 burn test and FAA approval is pending. A solid state dimmer is recommended for dimming the lamps and the part number is listed below. A great compliment to this product is the BattPack battery backup system

Single Lamp - 14VP/N 11-00847.....
Double Lamp - 14VP/N 11-00848.....
Double Lamp - 28VP/N 11-00849.....
Solid State DimmerP/N 11-00846.....

Accessories

BattPack Battery Backup 14V - BP12VP/N 11-06595.....
BattPack Battery Backup 28V - BP24VP/N 11-06596.....

GE REPLACEMENT LAMPS

MINIATURE LAMPS FOR COCKPIT/WING/TAIL LIGHTS

| Lamp No. | Primary/Application | Volts | Amps/Watts | Part No. | Price | Lamp No. | Primary/Application | Volts | Amps/Watts | Part No. | Price |
|---|------------------------|-------|------------|----------|-------|---|-----------------------|-------|------------|----------|-------|
| B-31/2 Bulb 7/16" (11mm) Diameter | | | | | | | | | | | |
| GE-PR2 | Flashlight-2D Cells | 2.38 | 50A | 11-03069 | . | GE-327 | Eyebrow/Post Lt. | 28 | .04A | 11-04015 | . |
| GE-PR3 | Flashlight-3D Cells | 3.57 | 50A | 11-03071 | . | GE-328 | Panel Indicator | 6 | .20A | 11-04181 | . |
| GE-PR6 | Flashlight-2D Cells | 2.47 | 30A | 11-03070 | . | GE-330 | Eyebrow/Post Lt. | 14 | .08A | 11-04016 | . |
| GE-PR7 | Flashlight-3D Cells | 3.70 | 30A | 11-03072 | . | GE-334 | Panel Indicator | 28 | .04A | 11-04182 | . |
| GE-PR12 | Flashlight-5D Cells | 5.95 | 50A | 11-03073 | . | GE-387 | Panel Indicator | 28 | .04A | 11-04185 | . |
| GE-PR18 | Flashlight-6D Cells | 7.20 | .55A | 11-03074 | . | GE-388 | Panel Indicator | 28 | .04A | 11-03045 | . |
| B-6 Bulb 3/4" (19mm) Diameter | | | | | | | | | | | |
| GE-1308 | Reading Light | 28 | .56A | 11-03076 | . | T-21/4 Bulb 9/32" (7.5mm) Diameter | | | | | |
| GE-1309 | Aircraft Interior | 28 | .52A | 11-04162 | . | GE-786 | Emergency-Halogen | 6 | 2.0A | 11-03046 | . |
| GE-1317 | Emergency Landing | 6 | .51A | 11-03075 | . | T-3 Bulb 3/8" (9.5mm) Diameter | | | | | |
| G-31/2 Bulb 7/16" (11mm) Diameter | | | | | | | | | | | |
| GE-356 | Map Light | 28 | 17A | 11-04184 | . | GE-1978X | Navigation | 10 | 100W | 11-03047 | . |
| GE-1450 | Indicator | 24 | .035A | 11-03077 | . | GE-1982 | Navigation | 28 | 75W | 11-03048 | . |
| G-41/2 Bulb 9/16" (14mm) Diameter | | | | | | | | | | | |
| GE-55 | Panel Indicator | 7 | 2 CP | 11-04194 | . | T-31/4 Bulb 13/32" (10mm) Diameter | | | | | |
| GE-57 | Panel Indicator | 14 | 2 CP | 11-04195 | . | GE-43 | Indicator | 2.5 | .50A | 11-03049 | . |
| GE-425 | Lantern-4F Cells | 5 | .50A | 11-03079 | . | GE-44 | Panel Indicator | 6.3 | .25A | 11-04186 | . |
| GE-456 | Instrument | 28 | 17A | 11-03080 | . | GE-316 | Instrument | 6 | .70A | 11-03050 | . |
| G-5 Bulb 5/8" (16mm) Diameter | | | | | | | | | | | |
| GE-302 | Aircraft | 28 | 17A | 11-03038 | . | GE-400 | Aircraft | 28 | 10A | 11-03054 | . |
| GE-1315 | Emergency Lighting | 2.5 | 1.0A | 11-03037 | . | GE-757 | Indicator | 28 | .08A | 11-03053 | . |
| G-6 Bulb 3/4" (19mm) Diameter | | | | | | | | | | | |
| GE-81 | Wing/Tail | 6.5 | 1.02A | 11-04196 | . | GE-1813 | Wing/Tail-All Frosted | 14.4 | 10A | 11-04166 | . |
| GE-303 | Cockpit Light | 28 | 30A | 11-04172 | . | GE-1815 | Indicator | 14.0 | .20A | 11-03052 | . |
| GE-304 | Cockpit Light | 28 | 30A | 11-04173 | . | GE-1816 | Map/Dome Light | 13 | .33A | 11-04167 | . |
| GE-623 | Aircraft - 2 Filaments | 28 | .37A | 11-03041 | . | GE-1818 | Panel Indicator | 24 | .17A | 11-04168 | . |
| GE-1251 | Aircraft - 2 Filaments | 28 | 23A | 11-03039 | . | GE-1819 | Panel Indicator | 28 | .04A | 11-04169 | . |
| GE-1252 | Aircraft - 2 Filaments | 28 | 23A | 11-03040 | . | GE-1820 | Panel Indicator | 28 | 10A | 11-04170 | . |
| S-8 Bulb 1" (25mm) Diameter | | | | | | | | | | | |
| GE-305 | Wing/Tail | 28 | .51A | 11-04174 | . | GE-1873 | Aircraft | 28 | 17A | 11-03056 | . |
| GE-305AF | Wing/Tail-All Frosted | 28 | .51A | 11-03027 | . | GE-464 | Aircraft | 28 | 17A | 11-03055 | . |
| GE-306 | Wing/Tail | 28 | .51A | 11-04175 | . | GE-1864 | Panel Indicator | 28 | 17A | 11-04171 | . |
| GE-307 | Wing/Tail | 28 | .67A | 11-04176 | . | T-4 Bulb 1/2" (13mm) Diameter | | | | | |
| GE-307AF | Wing/Tail-All Frosted | 28 | .67A | 11-04176 | . | GE-1986 | Navigation | 28 | 250W | 11-03058 | . |
| GE-308 | Wing/Tail | 28 | .67A | 11-04177 | . | GE-1987 | Navigation | 28 | 150W | 11-03057 | . |
| GE-315 | Wing/Tail | 28 | .90A | 11-04180 | . | T-5 Bulb 5/8" (16mm) Diameter Electric Discharge Lamps | | | | | |
| GE-705 | Aircraft | 28 | .51A | 11-03028 | . | GE-1978X | Navigation | 10 | 100W | 11-03047 | . |
| GE-1619 | Instrument | 6 | 4.1A | 11-03025 | . | GE-1982 | Navigation | 28 | 75W | 11-03048 | . |
| GE-1665 | Aircraft | 28 | .80A | 11-03034 | . | GE-5004CW | Cool White | A.C. | 4W | 11-03060 | . |
| GE-1665AF | Aircraft - All Frosted | 28 | .80A | 11-03035 | . | GE-5004WW | Warm White | A.C. | 4W | 11-03061 | . |
| GE-1680 | Wing/Tail | 6 | 4.1A | 11-04165 | . | GE-5008CW | Cool White | A.C. | 8W | 11-03063 | . |
| GE-1691 | Aircraft - 2 Filaments | 28 | .61A | 11-03029 | . | GE-5008WW | Warm White | A.C. | 8W | 11-03064 | . |
| GE-1692 | Marine - 2 Filaments | 28 | .61A | 11-03030 | . | GE-5013CW | Cool White | A.C. | 13W | 11-03066 | . |
| GE-1777 | Aircraft Tail Light | 12.8 | 1.52A | 11-04014 | . | GE-5013WW | Warm White | A.C. | 13W | 11-03067 | . |
| GE-2232 | Spiral Lead | 28 | 6.43A | 11-03031 | . | GE-5104WW | Warm White | A.C. | 4W | 11-03062 | . |
| GE-2233 | Spiral Lead | 28 | .766A | 11-03033 | . | GE-5108WW | Warm White | A.C. | 8W | 11-03065 | . |
| S-11 Bulb 1-3/8" (35mm) Diameter | | | | | | | | | | | |
| GE-309 | Aircraft | 28 | .90A | 11-03036 | . | GE-5113WW | Warm White | A.C. | 13W | 11-03068 | . |
| GE-311 | Wing/Tail | 28 | 1.29A | 11-04178 | . | T-7 Bulb 7/8" (20mm) Diameter | | | | | |
| T-1 Bulb 1/8" (3mm) Diameter | | | | | | | | | | | |
| GE-685 | Aircraft | 5.0 | .06A | 11-03042 | . | GE-1940 | Rotating Beacon | 14 | 3.57A | 11-03794 | . |
| GE-718AS15 | Aircraft - 1 Filament | 5.0 | .115A | 11-03043 | . | Cockpit & Wing/Tail Lights | | | | | |
| T-13/4 Bulb 7/32" (.55mm) Diameter | | | | | | | | | | | |
| GE-85 | Indicator | 28 | .04A | 11-03044 | . | GE-53 | Panel Indicator | 14.4 | 1 CP | 11-04193 | . |
| | | | | | | GE-89 | Cockpit Light | 13 | 6 CP | 11-04197 | . |
| | | | | | | GE-93 | Wing/Tail | 12.8 | 15 CP | 11-04199 | . |
| | | | | | | GE-94 | Wing/Tail | 12.8 | 15 CP | 11-04200 | . |
| | | | | | | GE-313 | Cockpit Light | 28 | .17A | 11-04179 | . |
| | | | | | | GE-336 | Post Light | 14 | .08A | 11-04183 | . |
| | | | | | | GE-356 | Map Light | 28 | 17A | 11-04184 | . |
| | | | | | | GE-1073 | Illuminator Lights | 12.8 | 1.80A | 11-04012 | . |
| | | | | | | GE-1141 | Wing/Tail | 12.8 | 1.44A | 11-04161 | . |
| | | | | | | GE-1495 | Panel Indicator | 28 | .30A | 11-04164 | . |



SEALED BEAM LAMPS FOR LANDING & TAXI LIGHTS

| Lamp No. | Primary/Application | Volts | Amps/Watts | Part No. | Price | Lamp No. | Primary/Application | Volts | Amps/Watts | Part No. | Price |
|--|---------------------|-------|------------|----------|-------|--|---------------------|-------|------------|----------|-------|
| PAR36 Bulb 41/2" (114mm) Diameter | | | | | | | | | | | |
| GE-4509 | Landing Spotlamp | 13 | 100W | 11-03796 | . | PAR46 Bulb 53/4" (146mm) Diameter (Continued) | | | | | |
| GE-4595 | Navigation | 13 | 100W | 11-03081 | . | GE-4553 | Landing | 28 | 250W | 11-03799 | . |
| GE-Q4509 | Landing | 13 | 100W | 11-03902 | . | GE-4554 | Taxiing | 28 | 450W | 11-03095 | . |
| GE-4313 | Landing | 13 | 250W | 11-03795 | . | GE-4570 | Taxiing | 28 | 150W | 11-03801 | . |
| GE-Q4631 | Landing | 13 | 250W | 11-03083 | . | GE-4571 | Flood | 28 | 150W | 11-03092 | . |
| GE-4505 | Navigation | 28 | 50W | 11-04188 | . | GE-4580 | Landing | 28 | 450W | 11-03901 | . |
| GE-4589 | Cockpit Flood | 28 | 50W | 11-03084 | . | GE-4581 | Landing | 28 | 450W | 11-03097 | . |
| GE-4593 | In-Air Refueling | 28 | 50W | 11-03085 | . | GE-Q4681 | Landing | 28 | 450W | 11-03101 | . |
| GE-4591 | Landing | 28 | 100W | 11-03802 | . | GE-4582 | Helicopter Flood | 28 | 450W | 11-03098 | . |
| GE-4594 | Navigation | 28 | 100W | 11-03803 | . | GE-Q4566 | Taxiing | 28 | 450W | 11-03096 | . |
| GE4627 | Flood | 28 | 100W | 11-03088 | . | GE-Q4597 | Flood | 28 | 450W | 11-03099 | . |
| GE-4713 | Logo | 28 | 150W | 11-03089 | . | PAR56 Bulb 7" (178mm) Diameter | | | | | |
| GE-4587 | Taxiing | 28 | 250W | 11-03090 | . | GE-4541 | Landing | 28 | 450W | 11-03102 | . |
| GE-4596 | Landing | 28 | 250W | 11-03806 | . | PAR64 Bulb 8" (203mm) Diameter | | | | | |
| PAR46 Bulb 53/4" (146mm) Diameter | | | | | | | | | | | |
| GE-4551 | Taxiing | 28 | 250W | 11-03093 | . | GE-4557 | Landing/Taxiing | 28 | 1000W | 11-04190 | . |
| | | | | | | GE-4559X | Landing | 28 | 600W | 11-03104 | . |
| | | | | | | GE-Q4559 | Landing | 28 | 600W | 11-03103 | . |



GALAXY 4509 LANDING LIGHT BULBS

The 4509Q lamp is a direct replacement for the standard 4509 lamp. While the amps & wattage are the same, the rated design life of the 4509Q is 4 times longer (100 hrs. vs. 25 hrs.) and 4509Q has nearly double the candlepower and narrower beam disbursement.

- Galaxy 4509Q Landing Light BulbP/N 11-02220
- Galaxy 4509 Landing Light BulbP/N 11-02219

CUSTOM AVIONICS PANELS

ADVANTAGE AVIONICS



Aircraft Spruce Avionics opened in September 1993 and in January 2004 merged with Advantage Avionics at Chino Airport in Southern California. Aircraft Spruce stocks a complete selection of major brand equipment at exceptional prices and ships to customers around the world. Advantage Avionics is Aircraft Spruce's custom panel and avionics installation facility. Highly skilled and experienced installers and bench technicians provide quality work at competitive prices. Advantage Avionics has become the avionics shop of choice for discerning aircraft builders and owners in Southern California.

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Radio Class: I, II, III
Instrument Class: I, II, III, IV
Limited Airframe



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quickly and simplify the ordering process. Your data can be saved so you can build your panel at your own convenience.

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RV Panel



Pulsar Panel



Lancair Panel



Velocity Panel

IMPORTANT NOTICE

Aircraft Spruce & Specialty Co. cannot accept a return of any instrument or avionics equipment that has been installed and/or altered in any way. All returns must include all components and accessories and all original packaging. All returns must be in new, saleable condition. Credit or replacement will be issued at our discretion pending inspection and testing by the manufacturer. Warranty repairs can be sent directly to the manufacturer with a copy of our invoice.

GARMIN PORTABLE GPS



GARMIN GPSMAP 696 & 695

All-in-one navigator designed exclusively for aviation. Bright 7-inch diagonal high-definition sunlight-readable display. The bezel around the screen includes soft keys and a joystick control. Fast 5 Hz GPS update rate, the 696 renders graphics and presents flight data smoothly and continuously. With the addition of Garmin FliteCharts® and IFR map mode, the GPSMAP 696 has Class 1/Class 2 electronic flight bag (EFB) capability. Includes a GXM 40 smart antenna, which gives you access to high-resolution weather and audio entertainment right in the cockpit (XM subscription required). Can receive PIREPs, turbulence forecast and icing forecast information. The weather data can be laid directly over the unit's navigation map and topographic map databases. Features a high-resolution terrain page showing hazards relative to your altitude and a vertical profile of terrain along your route of flight. Built-in Jeppesen database, and an Americas, Atlantic or Pacific terrain database. Also includes an obstacles database for the U.S. or Europe. Comes with a realistic "view from space" satellite imagery basemap. When in the air, Garmin's new Smart Airspace™ feature makes it easier than ever to identify what airspace lies ahead.

GPSMAP 695 is Garmin's ultimate portable MFD. Similar to the 696, the GPSMAP 695 comes with a large screen and detailed electronic charts — minus XM compatibility — at a price you'll love.

- Garmin GPSMAP 696 Americas P/N 11-07022
- Garmin GPSMAP 695 Americas P/N 11-07023
- Garmin GPSMAP 695 Atlantic..... P/N 11-07047
- Garmin GPSMAP 695 Pacific..... P/N 11-07048

GPSMAP 696 & 695 ACCESSORIES

| Description | Part No. | Price | Description | Part No. | Price | Description | Part No. | Price |
|------------------|----------|-------|-------------------------|----------|-------|------------------------------|----------|-------|
| Power Data Cable | 11-07056 | . | US AC Adapter | 11-07052 | . | GXM 40 Flng Mount | 11-07059 | . |
| Carrying Case | 11-07049 | . | Intl. AC Adapter | 11-07053 | . | Mag Mount GXM Antenna | 11-07060 | . |
| Lap Mount | 11-07050 | . | 12/24V Cig. Plug | 11-07054 | . | Zaon traffic Interface Cable | 11-07107 | . |
| Battery Pack | 11-07051 | . | Protective Cover | 11-07055 | . | MCX to BNC antenna cable | 11-90210 | . |
| Yoke Mount | 11-07057 | . | GMX 40 XM Antenna (696) | 11-07058 | . | 696 Audio Jack | 11-07783 | . |

GARMIN GPSMAP 496

Combines satellite datalink weather with a detailed color map and terrain alerting. Garmin SafeTaxi™ data provides detailed taxiway diagrams and position information for over 850 U.S. airports. Preloaded on the unit. Look up taxi services, plan an overnight, choose fuel stops and more with the Aircraft Owners and Pilots Association (AOPA) Airport Directory included on the GPSMAP 496. Detailed information for over 5,300 U.S. airports along with the names and phone numbers of thousands of FBOs, plus ground transportation, lodging, restaurants, local attractions and more. Smart Airspace feature makes it easier than ever to identify what airspace lies ahead. Automatically highlights airspace close to the pilot's current altitude and de-emphasizes airspace away from the current altitude, which gives you increased situational awareness. Built-in Jeppesen database with terrain and obstacle databases. Even customize your own minimum clearance levels to receive terrain cautions. Updates map data and "Panel" page instruments at 5 Hz, gives you a smoother, near "real-time" presentation of your aircraft's analog indicators. With an optional subscription to XM WX Satellite Weather™ and the included GXM 30A smart antenna, you'll have access to constantly-updated, high-resolution weather data for the U.S., right in the cockpit. Add a Garmin Mode S transponder, and the 496 will also display TIS traffic alerts that identify surrounding air traffic. Garmin's GPSMAP 496 comes ready to go right out of the box with preloaded City Navigator® NT street maps and a hefty points of interest (POIs) database, including motels, restaurants, fuel, ATMs and more. Simply enter a destination, and you're automatically routed with voice-prompted turn-by-turn directions. Add optional BlueChart® g2 data cards, and turn the 496 into a color chartplotter.

- Garmin GPSMAP 496 Americas P/N 11-04684
- Garmin GPSMAP 496 Atlantic P/N 11-04742
- Garmin GPSMAP 496 GuideBook P/N 11-05024

GARMIN GPSMAP 495

Includes the advanced features of the 496 — minus XM™ compatibility and preloaded maps — at a price you'll love. It comes loaded with SafeTaxi® airport diagrams, AOPA's Airport Directory data, Garmin's Smart Airspace™, super-fast update speed, enhanced terrain and aviation databases and more. Add optional mapping to this versatile handheld for use on land or water.

- GPSMAP 495 Americas P/N 11-06248
- GPSMAP 495 Atlantic P/N 11-06317
- GPSMAP 495 Pacific P/N 11-06318

GARMIN GPSMAP 396

An integrated GXM 30 smart antenna makes the satellite connection, enabling the unit to receive and process XM Weather and flight safety products. Allows pilots to display NEXRAD, Temporary Flight Restrictions (TFRs), METARs, TAFs, Winds Aloft, through a subscription with XM Radio data services. Displays TIS traffic when interfaced with a Garmin GTX 330, and channeling a Garmin SL 30 Nav/Com by highlighting a frequency on the GPSMAP 396 and pressing the enter button. Features: •GA 26C remote antenna •Full Jeppesen aviation database, including instrument approaches •Terrain/obstacle display with pop-up warnings •Built-in basemap with automatic routing and turn-by-turn directions •Rechargeable lithium-ion battery offers 5 to 15 hours of use depending on backlight settings •Provides separate serial and USB interfaces •50 reversible routes with 300 waypoints per route •10,000 point automatic track log; 15 saved tracks, 1,000 saved track points each •Project your position on the map with the configurable complex heading line Water resistant, IEC 60529 IPX7 standards (submersible to 1 meter for 30 minutes) P/N 11-03592

GARMIN GPSMAP 296

The GPSMAP 296 builds on the tradition of Garmin aviation handhelds like the GPSMAP 196 and GPSMAP 295. New features like terrain cautions and alerts, sectional chart-like topographic data, a built-in obstacle database of the U.S., and a transparent navigation arc view for course, speed, and distance information lead the list of advances. The GPSMAP 296 also features USB data transfer, faster processing speed, and a rechargeable lithium-ion battery pack. Press a button, and you have your choice of the unit's automotive or marine modes. An automatic logbook also calculates your flight time and automatically records departure and arrival locations. When used with Garmin's free logbook software—FlightBook—this feature makes light work of maintaining your logbook. Your flight information will be stored in the unit and can be downloaded to this exclusive Flightbook software at any time. Garmin delivers terrain awareness in an intuitive Terrain mode on the GPSMAP 296. The unit combines GPS position, GPS altitude and topographical mapping to give pilots a vivid depiction of potential terrain hazards.

- Features: * Sunlight Readable * Full Color Screen * Terrain (TOPO) with Alerts * Lithium Rechargeable Battery * Mapsource & Blue Chart Compatible * Turn by Turn Guidance * If Auto Kit is Purchased, has Voice Activated Turn by Turn * Processor is 2 Times Faster than the 196 * Can Display in 10 Different Languages that are Pre-Programmed in the GPS Itself: English, French, German, Spanish, Russian, Italian, Polish, Portuguese, Swedish, Dutch
- GPSMAP 296 Americas P/N 11-02652
- GPSMAP 296 Atlantic P/N 11-02662
- GPSMAP 296 Pacific P/N 11-02663

GARMIN GPS ACCESSORIES

| | | | | | |
|---|----------|---|---|----------|---|
| Garmin Power Data Cable | 11-02694 | . | GMX 30A antenna (396 & 496) | 11-06270 | . |
| Garmin Battery Pack | 11-04856 | . | GMX 30 flange mount with screws | 11-06267 | . |
| Garmin Auto Kit (296, 396, 495) | 11-02677 | . | GMX 40 Replacement ant. for GMX Series only | 11-07058 | . |
| City Navigator North America | 11-02705 | . | Cigarette adapter w/ speaker (car only) | 11-02693 | . |
| City Navigator Europe | 11-01192 | . | Cigarette adapter | 11-02696 | . |
| Auto mount | 11-03900 | . | AC power adapter | 11-02676 | . |
| Yoke mount | 11-02691 | . | USB Cable | 11-02692 | . |
| Friction mount | 11-01033 | . | Carrying Case | 11-18863 | . |
| Garmin GPS handheld antenna | 11-02681 | . | GPS Protective Cover | 11-02701 | . |
| GA 25MCX low profile remote antena | 11-07281 | . | Garmin 512MB Data Card | 11-06268 | . |
| GA 26C remote GPS antenna | 11-00051 | . | Garmin 256MB Data Card | 11-02697 | . |
| GA 29 remote marine antenna | 11-07285 | . | Instruction 296 video (DVD) | 11-02821 | . |
| GA 56 low profile antenna for you panel mount | 11-18756 | . | USB Cable fits 296, 396, 495, 496, 695, 696 | 11-07503 | . |



GARMIN PORTABLE GPS



GARMIN GPSMAP 196

The GPSMAP 196 offers unprecedented features and utility in an aviation portable. In addition to the built-in Garmin basemap, the GPSMAP 196 accepts all of our MapSource products, and provides turn-by-turn route guidance for street navigation. Other exciting features include a unique "panel page", which offers a graphical depiction of GPS-derived

flight information, and an automatic logbook function that records departure airports, arrival airports, and flight time (automatically recording night flight based on sunrise/sunset information). This flight information is stored in the unit, and can be downloaded to Garmin logbook software. The GPSMAP 196's processor provides map redraws and scrolling at over twice the speed of previous aviation portables. With these features plus a large (3.8" diagonal), 12-level grayscale display in a slim package, the GPSMAP 196 is sure to be the next big hit. Features: • 3 distinct modes: Aviation, Land, Water Extended runway centerlines displayed on moving map • Unique panel page graphically displays flight info • Turn-by-turn automotive routing • Split-screen moving map and HSI display • Built-in basemap showing lakes, rivers, cities, highways, state boundaries • Benefits

Logbook feature automatically records flight data • WAAS-enabled, 12 parallel channel GPS receiver • 1000 user waypoints with name and graphic symbol; 50 reversible routes with 50 waypoints / route. • Compatible with most Map source products including Garmin BlueChart marine cartography, MetroGuide, and City Select. • Weight: approx. 1.5 lbs. with batteries • Battery life using (4) AA batteries; 16 hours with no backlighting used. 4 hours with full backlighting.

GPSMAP-196 Americas Database P/N 11-01620
 GPSMAP-196 Pacific Database..... P/N 11-01622
 GPSMAP-196 Atlantic Database..... P/N 11-01621

Accessories: Auto Kit Includes: Auto dash mount, portable bean bag mount, 64Mb data Card, MapSource City Select US CD with full coverage, USB Card Programmer..... P/N 11-01628

GARMIN GPS TRADE-IN / TRADE-UP PROGRAM

TRADE-IN YOUR
 OLDER MODEL
 AND TRADE-UP TO
 NEW MODEL



AV

Trade-in only applies towards a purchase of a new Garmin unit listed below (one unit per trade-in). Trade-in must be complete, having all accessories (listed below), and the unit must be in good cosmetic and working condition. Any unit not meeting this requirement may receive a lesser trade-in value or have the unit returned.

1. Purchase a new GPSMAP 296, 396, 495, 496, 695, or 696.
2. At the time of order, our sales representatives will give you your customer number and order number to use when sending in your trade-in unit.
3. Once you receive your new Garmin unit, please call our customer service number at 800-861-3192 and reference your customer number and order number to receive an RMA to ship your trade-in to Aircraft Spruce and Specialty.
4. After we receive your trade-in, we will verify that the unit is complete and in good cosmetic and working condition. Once verified we will credit you the trade-in value. Units with missing accessories will add delay to the credit process.

GPSMAP 496.....
 GPSMAP 495.....
 GPSMAP 396.....
 GPSMAP 296.....
 GPSMAP 295.....
 GPSMAP 196.....



GARMIN GPSMAP 96/96C

Full-featured GPS navigation with Jeppesen database and comprehensive towers-and-obstacles database. Users can quickly download and store map data from a variety of optional MapSource CDROMs. Whether on land, sea, or air, the GPSMAP 96 is the smart, versatile way to get there: • Extensive Jeppesen database includes airports, identifiers and services • Comprehensive U.S. database of obstacles and towers helps alert pilots of potential hazards • Graphic HSI steering cues with GPS-derived VNAV provide added orientation • Built-in autoroute basemap and optional MapSource marine, topo & city street mapping downloads let you move seamlessly from plane to car to boat to hiking boots. Features: • Unit Dims: 2.7"W x 6.2"H x 1.4"D • Weight: 7 oz. • Display size: 3.0" diagonally • Antenna: Quad-helix • Display resolution: 180x240-pixel, 4-level gray FSTN display • Usable storage capacity: 23 MB • Battery life: Up to 25 hrs in battery save mode, depending on backlight setting • WAAS capability: WAAS GPS receiver for enhanced lateral/vertical guidance. • Waterproof: submersible in 1 meter of water for up to 30 mins. • Routes, Tracks, Waypoints: 50 reversible routes (300 waypoints each), 20 saved tracks (500 trackpoints each), TracBack® technology and 1,000 waypoints with graphical icon identification.

GPSMap 96 Americas B&W P/N 11-02819
 GPSMap 96 Atlantic B&W..... P/N 11-02825
 GPSMap 96 Pacific B&W..... P/N 11-02826
 GPSMap 96C Americas Color P/N 11-02820
 GPSMap 96C Atlantic Color..... P/N 11-02827
 GPSMap 96C Pacific Color..... P/N 11-02828

ACCESSORIES FOR GPSMAP 196, 96C AND 96

| Description | Part No. | Price |
|-------------------------------------|----------|-------|
| Power Data Cable | 11-90345 | . |
| AC Adapter | 11-02299 | . |
| Cigarette Adapter | 11-18759 | . |
| PC Interface with AC Adapter | 11-00713 | . |
| PC Interface with Cigarette Adapter | 11-90326 | . |
| PC Interface Cable | 11-90346 | . |
| USB To RS232 Cable Converter | 11-01037 | . |
| NIMH AA Rechargeable | 11-02844 | . |
| GA 27C Remote Antenna | 11-00052 | . |
| 8 Foot Extension cable for GA 27C | 11-07283 | . |
| Antenna Flange Mount | 11-02683 | . |
| MCX to BNC Antenna Cable | 11-90210 | . |
| GA 26C Suction Cup Mount | 11-02685 | . |
| Dash Mount Disk | 11-18862 | . |
| Auto Mount | 11-03900 | . |
| Bean Bag Mount | 11-01033 | . |
| Temp. Adhesive 3-Pack | 11-02689 | . |
| Permanent Adhesive Disk | 11-00547 | . |
| Carrying Case (96C & 96) | 11-90325 | . |



USED GARMIN GPS UNITS

Used Garmin GPS units are subject to availability. If the unit is not in stock at the time of your order, it will remain on backorder indefinitely until we receive a used unit from a customer as a trade-in.

| Description | Part No. | Price |
|------------------------|----------|-------|
| Used Garmin GPSMAP III | 11-01752 | . |
| Used Garmin GPSMAP 90 | 11-01754 | . |
| Used Garmin GPSMAP 92 | 11-01753 | . |
| Used Garmin GPSMAP 195 | 11-01751 | . |
| Used Garmin GPSMAP 295 | 11-02656 | . |
| Used Garmin GPSMAP 196 | 11-02713 | . |
| Used Garmin GPSMAP 296 | 11-03593 | . |
| Used Garmin GPSMAP 396 | 11-04737 | . |
| Used Garmin GPSMAP 495 | 11-07063 | . |
| Used Garmin GPSMAP 496 | 11-07064 | . |

GARMIN PORTABLE GPS - ACCESSORIES



GARMIN NUVI 205W

This navigator leads the way with turn-by-turn directions and optional MSN® Direct services to get you there on time and keep you informed. It's packed with millions of destinations and maps for the contiguous U.S. **Navigate With Ease** - nuvi 205 comes preloaded with City Navigator® NT map data for the contiguous U.S. Simply touch the color screen to enter a destination, and nuvi takes you there with turn-by-turn voice directions, 2-D or 3-D maps and smooth map redraw rates as you navigate. Its digital elevation maps show you shaded contours at higher zoom levels, giving you a big picture of the surrounding terrain. In addition, nuvi 205 accepts custom points of interest (POIs). **Take It With You** - Like the rest of the nuvi 2x5-series, nuvi 205 sports a sleek, slim design and fits comfortably in your pocket or purse. Its rechargeable lithium-ion battery makes it convenient for navigation by car or foot. With its "Where Am I?" emergency locator, you always know your location. Simply tap the screen to get your exact latitude and longitude coordinates, the nearest address and intersection, and the closest hospitals, police stations and fuel stations. **Go Beyond Navigation** - Navigation is just the beginning. nuvi 205 includes many travel tools including JPEG picture viewer, world travel clock with time zones, currency converter, measurement converter, calculator and more. With photo navigation, you can download Google™ Panoramio™ pictures via our Garmin Connect™ Photos website and navigate to them. The 205 is compatible with optional enhanced MSN® Direct content (subscription and receiver required) and our free Garmin Garage where you can download animated vehicles that show your location on the map. It also comes with Garmin Lock™, an anti-theft feature. Enhance your travel experience with optional plug-in microSD cards such as Garmin Travel Guides for detailed data on attractions.

- Suction Cup Mount..... P/N 11-07249.....
- Dash Mount..... P/N 11-07275.....
- Auto Mount Adapter..... P/N 11-07276.....
- Portable Friction Mount..... P/N 11-07284.....
- P/N 11-07277.....

GARMIN COLORADO® 300



A built-in basemap, high-sensitivity receiver, barometric altimeter, electronic compass, SD™ card slot, color display, picture viewer and more. Even exchange tracks, waypoints, routes and geocaches wirelessly between similar units. **Explore More** - Colorado 300 comes with a built-in worldwide basemap with shaded relief and accepts SD cards for all your outdoor activities on land or water. The card slot is located inside the waterproof battery compartment, so you don't have to worry about getting it wet. **Share Wirelessly** - With Colorado 300 you can share your waypoints, tracks, routes and geocaches wirelessly with other Colorado users. **Rock on. Find Fun** - Intuitive and fun, Colorado features a Rock 'n Roller™ input wheel for easy one-handed operation and supports Geocaching.com GPX files for downloading geocaches and detail straight to your unit. **Keep Your Fix** - With its high-sensitivity, WAAS-enabled GPS receiver, Colorado 300 locates your position quickly and precisely and maintains its GPS location even in heavy cover and deep canyons. **Get Your Bearings** - Colorado 300 has a built-in electronic compass that provides bearing information even while you're standing still, and its barometric altimeter tracks changes in pressure to pinpoint your precise altitude.

P/N 11-07248.....

GARMIN OREGON™ 300



Features a rugged, touchscreen along with a built-in basemap with shaded relief, a high-sensitivity receiver, barometric altimeter, electronic compass, microSD™ card slot, picture viewer and more. Even exchange tracks, waypoints, routes and geocaches wirelessly between similar units. Touch and Go - A tough, 3-inch diagonal, sunlight-readable, color, touchscreen display. Its easy-to-use interface means you'll spend more time enjoying the outdoors and less time searching for information. Both durable and waterproof, it is built to withstand the elements. Bumps, dust, dirt, humidity and water are no match for this rugged navigator. **Explore More** - Comes with a built-in worldwide basemap with shaded contours. Simply touch the color screen to navigate. Its digital elevation maps show you shaded contours at higher zoom levels, giving you a big picture of the surrounding terrain. **Share Wirelessly** - Share your waypoints, tracks, routes and geocaches wirelessly other Oregon and Colorado users. **Find Fun** - Supports Geocaching.com GPX files for downloading geocaches and details straight to your unit. **Keep Your Fix** - Locates your position quickly and precisely and maintains its GPS location even in heavy cover and deep canyons. **Get Your Bearings** - Oregon 300 has a built-in electronic compass that provides bearing information even while you're standing still, and its barometric altimeter tracks changes in pressure to pinpoint your precise altitude.

P/N 11-07247.....

MAGNIFICO PLUS



Truly a universal screen magnifier for PDAs, GPSs, iPods, BlackBerrys and other devices with small screens. The handheld device attaches to the base of a clamshell unit. With a flick of a finger the lens telescopes out to the desired height and when not in use, is collapsible to a compact stowaway unit. Folded down, it measures: 3-1/4" x 4-3/4" x 1-1/4"

P/N 11-04378.....



QREF BOOK/CARD CHECKLISTS

In a QREF Book, information is organized into standardized sections, and each section is tabbed in sturdy 1/4" (60mm) side tabs, making it easy to navigate to the exact procedure you're after. If you are already familiar with your GPS, a Qref card will provide quick reminders of how to do common tasks. The cards are double sided and printed in full color and hard laminated

| GPS Model | Card P/N | Price | Book P/N | Price |
|---------------------|----------|-------|----------|-------|
| GPSMAP 195 | 13-06355 | . | 13-06291 | . |
| GPSMAP 196 | 13-06356 | . | 13-06292 | . |
| GPSMAP 295 | 13-06357 | . | 13-06293 | . |
| GPSMAP 296 | 13-06360 | . | 13-06294 | . |
| GPSMAP 396 | 13-06362 | . | 13-06295 | . |
| GPSMAP 495 | 13-06362 | . | 13-06313 | . |
| GPSMAP 496 | 13-06362 | . | 13-06315 | . |
| GPSMAP 696-695 | 13-06363 | . | 13-06316 | . |
| GMX200 | 13-06353 | . | --- | --- |
| GNS 430 | --- | --- | 13-06288 | . |
| GNS 480/CNX80 | 13-06418 | . | 13-06289 | . |
| GNS 530/430 | 13-06354 | . | 13-06290 | . |
| G1000 Card | 13-06417 | . | --- | --- |
| G1000 non WAAS | --- | --- | 13-06423 | . |
| G1000 WAAS | --- | --- | 13-06424 | . |
| GARMIN Cirrus | --- | --- | 13-06425 | . |
| AIRMAP 2000C | 13-06365 | . | 13-06317 | . |
| AIRMAP 600C | 13-06364 | . | 13-06318 | . |
| AV8OR | 13-06348 | . | 13-06287 | . |
| GEOPILOT II | 13-06347 | . | 13-06286 | . |
| EKP-II | | | 13-06285 | . |
| ETREX Advanced | 13-06349 | . | 13-06319 | . |
| ETREX Basic | 13-06350 | . | 13-06320 | . |
| ETREX Mapping | 13-06352 | . | 13-06321 | . |
| EKP | 13-06322 | . | --- | --- |
| KLN 89B | 13-06368 | . | --- | --- |
| KLN 90B | 13-06367 | . | --- | --- |
| KLN 94 | 13-06366 | . | 13-06422 | . |
| KLN GX Series | 13-06369 | . | --- | --- |
| Avidyne Entegra 3-5 | --- | --- | 13-06358 | . |
| Avidyne Entegra 6-7 | --- | --- | 13-06359 | . |

KNEEBOARD FOR HANDHELD GPS & PDAS



This angled kneeboard accommodates virtually every handheld GPS or PDA. The circular base is slightly cone-shaped for a leg-conforming fit and is wiggle-free secured around either upper leg with a velcro tape. The GPS or PDA attaches with velcro on a slant surface, which is angled about 30° and permits a perpendicular view on the screen.

P/N 11-01285.....

JEPPESEN GARMIN GPSMAP TRAINING CDS



The Jeppesen Training CDS let pilots learn at their own pace, practicing procedures at the comfort and safety of a computer desktop, rather than flying heads-down. Easily and quickly get the users familiar with operations by using a visual hands-on approach.

| Description | Part No. | Price |
|--|------------|-------|
| Jeppesen GPSMAP 196 INTERACTIVE | 11-02442-1 | . |
| Jeppesen GPSMAP 296 INTERACTIVE | 11-02848-1 | . |
| Jeppesen GPSMAP 396 INTERACTIVE | 11-04514-1 | . |
| Jeppesen GPSMAP 496 TRAINING CD | 11-04766 | . |
| JS202402 JEP 430/530 WAAS PRC | 13-05646 | . |
| Jeppesen Weight & Balance Graphic Planner CD | 11-04767 | . |

GPS MANUALS



Pilot-friendly manuals are available for most receivers. Our task-oriented manuals are simplified directions that lead you step-by-step through all the GPS operations. Includes descriptions of all pages.

| Description | Part No. | Price |
|-----------------------------------|----------|-------|
| G1000W WAAS Manual | 13-05694 | . |
| GNS-430W WAAS Manual | 13-05129 | . |
| GNS-430 Guidebook | 11-04307 | . |
| GNS-530 Guidebook | 11-04308 | . |
| G1000 Guidebook | 11-04309 | . |
| GPSMAP 295 | 11-04310 | . |
| Learn How to Use Your GPS 496 | 11-05024 | . |
| GPSMAP 496 Guidebook | 11-05581 | . |
| GPSMAP 396 Guidebook | 11-04311 | . |
| GPSMAP 296 Guidebook | 11-04312 | . |
| GPSMAP 196 Guidebook | 11-04313 | . |
| Bendix/King KLN-90B Guidebook | 11-04303 | . |
| Bendix/King KLN-900 Guidebook | 11-04304 | . |
| Bendix/King KLN-90B/900 Guidebook | 11-04305 | . |
| Bendix/King KLN-89B/94 Guidebook | 11-04306 | . |

USING THE GNS430W/530W



This is not your typical "Cook Book" approach to learning the GNS430/530W. The manual contains 62 pages of text and dozens of colored pictures, the same pictures you would see in real-life when operating the unit. Written by Keith Thomassen.

P/N 13-06831.....

AV

GARMIN PANEL PACKAGES

GARMIN AIRCRAFT PANEL PACKAGES



* If you do not see a package that meets your needs. Please contact our Avionics Sales Manager for a quote.
*Request quote for the needed harness at an additional cost.

*Package E, H, & K cannot be sold over the counter for certified aircraft installation as the GTX 330 transponder must be installed by a Garmin dealer.

| Package | P/N | Price | Package | P/N | Price | Package | P/N | Price |
|---|----------|-------|---|----------|-------|---|----------|-------|
| GARMIN PACKAGE A | | | GARMIN PACKAGE G | | | GARMIN PACKAGE L | | |
| GPSMAP 296 Americas AirGizmo Panel Dock SL40 Slimline COMM GTX 320A Trans. w/harness AK-350 Encoder | 11-05044 | . | GPSMAP 496 Americas AirGizmo Panel Dock SL 40 Slimline COMM GTX 327 Trans. w/harness AK-350 Encoder | 11-05050 | . | GMA 240 Audio Panel GPSMAP 296 Americas AirGizmo Panel Dock SL40 Slimline COMM GTX 327 Trans. w/harness AK-350 Encoder | 11-07127 | . |
| GARMIN PACKAGE B | | | GARMIN PACKAGE H | | | GARMIN PACKAGE M | | |
| GPSMAP 296 Americas AirGizmo Panel Dock SL 40 Slimline COMM GTX 327 Trans. w/harness AK-350 Encoder | 11-05045 | . | GPSMAP 496 Americas AirGizmo Panel Dock SL 40 Slimline COMM GTX 330 Trans. w/harness AK-350 Encoder | 11-05051 | . | GMA 240 Audio Panel GPSMAP 396 Americas AirGizmo Panel Dock SL40 Slimline COMM GTX 327 Trans. w/harness AK-350 Encoder | 11-07128 | . |
| GARMIN PACKAGE C | | | GARMIN PACKAGE I | | | GARMIN PACKAGE N | | |
| GPSMAP 396 Americas AirGizmo Panel Dock SL40 Slimline COMM GTX 320A Trans. w/harness AK-350 Encoder | 11-05046 | . | GPSMAP 696 Americas AirGizmo Panel Dock SL40 Slimline COMM GTX 320A Trans. w/harness AK-350 Encoder | 11-07124 | . | GMA 240 Audio Panel GPSMAP 496 Americas AirGizmo Panel Dock SL40 Slimline COMM GTX 327 Trans. w/harness AK-350 Encoder | 11-07129 | . |
| GARMIN PACKAGE D | | | GARMIN PACKAGE J | | | GARMIN PACKAGE O | | |
| GPSMAP 396 Americas AirGizmo Panel Dock SL 40 Slimline COMM GTX 327 Trans. w/harness AK-350 Encoder | 11-05047 | . | GPSMAP 696 Americas AirGizmo Panel Dock SL40 Slimline COMM GTX 327 Trans. w/harness AK-350 Encoder | 11-07125 | . | GMA 240 Audio Panel GPSMAP 696 Americas AirGizmo Panel Dock SL40 Slimline COMM GTX 327 Trans. w/harness AK-350 Encoder | 11-07130 | . |
| GARMIN PACKAGE E | | | GARMIN PACKAGE K | | | | | |
| GPSMAP 396 Americas AirGizmo Panel Dock SL 40 Slimline COMM GTX 330 Trans. w/harness AK-350 Encoder | 11-05048 | . | GPSMAP 696 Americas AirGizmo Panel Dock SL40 Slimline COMM GTX 330 Trans. w/harness AK-350 Encoder | 11-07126 | . | | | |
| GARMIN PACKAGE F | | | | | | | | |
| GPSMAP 496 Americas AirGizmo Panel Dock SL40 Slimline COMM GTX 320A Trans. w/harness AK-350 Encoder | 11-05049 | . | | | | | | |

INTERCOM OPTION

This option includes a PS Engineering *PMA1000II four places intercom for the Garmin™ SL 40. Available with any of our Garmin™ Packages.
*Request quote for the needed harness at an additional cost. P/N 11-05052.....

AV

GARMIN NOH (NEWLY OVERHAULED) UNITS



and is TSO-certified for non-precision approaches for the IFR environment. Americas Data Base. P/N 11-05939



resolution DSTN display. The 300XL TSO shares the popular features of the GNC 250XL and is TSO-certified for non-precision approaches for the IFR environment. P/N 11-02934



GPS 150XL shares the popular features as the 155XL TSO at a lower price for the VFR pilot. P/N 11-06323

GARMIN 150XL NOH GPS

- The VFR panel-mounted GPS 150XL, along with its IFR counterpart, GPS 155XL TSO, combine moving map graphics with a fast, efficient GPS receiver.

GARMIN NOH GTX 330 TRANSPONDER

- See the same radar traffic your ATC controller is watching with the GTX 330, a panel-mounted Mode S digital transponder with traffic datalink capability that also meets the European mandate for Mode S level 2 surveillance. GTX 330D adds antenna diversity to the features of the GTX 330 for improved visibility of TCAS-equipped aircraft flying above you. P/N 11-05747

AIRGIZMOS PANEL DOCKS



AIRGIZMOS PANEL DOCK FOR GARMIN 695/696

• Securely mounts the Garmin GPSMap 695/696. • Designed to allow quick and easy removal of your portable GPS. • Made from durable, high quality plastic similar in appearance to the GPS itself. • Gives your instrument panel a professional, finished look. P/N 11-07309
Horizontal Tilt..... P/N 11-07310



AIRGIZMOS PANEL DOCK FOR GARMIN 196/296/396/496

The AirGizmos Panel Dock was designed to securely hold your Garmin 196, 296, 396, or 496 portable GPS. It fits nicely in a standard 6.25" avionics stack. It allows you to quickly remove your portable GPS from your plane for upgrades, flight planning, or for use in your car or boat. It is also a safe way to use your portable GPS, as it is securely held in the panel at all times. The Panel Dock is shipped with a set of mounting hardware necessary for attaching it to an avionics stack. If you intend to install it in a different way, use the included hardware as a reference when deciding what type of installation hardware you will need. P/N 11-03509

AIRGIZMOS PANEL DOCK FOR GARMIN 295

The Garmin 295 is held safely and securely, but can be easily removed in a matter of seconds. The external power and antenna connections are made at the back of the unit, and the cables are secured from falling into the panel with special keyholes machined into the dock. P/N 11-04315



AIRGIZMOS VERTICAL TILT ADAPTOR FOR GARMIN UNITS

Following up the release of their Horizontal Angle Adapter, AirGizmos decided to address the needs of those pilots who mount their GPS lower on the instrument panel. The Vertical Tilt Adapter angles the viewing angle of the GPS so it is more readable when the GPS is mounted at the bottom of a tall instrument panel. This adapter fits the same opening as the Panel Dock itself, so adding the vertical tilt should be very easy for existing installations. **REQUIRES P/N 11-03509.** P/N 11-05029



AIRGIZMOS HORIZONTAL TILT ADAPTOR FOR GARMIN UNITS

AirGizmos Horizontal Tilt Bracket angles the GPS at a fixed angle of 15 degrees, providing a much more convenient viewing angle. This adapter fits in the same panel cutout as the Panel Dock, so if you already have a Panel Dock you can attach this adapter without having to modify your installation. You can mount the Angle Adapter in either direction, in case you fly in the right seat. In addition, by using this adapter you can expand your installation options, since it lets you surface-mount the Panel Dock on any instrument panel. **REQUIRES P/N 11-03509.** P/N 11-04671



AIRGIZMOS 396 XM ANTENNA DOCK

Here is the perfect companion to your new Garmin 396 and the AirGizmos Panel Dock. Now you can move the XM antenna from plane to plane, or from vehicle to vehicle, along with the GPS itself. It is designed to mobilize your costly 496 XM antenna. It helps to maintain the clean look of a permanent installation by organizing the antenna cable. Using the AirGizmos Antenna Dock you can freely move ONE XM antenna from location to location, avoiding high costs of additional equipment and service subscriptions. To utilize the AirGizmos Antenna Dock, attach the base to your antenna and install the cradle in the necessary location (you can install several cradles in different locations). Using a simple twist & lock mechanism (no tools required) the base will lock your antenna into the preinstalled cradle, and your 396 XM antenna is ready to go! P/N 11-04694



PREMIUM BEANBAG XM ANTENNA PACKAGE

The AirGizmos Antenna Dock is designed to mobilize your costly 496 XM antenna. It helps to maintain the clean look of a permanent installation by organizing the antenna cable. Package includes: base, cradle, beanbag assembly, and two cables. P/N 11-07007



AIRGIZMOS 396 XM CRADLE & CABLE

This product will allow you to use the AirGizmos XM Antenna Dock in a second vehicle or aircraft. Use of this product requires that you first purchase the AirGizmos XM Antenna Dock. P/N 11-04781



AIRGIZMOS PANEL DOCK COVER FOR GARMIN 196/296/396/496

This panel is for Garmin panel dock for models 196/296/396/496. Protects unit from UV rays and hides unit in the aircraft so that theft is less likely to happen. Can be used even if Garmin unit has not been installed yet. P/N 11-04775

AIRGIZMOS PANEL DOCK FOR AVMAP EKP-IV



Now you can mount the beautiful, detailed display of the AvMap EKP-IV directly in your instrument panel using the AirGizmos EKP-IV Panel Dock. The AirGizmos EKP-IV Panel Dock is designed to hold the AvMap securely yet it allows you to easily remove your portable from your plane whenever the need arises. The AirGizmos EKP-IV Panel Dock offers easy installation, quick release, hassle-free management of cables, and elegance of design. P/N 11-04371



AIRGIZMO GEOPILOT PANEL DOCK

This GPS has a nice large screen to go with it's small size. Our Panel Dock is designed to hold the GeoPilot securely in your panel while allowing it to be easily removed for portable use. Made from durable, high quality plastic similar in appearance to the GPS itself. Gives your instrument panel a professional, finished look. P/N 11-05615

AIRGIZMO GEOPILOT II PLUS PANEL DOCK



The Panel Dock for the AvMap GeoPilot II Plus fits in a standard 6.25" radio stack. Power and antenna cables are organized and managed. The result is a professional installation for your portable GPS.

The included WxWorx weather receiver bracket provides additional organization in the cockpit by providing a secure mount for the WxWorx receiver box. P/N 11-06855



AIRGIZMOS PANEL DOCK FOR AIRMAP 1000/2000C

The AirMap 1000/2000C Panel Dock works in much the same fashion as other AirGizmos products. The cables supplied by Lowrance fit through keyhole slots on the back of the unit. The release latch at the top of the Panel Dock permits quick removal of the device for use in another vehicle or simply for security purposes. P/N 11-04372



AIRGIZMO LOWRANCE 600 PANEL DOCK

Lowrance makes a low cost handheld GPS that is just the perfect size for many panels. Our Panel Dock will allow the AirMap 600c to be nicely mounted in your panel while still allowing it to be easily removed and used as a handheld. Made from durable, high quality plastic similar in appearance to the GPS itself. Gives your instrument panel a professional, finished look. P/N 11-05616



AIRGIZMOS APPLE IPOD DOCK

The iPod Panel Dock fits all first, second, and third generation iPod devices. It does not fit the iPod Mini, or any of the iPod knockoffs that are out there. The iPod Dock can be installed to allow access to either the top plugs or the bottom plug. Just flip it the way you want it to go and mount it in your panel. The top plugs are useful for simple headphone-only connections, while the bottom plug allows you to fully integrate your iPod into your intercom and power system (a separate cable is required). P/N 11-04673



AIRGIZMOS AERO COVER

Would you like to be able to permanently mount the GPS or XM Weather antenna from your favourite GPS? If so, the Aero Cover is for you. It fits all of the major brands of GPS and XM weather antennas. It will protect your antenna from the elements. It is streamlined and attractive. Best of all, it gets your antenna out of your way. P/N 11-04777



AIRGIZMOS XM ANTENNA CABLE

XM Antenna Cable
Straight, 2 meter extension for Garmin XM Weather Antenna P/N 11-04780



AIRGIZMOS AERO DOCK

Don't have room to install the Garmin XM Antenna inside your plane?

The Aero Dock gives you the option of mounting it on the outside.

The AirGizmos Antenna Dock is designed to mobilize your costly 396 XM antenna. It helps to maintain the clean look of a permanent installation by organizing the antenna cable. Using the AirGizmos Aero Dock you can freely move ONE XM antenna from location to location, avoiding high costs of additional equipment and service subscription.

Kit includes: 1 cradle, 1 base, 1 cable, mounting hardware.

P/N 11-04778



BENDIX KING AV8OR™ SERIES - WXWEATHER



BENDIX KING AV8OR

Takes you to the airport, provides airborne weather and guidance enroute to your destination, and even provides multimedia entertainment along the way. Features: * Small and sleek yet hosts a large 4.3-inch diagonal display * External interface to access

XM weather information and overlay data on flight plan * Moving aviation map with vertical profile display of terrain * Moving automotive map with text-to-speech voice prompts * 20-channel SiRF III GPS receiver capable of receiving WAAS * Satellite signals within 5 meters of accuracy * Adjustable, high-brightness 150 FL LCD with 480 X 272 pixels * Touch screen virtual keyboard for efficient user interface * Powered by a new 400 MHz 2443 processor * 4-Gigabyte data card containing databases for the entire US/Canada or the entire Europe region * Spare room for personal files * Easily connected to a home or work PC for quick downloads of files or new databases and uploads of flight plans * Logged flights can be viewed from programs such as Google Earth * Multi-use: Aviation - Auto - Entertainment- MP3 Player, Movie Player, Electronic Books, Photo Viewer and more * Multiple Bluetooth interfaces for: - cell phones, XM Weather Receiver, Alternate GPS Receiver.

| Description | Part No. | Price |
|------------------------------------|----------|-------|
| AV8OR GPS - North / South America | 11-06623 | . |
| AV8OR GPS - International | 11-06624 | . |
| Accessories | Part No. | Price |
| Hard Copy Manual | 11-07815 | . |
| Battery 800MAH with Bracket | 11-06936 | . |
| 120/220V AC Adapter | 11-06938 | . |
| Remote GPS Antenna | 11-06939 | . |
| Airgizmos Panel dock for the AV8OR | 11-07782 | . |
| Aviation Mount | 11-06940 | . |
| Auto Mount - Dashboard | 11-06941 | . |
| Auto Mount - Windshield | 11-06942 | . |
| Battery 1600MAH | 11-06943 | . |
| RS 232 Cable | 11-06944 | . |
| 4GB SD Card Americas Database | 11-06962 | . |
| 4GB SD Card International Database | 11-06961 | . |



AV8OR™ HORIZON 3D COCKPIT INFORMATION SYSTEM

The Mobile Computer Platform (MCP) is a Tablet PC with a 7" high-resolution LCD display. This unit draws power from the aircraft's power supply and includes rechargeable batteries for wireless operation in the event of power loss. The unit can be mounted on the yoke or in any number of locations within the pilot's field of view.

The INU can be mounted on any level surface inside the aircraft such as under the passenger seat. The GPS-enabled Inertial Navigation Unit (INU) is a self-contained 3D solid-state inertial navigation sensor system with: * WAAS-enabled GPS receiver * 3D solid state gyros * Barometric pressure sensor * Battery backup * Bluetooth® wireless interface

Equipped with built-in 3D Synthetic Vision and IFR approach plates, with optional satellite weather and 3D traffic.

Synthetic vision technology is poised to revolutionize IFR flight, dramatically reduce pilot workload and increase flight safety. By combining both positional and situational data, the pilot can be presented with a realistic and accurate representation of the view through the aircraft windshield.

Synthetic Vision Systems (SVS) integrate data from terrain databases, Advanced Features: * True 3D Synthetic Vision * 3D emergency guidance to nearest airport * 2D moving maps with high-resolution terrain * Split-screen 3D/2D option * "Touch and see" moving map * "Touch and drag" map panning * Terrain awareness warning system view (TAWS) * Built-in flight planning * DUATS flight plan importing * FAA approach plates * SIDS/STARS * Built-in barometric altitude option * Satellite weather option * Traffic avoidance option * Automatic preheating capability for colder climates * Built in notepad for fast copying of clearances

The XM Satellite Weather Unit provides near real-time NEXRAD weather data, TAFs, METARS, TFRs, and NOTAM information, which are essential to improving the pilot's decision-making. The receiver can be integrated with the AV8OR Vision 3D system via USB.

Depending on XM weather data subscription, the following information is available: NEXRAD: Freezing levels, METARS/TAFs: Lightning, Winds aloft: Cloud tops

By integrating data from Zaon XRX, it displays 2D quadrant bearing, distance, and altitude information, as well as the world's first portable 3D Traffic View. The receiver can be integrated with the AV8OR Vision 3D system via USB.

| Description | Part No. | Price |
|--|----------|-------|
| AV8OR Horizon 3D | 11-05997 | . |
| Accessories | Part No. | Price |
| Accessory Kit Includes: Samsung Tablet Mount, INU Aircraft Mount Plate, Dual Power Supply, GPS Antenna | 11-06752 | . |
| Dual Horizon antenna GPS/XM | 11-07019 | . |
| Dual Ps for Motion Tablet/INU | 11-07020 | . |



AV8OR™ VISION 3D COCKPIT INFORMATION SYSTEM

Remote Touch Screen Display. Modular Mobile Computing Platform. Synthetic Vision - Improving Situational Awareness: Equipped with built-in 3D Synthetic Vision and IFR approach plates, with optional satellite weather and 3D traffic. Combining both positional and situational data, the pilot can be presented with a realistic and accurate representation of the view through the aircraft windshield. Advanced

Features: * True 3D Synthetic Vision * 3D emergency guidance to nearest airport * 2D moving maps with high-resolution terrain * Split-screen 3D/2D option * "Touch and see" moving map * "Touch and drag" map panning * Terrain awareness warning system view (TAWS) * Built-in flight planning * DUATS flight plan importing * FAA approach plates * SIDS/STARS * Built-in barometric altitude option * Satellite weather option * Traffic avoidance option * Automatic preheating capability for colder climates * Built in notepad for fast copying of clearances.

Position information is provided by a state-of-the-art ARS/GPS built-in Attitude Reference System (ARS) with WAAS GPS and Solid-State Barometric pressure sensor, a completely independent, battery backup.

Integrated Technologies:

WxWorx XM® Satellite Weather Unit - The receiver can be integrated with the AV8OR Vision 3D system via USB.

Zaon XRX PCAS™ Traffic Detection - By integrating data from XRX, AV8OR Vision 3D displays 2D quadrant bearing, distance, and altitude information, as well as the world's first portable 3D Traffic View. The receiver can be integrated with the AV8OR Vision 3D system via USB.

| Description | Part No. | Price |
|--|----------|-------|
| AV8OR Vision 3D with HDD | 11-07012 | . |
| AV8OR Vision 3D with SSD | 11-07013 | . |
| Accessories | Part No. | Price |
| Accessory Kit Includes: ICD-800 VISION Display Mount, VISION ACU Mount, VISION ACU DC Adapter cable 12ft. & VISION ACU AC Power Supply | 11-07021 | . |



WXWEATHER

WX WEATHER BASIC RECEIVER KIT - Price includes receiver only (no power). Requires interface module. PN 11-06715 **\$433.95**

ACCESSORIES

| Description | Part No. | Price |
|---|----------|-------|
| PORTABLE ANTENNA - The XM antenna intercepts transmissions from XM WX Satellite Weather and feeds them to the receiver for decoding. The antenna comes complete with a 23ft. cable that feeds directly into the first generation WxWorx receiver via a FAKRA connector. NOTE: For use with the original WxWorx receiver only. | 11-06716 | . |
| DIGITAL ANTENNA Code:DMANT2 | 11-06717 | . |
| USB INTERFACE Code:USBMOD | 11-06718 | . |
| USB INTERFACE Code:POEMOD | 11-06719 | . |
| BT INTERFACE Code:POTMOD | 11-06720 | . |
| BT INTERFACE Code: RS232MODB | 11-06721 | . |
| RS232 INTERFACE / AV8OR Code: RS232MOD | 11-06722 | . |
| WX ON WINGS SOFTWARE - Includes a base install (of latest version 1.37) as well as the mapping upgrade required for GPS connectivity. Code:APSW | 11-06722 | . |
| WX ON WATER SOFTWARE - Includes a base install of the program, as well as, the mapping upgrade required for GPS connectivity. Code:WPSW | 11-06722 | . |
| WX TUNES PACKAGE - Includes WxTunes software and Audio Cable. NOTE: This software is only available for the new receiver [model REWX91D]. Code:WXTUNES | 11-06725 | . |
| 25' DIGITAL EXTERNAL CABLE - 25 ft. extension cable for the XM Digital Antenna. Code:EXT25 | 11-06727 | . |
| 50' DIGITAL EXTERNAL CABLE - 50 ft. extension cable for the XM Digital Antenna. Code:EXT50 | 11-06728 | . |
| AUDIO CABLE Code:AUDCAB | 11-06729 | . |
| DC POWER SUPPLY - 50 ft. extension cable for the XM Digital Antenna. Code:DCDC2 | 11-06730 | . |
| DC POWER WITH PLUG Code:DCDCLUGS | 11-06731 | . |
| AC POWER SUPPLY Code:ACDC2 | 11-06732 | . |
| PORTABLE ANTENNA Code:PANT4 | 11-06734 | . |



XM DIGITAL ANTENNA

The complete antenna system for XM and XM WX. Includes 50' cable and mount.

P/N 11-06735

LOWRANCE - GIPSI GPS - ANYWHERE MAP®



LOWRANCE 2000C COLOR GPS

Features •Large sunlight-viewable 5" diagonal, 256-color display with high-detail 320V x 240H pixel resolution •Unique & exclusive glass-cockpit navigational screens •Exceptional Lowrance navigation precision, performance, and reliability •Marine and Automotive modes for total navigation versatility •Complete buy-&-fly package includes all accessories for air, land, & sea navigation. Included Accessories: • MapCreate™ mapping software (DVD) • MMC/SD Interface with USB • Jeppesen® & Obstructions databases preloaded on a 32MB MMC/SD memory card • RAA-4 Remote Amplifying Antenna

| Description | Part No. | Price |
|--------------------------------------|----------|-------|
| Lowrance 2000C Americas With Terrain | 11-02824 | . |
| ACCESSORIES | | |
| Description | Part No. | Price |
| Portable Power pack | 11-02937 | . |
| AC Adapter 2000C | 11-03579 | . |
| Terrain US 512MB | 11-04282 | . |
| Power Data Cable | 11-19358 | . |
| Cigarette Power Adapter | 11-19352 | . |

LOWRANCE AIRMAP 600C



512MB Terrain Awareness Americas included with the Jeppesen® Americas and Lowrance Obstructions aeronautical databases, as well as the enhanced Safe Flight 21 Airport taxiway map data. AirMap 600C comes complete with an MMC/SD digital card reader for hassle-free online Jeppesen® updates; the exclusive MapCreate™ Topographical custom mapmaking CD Software; a remote amplifying antenna; AA batteries; cigarette plug power adapter; plus yoke and car mounts.

| Description | Part No. | Price |
|--------------------------------------|----------|-------|
| Lowrance AIRMAP 600C Americas | 11-04528 | . |
| Lowrance AIRMAP 600C International | 11-04614 | . |
| Accessories | | |
| Description | Part No. | Price |
| 600C Black Holster | 11-04619 | . |
| 600C Cigarette Lighter Adapter | 11-04620 | . |
| 600C Remote Antenna | 11-04621 | . |
| 600C PC Data Cable | 11-04622 | . |
| 600C PC Cable With Cigarette Adapter | 11-04623 | . |
| 600C Yoke Mount | 11-04624 | . |
| Terrain 512MB America | 11-04282 | . |
| Terrain US 1GB | 11-04626 | . |
| Mapcreate TOPO | 11-04627 | . |
| Mapcreate TOPO CD Rom | 11-04628 | . |
| Mapcreate Canada | 11-04629 | . |
| Mapcreate Canada CD | 11-04630 | . |
| MMC Card USB | 11-04631 | . |

VFLITE AIRMAP 500/1000 INTERACTIVE GUIDE



Want to be able to use all the power that your AirMap 500 & 1000 GPS can offer? We're sure you do - and that you'd rather figure it out on the ground at your leisure (instead of flying "heads down" trying to learn it). The new VFLITE guide on the feature-rich Lowrance portables will greatly reduce the frustration that often comes from reading the manual, enable you to learn in a safe environment and let you maximize the investment you made in your AirMap. P/N 11-02760

GIPSI VOICE BASED GPS



The GiPSi is portable, voice based, Global Positioning System (GPS) device for General Aviation pilots. It allows you to maintain a much higher state of situational awareness. There is no "heads down" navigating. The interaction is very intuitive, it speaks to the pilot. The device does not require extensive training. The pilot can focus on "Flying the Airplane". It enables a pilot to create a flight plan with waypoints, on their computer and download it to the device. It automatically logs flight movement activity such as time stamped altitudes, airspeeds, track and bearing deviations as well as way points. It, at any time, can notify a pilot of exact location i.e. a "Where" function; the "Nearest" airport with name, bearing runway length, altitude and distance from current location. It stores in its database information on all United States airports. A GPS receiver is embedded in the GiPSi circuitry. The unit operates off of, up to, twelve (12) satellites. For even higher accuracy the GiPSi uses the Wide Area Augmentation System (WAAS). It weights just 3 ounces and measures 3-1/2" long by 2" high by 1" in depth. The device is controlled by a five (5) position joystick switch. It has a USB port that allows a computer connection for downloading and uploading information. The unit can also be charged via the USB connection. It ships with a wall charger as well as a cigarette lighter connector which can be used to charge the unit using either a 110V AC or 12V DC connection. There is a 3.5mm (MP3 type) plug for ear bud earphone. LEDs that indicate satellite strength are embedded in the case. P/N 11-07768

ANYWHERE TRAVEL COMPANION



Everything You Need "Built-In"
The ATC is a special version of the HP iPAQ 310. It retains all of the functionality of the original iPAQ Travel Companion and adds to this a special EMBEDDED EDITION of Anywhere Map®.
Not only does the ATC's 4.3" ultra high-definition 800 x 480 screen give the best view ever in handheld devices, it's touch-screen operated, with big buttons; and unlike many such products, there is nothing to load, nothing to initialize, no "internal computer" to operate - just turn it on and fly!

The ATC is convenient and capable, including among its talents the patented "cones of safety" glide calculator, high resolution terrain, flight planning and obstacle and terrain warnings. Options include XM Weather and Pocket Plates® approach plates that provide the features and safety margin available on modern panel-mounted units, and then some. "By pilots, for pilots," defines the eight years of intensive development that have resulted in the most intuitive navigation system that ever went into an airplane.

The ATC offers an advanced high-resolution terrain map, detailed aviation data including nav aids, airspace, airways, SUAs and TFRs, with advanced flight tools like a VNav HSI, flight planning, weight & balance, calculator, and an Airport Guide. Anywhere Map's Personal Digital Copilot® tracks your flight and issues Reminders like Switch Fuel Tanks and Begin Descent along with Obstacle and Terrain Warnings.

System Includes:

- Anywhere Map Travel Companion with built-in GPS
- Aircraft Mount
- Automotive Mount
- Smart Card
- Power Adapter (12V-40V)
- AC Power Adapter
- 1GB SD Card [Pre Installed]

| Description | Part No. | Price |
|--|----------|-------|
| Anywhere Map Travel Companion | 13-06004 | . |
| Screen Protector for the Anywhere Map Travel Companion | 11-07025 | . |

ANYWHERE POCKET PLATES SOFTWARE



Pocket Plates Software with 6 months of Updates. Entire 12,000+ page library of current NACO (FAA) approach procedures for the lower 48 states for display on a Pocket PC (PDA) computer, or Windows® laptop or tablet PC. Included with the plates are all ephemera: performance, Arrivals and Departures. Exact reproductions of current procedures as published by the Charting Office. Pocket Plates are updated online by subscription every 28 days. Satisfies requirements for Part 91 usage.

Real-time GPS Position - Pocket Plates contain all underlying fixes, intersections, airports and nav aids in map coordinate format. Plates are calibrated, a simple process that takes about ten seconds, consisting of identifying two objects on the plate such as a fix and the airport. Calibrated plates display real-time GPS position in flight.

Product components - Pocket Plates consists of a Plate Manager that installs on your laptop or desktop PC, and a Plate Viewer for displaying the procedures on a Pocket PC. The Plate Manager selects which plates you store on your Pocket PC or Tablet; performs automatic Auto-Pilot Updates of the plate library, and prints our hard copies of plates as backup for specific routes.

Ease of use - Far easier to use in an aircraft than traditional paper books or cumbersome binders. Select approaches either by typing in an airport identifier or by tapping on geographic regions of the country. The procedure is intuitive and very fast and there are no fragile paper plates to remove from a binder.

Storage Options - The entire 12,000-page U.S. plate library and the Plate Manager are stored on a Windows® PC in under 1 Gigabyte of disk space. Plates are stored for viewing on Pocket PC or Raven® computers using a memory card. A 1-gigabyte card will store the entire library with about 200 MB left over. If your flights are typically restricted to a smaller geographic area, lower capacity storage cards may be used. Both Compact Flash® and Secure Digital® cards may be used for storage, depending on the facilities offered by the display device.

Compatibility - Pocket Plates is supported for Pocket PCs with ARM processors such as iPAQs and Toshiba, and Windows® 2000/XP computers. It is not currently supported on Casio Pocket PCs.

P/N 11-02239

AV

AVMAP PORTABLE GPS

GEO PILOT II



GeoPilot II, the new portable navigator developed by AvMap based on the success of the GeoPilot, is high performance and truly affordable. More Hi Quality hardware and Software features have been added: GeoPilot II is faster than ever thanks to the new 300 MHz processor and is more compact and practical with the built-in GPS receiver and richer

in information. **Large display, Safe Navigation** - AvMap GeoPilot II displays all the information you need on a wide 5" color LCD. The display is sunlight-readable and equipped with a sensor for automatic brightness control. The information is sharp and bright and the map page is fully customizable. The large control buttons and unique toggle cursor control make navigating through menus and editing flight plans easy. **Most Accurate Information** - The maps preloaded on the SD memory card includes the Jeppesen® navigation database with terrain and vertical obstructions. The Map also includes Victor Airways, marine objects, ULM Aerodromes and private airports. This enhanced database provides more navigation and emergency "nearest" options. **Enhanced Situational Awareness** - Situational awareness is greatly improved with TAWS (Terrain Awareness Warning System). With the new Crossed Airspace Predictor function, you can get a preview of the airspaces that you will cross along your flight, while the Crossed Airspace Advisor provides warnings during the flight on airspaces being crossed. **Multifunctional: Navigate by Sky and Land!** - AvMap GeoPilot II is engineered for aeronautical as well as terrestrial use as it can fit perfectly in your aircraft and in your car. With the optional 2GB SD Card preloaded with Tele Atlas Maps of all North America or Europe, GeoPilot II converts into an advanced car navigator with turn-by-turn vocal instructions! **Hardware** : Dimensions (mm): 140x100x35.4 Weight: 390g Display: LCD TFT 5" (12,7 cm) with audio - video input Display brightness: 400 nits Automatic brightness control: Yes + Night Palette for night flying Display Colors: 64 k Display resolution: 320x240 pixels GPS Receiver: Built-in Sirf Star III 20 channels Processor: Arm9 300Mhz RAM: 32 MB Memory Support: Secure Digital (SD) 256 / 512 MB Battery: Built-in Li-Ion rechargeable battery Power supply: Charger 10/35 V DC Built-in Speakers External GPS antenna serial Port **Operating System:** AvMap Software update: Free 2D view: Land Elevation (color coded topographic map showing the altitude of the terrain) Turn-by-turn vocal instructions: With built-in speakers (only for terrestrial navigation). Full flight planning capability: Up to 15 flight plans of up to 100 legs each Editable aircraft checklist, Trip computer, Full nav data Page, Full simulator functions, TAWS - Terrain Awareness and Warning System: Yes + Crossed Airspace Predictor and advisor Integration with other on board navigation systems.

Content of the box :

SD memory card External GPS receiver, Flexible holder with suction cup Quick start guide

| Description | Part No. | Price |
|---------------------------------------|----------|-------|
| AvMap GeoPilot II | 11-05813 | . |
| AvMap GeoPilot II - European Database | 11-06249 | . |
| Accessories | Part No. | Price |
| AvMap European D/C Geopilot II | 11-06485 | . |
| GeoPilot World Wide Data Card | 11-06486 | . |

GEOPILOT II PLUS



High Performance at an Affordable Price - The Geopilot II PLUS, the new portable aeronautical navigator developed by AvMap, is highly performing but truly affordable. GeoPilot II PLUS is faster than ever thanks to the new 300 MHz processor, more compact and practical with the built-in battery and GPS receiver, and an extra serial port available for connection with PC and autopilot

devices. **Large Display, Safe Navigation** - AvMap GeoPilot II PLUS displays all the information you need on a wide 5" color LCD. The display is sunlight-readable and equipped with a sensor for automatic brightness control and an audio video input. The information are clearly visible and the map page is fully customizable. **Weather Conditions** - With an optional antenna you can receive constantly updated XM/WX weather conditions: NEXRAD (next generation radar), and Lightning information are displayed on the map. Enhanced Situational Awareness With the TAWS GeoPilot II PLUS displays your position in relation to surrounding terrain. With the new Crossed Airspace Predictor function, you can get a preview of the airspaces that you will cross along your flight, while the Crossed Airspace Advisor provides warnings during the flight on airspaces being crossed. **Most Accurate Information** - The cartography preloaded on the SD memory card includes the Jeppesen® navigation database with terrain and vertical obstructions. The Map also includes and Victor Airways, marine objects, ULM Aerodromes and private airports. This enhanced database provides more navigation and emergency "nearest" options. **Multifunctional: Navigate by Sky and Land!** - AvMap GeoPilot II PLUS is engineered for aeronautical as well as terrestrial use as it can fit perfectly in your aircraft and in your car. With the 2GB SD Card preloaded with Tele Atlas Maps of Europe or North America GeoPilot II PLUS converts into an advanced car navigator with turn-by-turn vocal instructions! SD included at no extra costs!

Hardware : Dimensions (mm): 140x100x35.4 Weight: 390g Display: LCD TFT 5" (12,7 cm) with audio - video input Display brightness: 400 nits Automatic brightness control: Yes + Night Palette for night flying Display Colors: 64 k Display resolution: 320x240 pixels GPS Receiver: Built-in Sirf Star III 20 channels Processor: Arm9 300Mhz RAM: 32 MB Memory Support: Secure Digital (SD) 256 / 512 MB Battery: Built-in Li-Ion rechargeable battery Power supply: Charger 10/35 V DC Built-in Speaker: Yes External GPS antenna serial Port

Operating System: AvMap Software update: Free 2D view: Land Elevation (color coded topographic map showing the altitude of the terrain) Turn-by-turn vocal instructions: Yes, with built-in speakers (only for terrestrial navigation). Full flight planning capability: Up to 15 flight plans of up to 100 legs each Editable aircraft checklist, Trip computer, Full nav data Page, Full simulator functions, TAWS - Terrain Awareness and Warning System: Yes + Crossed Airspace Predictor and advisor, Integration with other on board navigation systems, Full or split HSI / RMI screen with data fields

Content of the box : SD memory card, External GPS receiver, Flexible holder with suction cup, Quick start guide

P/N 11-05814.....

ACCESSORIES

AvMap WX/XM Package P/N 11-07002.....

AV

AVMAP EKP IV



The AvMap EKP-IV brings situational awareness to the next level in a portable moving map GPS. Featuring a new, more compact unit profile with an even LARGER and more brilliant color, sunlight-viewable LCD display. AvMap EKP-IV... redefining portable GPS moving map systems. Features: • STILL the largest screen (7" diagonal) • Compact, sleek design (4.75"W x 7"L x 1.5"H) • Internal 12-channel GPS • Operates on aircraft 10 to 35-volt power supply. • Internal batteries for emergency use (up to 1.5 hours) • Jeppesen® NavData for the

U.S., Canada, Central & South America. • Full flight planning capability (10 flight plans of up to 100 legs each) • Full or split HSI screens with data fields • Vertical navigation routing • Calculator functions: fuel, winds, timers, trip computer • Aircraft checklists • Full simulator functions • Data storage on Compact Flash cards • Integration with other onboard navigation systems: autopilot, GPS, external antenna

| Description | Part No. | Price |
|----------------------------|----------|-------|
| AvMap EKP-IV Americas Data | 11-02837 | . |
| AvMap EKP-IV European Data | 11-05746 | . |
| AvMap EKP IV with WxWorx | 11-06738 | . |
| CALL FOR SPECIAL PRICE! | | |
| Accessories | Part No. | Price |
| BNC to SMB Connector | 11-01275 | . |
| Spare Patch Antenna | 11-01276 | . |

| Accessories | Part No. | Price |
|--|----------|-------|
| Spare Power Cord | 11-01277 | . |
| Straight Power Cord | 11-02403 | . |
| World Wide Data Card | 11-06487 | . |
| R-A-M™ EKP MOUNT SYSTEMS(all include EKP back plate) | | |
| Accessories | Part No. | Price |
| Yoke mount system-adjustable clamp | 11-02382 | . |
| Floor mount system-12" flex arm | 11-02405 | . |
| Rail mount system-12" flex arm | 11-02406 | . |
| Tripod Combo mount system-12" flex arm | 11-02407 | . |
| Air Gizmos Panel Dock for AVMAP EKP-IV | 11-04371 | . |

POWER OPTIONS

12V AC ADAPTER - This 12V AC adapter provides you with a perfect source for in-home flight planning and simulator use. Power your moving map from an 115v outlet and relax in the comfort of your home while you plan your favorite trip. P/N 11-01273.....

Go-Pack - For your portable power needs! The pack includes a 12v battery pack (4000 mAh NiMH), charger, padded case and military belt clip (1.4 lbs., single charge last up to 4 hrs) P/N 11-00509.....

Jeppesen® NavData C-card (America) - P/N 11-02395.....

Memory C-Card (for the EKP III only) (2Mb user card) P/N 11-02397.....



GPS ANNUNCIATORS

With fingertip annunciation and flight information in the pilot's primary view, Annunciation Control Units (ACU) offer important features in an efficient design. As an interface with popular NAV and GPS systems, the ACU provides vital safety information including waypoint, approach status and integrity alerting. Approved to strict TSO standards, Mid-Continent ACUs are engineered as a compact, affordable solution to the challenge of installing several switches. Most versions are configured 14V or 28V with vertical or horizontal mounting and feature long-life lamps with automatic photocell dimming.



MD41-1468A



MD41-1408A

Vertical View

Approved to strict TSO standards, Mid-Continent ACUs are engineered as a compact, affordable solution to the challenge of installing several switches. Most versions are configured 14V or 28V with vertical or horizontal mounting and feature long-life lamps with automatic photocell dimming.

| GARMIN WAAS ACU - GNC 420W, GNS 430W/530W | | | |
|---|-----------------------------|----------|-------|
| Model No. | Configuration | Part No. | Price |
| MD41-1464A | Horizontal, 14V (head only) | 10-02665 | . |
| MD41-1468A | Horizontal, 28V (head only) | 10-02663 | . |
| MD41-1474A | Vertical, 14V (head only) | 10-02666 | . |
| MD41-1484W | Horizontal, 14V WAAS | 10-02657 | . |
| MD41-1488W | Horizontal, 28V WAAS | 10-02659 | . |
| MD41-1494W | Vertical, 14V WAAS | 10-02660 | . |
| MD41-1498W | Vertical, 28V WAAS | 10-02661 | . |

| GPS 400/500, GNC 420/520, GNS 430/530 | | | |
|---------------------------------------|-------------------------------------|----------|-------|
| Model No. | Configuration | Part No. | Price |
| MD41-1404A | Horizontal, 14V (head only) | 10-02669 | . |
| MD41-1404A | Horizontal, 14V (with remote relay) | 10-02670 | . |
| MD41-1408A | Horizontal, 28V (head only) | 10-02678 | . |
| MD41-1408A | Horizontal, 28V (with remote relay) | 10-02667 | . |
| MD41-1418A | Vertical, 28V (head only) | 10-02672 | . |
| MD41-1418A | Vertical, 28V (with remote relay) | 10-02671 | . |

GARMIN SL 30 NAV/COM RADIO



Powerful 760 channel comm radio with a 200 channel VOR, glidescope and localizer receiver. Built-in course deviation indicator may be displayed and the SL 30 interfaces with most common mechanical CDIs and HSIs. The SL 30 can be shipped for installation in any aircraft and does not require dealer installation.

Garmin SL 30..... P/N 11-03581
With Harness P/N 11-05109

GARMIN SL 40 COM RADIO



Monitor ATIS while never leaving your assigned ATC channel. The SL

40 always gives priority to the active channel, meaning you'll never miss a transmission. With 10-watt transmit power and only 35-watt DC input, the SL 40 is power efficient and cool running.

Features: 760 channels; frequency range 118 to 136.975 MHz; tunes to National Weather frequencies; 16-character, high-intensity, alphanumeric LED display; transmit status indicator; capacity to store and recall 8 user-defined and previous frequencies.

P/N 11-02203

GARMIN GDU 375 & 370



Designed for retrofit installation in light sport (LSA) and experimental/kitbuilt aircraft, the GDU 375 is a panel-mount multi function display unit that provides a non-TSO'd "glass cockpit" option at a very affordable price.

7-inch high-definition WVGA flatscreen with dual redundant power inputs, mounts flush in the panel. Operation is simple: There's a handy rotary joystick cursor control for data entry, soft keys for mode selection, front-loading SD card slot for expansion memory and updates, plus an easy-to-navigate G1000®-like graphical user interface. Comes with Garmin FliteCharts® and SafeTaxi® pre-installed. There's also AOPA Airport Directory data that offers detailed information on over 7,400 U.S. airports, along with airports of entry for Canada, Mexico and the Caribbean. Weather or not?

The primary difference between the GDU 375 and its similar-looking sibling, the GDU 370, is that you get support for XM WX™ satellite weather with the GDU 375. (XM subscription required). You also have the option to

add over 170 channels of high-quality XM Satellite Radio programming – music, sports, news, talk and more – for an additional monthly fee.

In the future, the GDU 375 will accommodate not only MFD capability, but flight and engine instruments as well. With the purchase of additional hardware, your MFD will also become a PFD providing attitude/directional guidance with ADAHRS+Engine monitoring. These additional components are scheduled to be available in the second half of 2009.

*A single update of FliteCharts comes preloaded on the unit. FliteCharts will automatically disable when the data is over six (6) months out-of-date (six month period to commence when map is loaded in the factory). Each box will contain a certificate for one free current FliteCharts download. After the six month period, you must purchase a subscription for continuous FliteCharts chart availability.

| Description | Part No. | Price |
|--------------------------------------|----------|-------|
| GDU 375 Americas Panel Mount | 11-07210 | . |
| GDU 370 Americas Panel Mount (no XM) | 11-07211 | . |
| GDU 370 Atlantic Panel Mount (no XM) | 11-07212 | . |
| GDU 370 Pacific Panel Mount (no XM) | 11-07213 | . |

GARMIN GMX 200 MULTI-FUNCTION DISPLAY



For the ultimate in situational awareness, the GMX 200™ multi-function display leads the pack with a viewing area almost 20 percent larger than other panel-mounted MFDs and an impressive list of features and nav graphic interfaces.

Big-Picture Display - You'll always get the big picture with the GMX 200's sunlight-readable, high-resolution, 640 x 480, display. In addition to its huge AMLCD display, it comes with enhanced backlighting that dramatically improves color and contrast, resulting in chart depictions and images that are brighter and more vivid in all lighting conditions.

Big-Time Features - Similar to its predecessor, the MX20™, the GMX 200 is easy-to-use with multiple functions and useful features that make navigation simple and provide an extra margin of safety: • At a glance, see aircraft's position relative to terrain, obstructions, weather, airways, restricted airspace & more • Select between several charting options & add or remove details with the simple press of a soft key • New rotary knob allows for quicker map scale changes and entry of data • Front loading SD card-slot allows for expanded memory & makes loading updated charts uncomplicated • Fits in same panel space as the MX20 & includes more serial ports for added sensor capacity.

Detailed Data - Custom map with sectional-like depiction of the Lake Tahoe area. The GMX 200 includes high resolution terrain and hydrography data for the entire world which is preloaded for an unmatched presentation even at the lower zoom scales. The Garmin Base Map with cities, roads, rivers, and lakes has been added to further improve situational awareness. An aviation database featuring Jeppesen® NavData™ is used to draw airports, airways, nav aids, airspace, and more. Map scales range from one-fourth of a mile to a whopping 2500 miles. A unique split screen function allows you to simultaneously view two charting options along with the vertical profile for the elevation of the terrain along the route of flight. Split screen allows you to combine any two charting options with a vertical profile of the terrain. Custom map with airspace depictions near Johnson County Airport in Olathe IFR Enroute chart with high and low altitude airways

Seamless Integration - With the addition of the GDL 69, you can add XM WX Satellite Weather information to the GMX 200. Graphical weather depictions including NEXRAD, METARs, TAFs, TFRs, winds aloft, echo tops, precipitation type at the surface, lightning strikes, storm-cell data, AIRMETs, and SIGMETs can be received and displayed regardless of altitude. Combine animated NEXRAD images with the maximum zoom range of 2500nm and a nationwide view of the weather is presented on one screen. The GMX 200 also provides a user interface for the more than 150 channels of XM audio with the GDL 69A. Similar to the MX20, the GMX 200 comes in three versions: Standard, Traffic, and Radar/Traffic.

GMX 200 Traffic — supports interfaces to Garmin TIS transponders and ADS-B transceivers, and can also be connected to certain TCAS 1 & TAS systems.

GMX 200 Radar/Traffic — supports traffic interfaces and can also be interfaced with Garmin's GWX 68™, a new color digital weather radar with 6.5 KW of transmit power. When connected to the GWX 68™, the Radar/Traffic model displays real-time weather ahead of the aircraft supporting both horizontal and vertical perspectives.

The GMX 200 may be interfaced with the Garmin 400/500 series, GNS 480™, Garmin GDL 69/69A, Garmin GTX 330/33™, Garmin GDL 90™, Garmin GWX 68, as well as many other manufactures' GPS navigation equipment.

GMX 200 must be installed by a Garmin Dealer. Can only be sold over the counter to experimental aircraft (must verify) with harness. Request for Quote.

| | |
|-----------------------------|----------------|
| GMX 200 Standard | 11-04547 |
| GMX 200 Traffic | 11-04657 |
| GMX 200 Radar | 11-04658 |
| GMX 200 Radar/Traffic | 11-04660 |



GARMIN GNS 530W

The GNS 530W is an all-in-one GPS/Nav/Comm solution. It features a WAAS-certified GPS, 2280-channel capacity comm and 200-channel ILS/VOR with localizer and glideslope. High-speed 5 Hz processing makes navigation calculations and map redraw rates five times faster than earlier GNS series navigators.

Built-in WAAS navigation capabilities. It is approved to fly LPV "glideslope" approaches without reference to ground-based nav aids of any kind. An advanced 15-channel receiver capable of five position updates per second, GNS 530W meets the FAA's stringent TSO C146a standards for WAAS "sole means" navigation — providing vertical and lateral approach guidance into thousands of U.S. airports previously inaccessible in IFR conditions.

GNS 530W's 5-inch high-contrast display with brilliant colors makes it easy to read and interpret pilot-critical information. Conveniently scan information from wide viewing angles, even in direct sunlight.

Integrates built-in terrain and navigation databases. The 530W's huge Jeppesen® database, updated with front-loading data cards, contains location reference for all airports, VORs, NDBs, Intersections, Flight Service Stations, published approaches, SIDs/STARs, Special Use Airspace and geopolitical boundaries. A detailed basemap shows airports, cities, highways, railroads, rivers, lakes, coastlines and more.

- GNS 530W GPS/NAV/COM..... P/N 11-00550.....
- GNS 530W With Harness (Exper. A/C) .. P/N 11-06747.....
- GNS 430W/530W Wiring Harness..... P/N 11-06749.....
- Navishield 530 Screen Protector..... P/N 05-04227.....
- Flight Plan Migrator Kit..... P/N 11-07592.....
- Flight Plan Data Card..... P/N 11-07593.....



GARMIN GNS 430W

All-in-one GPS/Nav/Comm solution. It features a WAAS-certified GPS, 2280-channel capacity comm and 200-channel ILS/VOR with localizer and glideslope. High-speed 5 Hz processing makes navigation calculations and map redraw rates five times faster than earlier GNS series navigators.

Built-in WAAS navigation capabilities. It is approved to fly LPV "glideslope" approaches without reference to ground-based nav aids of any kind. Featuring an advanced 15-channel receiver capable of five position updates per second, GNS 430W meets the FAA's stringent TSO C146a standards for WAAS "sole means" navigation — providing vertical and lateral approach guidance into thousands of U.S. airports previously inaccessible in IFR conditions.

4-inch high-contrast display with brilliant colors makes it easy to read and interpret pilot-critical information. Conveniently scan information from wide viewing angles, even in direct sunlight.

Integrates built-in terrain and navigation databases, providing a clear, concise picture of where you are and where you're heading. The 430W's huge Jeppesen® database, updated with front-loading data cards, contains location reference for all airports, VORs, NDBs, Intersections, Flight Service Stations, published approaches, SIDs/STARs, Special Use Airspace and geopolitical boundaries.

- GNS 430W GPS/NAV/COM..... P/N 11-06748.....
- GNS 430W with harness (Exper. A/C).... P/N 11-06750.....
- GNS 430W/530W Wiring Harness..... P/N 11-06749.....
- Navishield 430 Screen Protector..... P/N 05-04224.....
- Flight Plan Migrator Kit..... P/N 11-07592.....
- Flight Plan Data Card..... P/N 11-07593.....

The Garmin GNS 530W/430W can only be sold over the counter to experimental aircraft (must verify) with harness. For certified aircraft, it must be installed by a Garmin Dealer.

(price of installation not included)

JEPPESEN INTERACTIVE 530/430 TRAINERS



Computer based training program for the pilot who wants an audio-visual, hands-on way to quickly master the Garmin 530/430 GPS. Windows and Mac compatible.

- Jeppesen GNS 530/430 Advanced..... P/N 13-05645.....
- Jeppesen GNS 530/430 Interactive..... P/N 13-05644.....
- Jeppesen GNS 530/430 Training..... P/N 13-05646.....



GARMIN GI 102A & GI 106A CDI'S

The GI 102A and GI 106A course deviation indicators (CDI) from Garmin feature rectilinear meter movements, resolver output for GPS interface, and internal GPS mode annunciation & VLOC. Works with the Garmin 430W, 530W, & SL 30. The 102A is VOR/LOC CDI and the 106A is VOR/LOC/GS CDI. Size: 3.25" w x 3.25" h x 4.625" d. The GI 102 is designed for VFR use. The GI 106A is designed for IFR installations.

- GI 102A CDI..... P/N 11-18980.....
- GI 106A CDI..... P/N 11-05768.....

Call For Special Price!

GARMIN GTX 330 MODE S TRANSPONDER



A Level 2 Mode-S transponder with exciting datalink traffic capabilities. Sharing the same keypad & digital display with the popular GTX 327, the GTX 330 adds

to the features with an outside air temperature display (temp. input required), altitude monitor with voice audio alert, and density altitude computations (temperature input required). But the real excitement lies in the GTX 330's datalink traffic capabilities through the FAA's Traffic Information Services. GTX 330 promises to deliver effective traffic information to the GA cockpit in busy terminal environments at a fraction of the cost of current traffic systems. The TIS system is available through 124 Mode-S Traffic Control radar sites throughout the U.S. Aircraft within a 60nm (expected to increase to 90+nm) radius of a Mode-S radar site will receive traffic advisories and warnings from ATC via Mode-S datalink, and this info will be displayed on Garmin 400/500 series products. This system will display 8 nearest targets within a 7nm radius and ±3,500 feet of the aircraft. Pilots will receive both visual traffic information (via 400/500 series products) and radio alerts of traffic in the area. The GTX 330 meets all requirements of the Mode-S mandate in Europe, which requires Mode-S for IFR traffic by 2003 and all VFR traffic by 2005. GTX 330 will be offered in diversity & non-diversity models to meet the requirements of a variety of aircraft and operations. The GTX 330D (diversity model) is the first panel-mount diversity-model transponder available. 2 year warranty.

| Description | Part No. | Price |
|---------------------------------------|----------|-------|
| GTX-330 Mode S Transponder | 11-01252 | |
| GTX-330 Mode S Transponder w/ Harness | 11-05893 | |

GARMIN GTX 327 MODE C TRANSPONDER



With the intro of the GTX 327, Garmin revolutionizes a part of the panel that has been long overlooked. This full-featured, TSO certified transponder

brings a unique level of functionality and utility to your airplane. Its solid state transmitter provides 200 watts nominal power output and eliminates the need for a cavity tube which will eventually fail and require expensive replacement. And since the GTX 327 design is 100% solid state there is no warm up time, lower power consumption and lower heat emission. All of which translates to a longer service life. Some of the GTX 327 biggest features are the easiest to see. Among them, the easy-riding DSTN Liquid Crystal Display which reverses yellow numbers out of black for optimal viewing. An innovative keypad makes entering a squawk code a snap. And a dedicated VFR button allows for quick and easy 1200/VFR squawking. The GTX 327 also offers two important timing functions.

The first screen shows the current time and count up timer. The second indicates flight time and a count down timer. Together they represent a whole new standard in transponder utility.

- GTX 327 with Harness..... P/N 11-00329..... \$1895.00
- GTX 327 Transponder only..... P/N 11-00342..... \$1695.00

The GTX 327 can be sold over the counter to certified & experimental aircraft owner's with a pre-wired harness.

GARMIN GTX 320A MODE C TRANSPONDER



The GTX 320A is a full featured, compact, panel mounted Class 1A transponder. GTX 320A's solid state transmitter provides 200 watts

nominal power output eliminating the need for a cavity tube that can degrade with time, fail, or require expensive replacement. 100% solid state also means no warm up time, reduced power consumption and heat for longer service life. Extensive utilization of surface mount technology provides shallow depth and light weight which simplifies installation in the tightest spaces. 14 or 28 volt operation is available without the requirement for external voltage converters or dropping resistors. The GTX 320A fits into existing installations of selected Narco, King transponders using optional adapters for simple, cost-effective upgrading. A single board design allows for ease of serviceability and simple, standard, four-knob tuning.

- GTX 320A Transponder..... P/N 11-18965.....
- GTX 320A With Harness..... P/N 11-18965-K.....
- Optional Narco Adapter Kit..... P/N 11-07720.....
- Optional King Adapter Kit..... P/N 11-07721.....

The GTX 320A can be sold over the counter to certified & experimental aircraft owner's with a pre-wired harness.

NOTE: The GTX 330, GTX 327 & GTX 320A DO NOT include an antenna. Experimental Aircraft can order TED Transponder antenna P/N 11-17995 for .

GARMIN NOH GNC 300XL TSO GPS/COM



The GNC 300XL combines go-anywhere GPS flight navigation with full 760-channel VHF communications. On the Comm side, a full powered 760 channel transceiver with 5W minimum transmit power delivers crisp, clear cockpit audio and voice transmissions. Comm features auto-squelch control, standard headset output with sidetone and audio leveling, stuck mike transmission timeout, emergency channel select and autotune freq. selection from database card. The Nav side features Garmins easy-to-use PhaseTrac 12 parallel channel GPS receiver. Waypoint library holds up to 1,000 user-defined waypoints and stores up to 20 reversible flight plans with up to 31 waypoints each. Jeppesen NavData database includes SUAs, MSAs, airports, VORs, NDBs, intersections, plus airport, FSS and center frequencies, nearest search of 9 airports, VORs, NDBs, intersections and user waypoints and 2 nearest FSS and ARTCC frequencies and all published GPS and GPS overlay approaches, SIDs and STARs. Weight: Unit: 41 oz, Rack: 11 oz. Size: 6.25" x 2" x 5.65". 14 volt; 28-volt with optional converter. TSO'd to C129a, Class A-1.

NOH GNC 300XL Americas North..... P/N 11-02934

*Please call for other database models.

ANNUNCIATORS FOR GPS 155XL/GNC 300 (XL)

| Model No. | Description | Part No. | Price |
|-----------|---------------------------------------|----------|-------|
| MD41-444 | Horizontal, 14V (with internal relay) | 11-00967 | . |
| MD41-448 | Horizontal, 28V (with internal relay) | 11-00968 | . |
| MD41-454 | Vertical, 14V (with internal relay) | 11-00969 | . |
| MD41-458 | Vertical, 28V (with internal relay) | 11-00970 | . |

GARMIN GNC 250XL GPS/COM



The GNC 250XL GPS/Comm features a PhaseTrac 12 GPS receiver tracking 12 satellites simultaneously. Features include emergency search, 1000 user defined waypoints, 20 reversible routes, checklists, messages, true airspeed, winds aloft, 14 moving map scales, and complete Jeppesen database showing US Class B and C airspace, all SUA's, MOAs, prohibited and restricted areas, and much more. Size: 6.25" x 5.8" x 2" Wt: 41oz. Furnished complete with GPS antenna, Rack, & connectors. Includes 760-channel 5W transceiver. Call For Special Price!

GNC 250XL Americas North.....P/N 11-18901

GNC 250XL (Int'l).....P/N 11-18902

Accessories for the GNC 250XL & 300XL

Remote NiCad Batt/ChgrP/N 11-18905

115 / 230 VAC adapterP/N 11-18906

Personal Computer Kit.....P/N 11-18907

User Data card.....P/N 11-18908

28 to 14 VDC ConverterP/N 11-18909

GARMIN NOH GPS 155XL TSO GPS



Standard configuration includes: GPS 155XL receiver TSO'd to C129a, Class A-1 with Jeppesen® datacard, aviation installation kit including low profile TSO antenna, pilot's guide & Quick Reference Guide. Features include: • Panel mount with 12 parallel channel GPS receiver • 80 x 240 super bright transfective DSTN display with moving map scaleable from 0.5 to 300 NM • Accuracy to 15 meters • Waypoint library holds up to 1,000 user-defined waypoints • Jeppesen® America's Nav Data database • Nearest search of 9 airports • 11 to 33 volts • Internal battery protects stored data up to 5 years • Size: 6.25" x 2" x 5.65" • Weight: Unit: 33 oz. Rack: 11 oz.

GPS 155XL NOH Americas..... P/N 11-05939



GARMIN GNC 150XL GPS

The Garmin GPS 150XL features a Phase Trac 12 channel GPS receiver tracking 12 satellites simultaneously. Features include emergency search, 1000 user defined waypoints, 20 reversible routes, checklists, messages, true airspeed, winds aloft, 14 moving map scales, and a complete Jeppesen database showing US Class B and C airspace, all SUA's, MOAs, prohibited and restricted areas, and much more. Size: 6.25" x 5.8" x 2". Wt: 41 oz. Furnished complete with GPS antenna, Rack, and connectors. Call For Special Price!

This unit is unrestricted for mail order.

GPS-150XL Americas NorthP/N 11-18950

GPS-150XL InternationalP/N 11-18951

Accessories for the GPS 155XL and 150XL

Remote NiCad Batt/Chgr.....P/N 11-18905

115 / 230 VAC adapter.....P/N 11-18906

Personal Computer Kit.....P/N 11-18907

User Data cardP/N 11-18908

GARMIN GMA 240 AUDIO PANEL



Non-TSO'd so it's priced really low. Yet, it includes an intercom and will support dual COMM, dual NAV, dual AUX receivers, and dual music audio inputs – plus up to three unswitched inputs for telephone ringers, altitude alerts, or other warning tones.

Pilots can connect up to two dedicated music sources to the rear connector (e.g. XM music and CD player) and over-ride one of those sources at any time by plugging-in a device (e.g. MP3 player) into the 2.5 mm front jack. The music source's volume can be increased or decreased with the GMA 240 by pulling out the copilot volume knob.

The 2.5 mm front jack also makes it easy for pilots to make and receive cell phone calls. It has a full-duplex telephone interface with intercom isolation capability.

Specifications: * Weight: 15.5 oz (440 g) * Dimensions: 1.3" x 6.29" x 7.12" * Power: Input voltage range: 11-33 Vdc, 4.3 W normal * Temperature range: -20C to +55C * Altitude: 55,000 MSL unpressurized * Transceiver inputs: 3 (including TEL) * Receiver inputs: 4 * Alert inputs: 3 * Input impedance: 500 Ohms * Input isolation: 60 dB min * Bandwidth: 100 Hz to 6.5 kHz * Music inputs (stereo): 2 * Music gain: -20 dB @ min. volume, +26 dB @ max. volumeP/N 11-06619

GARMIN GMA 340 AUDIO PANEL



The Garmin GMA 340 audio panel is compact and lightweight, making it an excellent choice for panels with limited space. Audio panel features include 3 transceiver inputs, 5 receiver inputs, and 2 unswitched inputs. The intercom provides 6 positions, 3 volume controls, 2 VOX level controls, 6 VOX circuits, and 2 stereo music inputs. This unit features 3 stereo headphone outputs and 2 speaker outputs, and the marker beacon receiver features input impedance of 50 ohms. Size: 6.8" d x 6.29" w x 1.3" h. Power req.: 11-33 VDC
GMA 340 Audio Panel.....P/N 11-18960

GMA 340 with HarnessP/N 11-07172

GMA 340 Harness OnlyP/N 11-07170

The Garmin GMA 340 an GMA 240 can only be sold over the counter with the harness.

GARMIN GMA 347 AUDIO PANEL



The GMA 347 audio panel builds upon the successful attributes of the GMA 340 while adding benefits such as automatic squelch, digital clearance recorder, and a full-duplex telephone interface. Automatic squelch option makes the entire audio experience quieter and clearer. Can also retain the manual squelch adjustment feature. Three more unmuted, unswitched inputs with individual volume control. Automatic digital clearance recorder. Continuously captures the last two and one half minutes of audio switched through the panel. Can replay the necessary information by simply pressing the "play" button. It has a full-duplex telephone interface with intercom isolation and disable capability. This feature allows private telephone calls by the pilot or copilot, or multi-party calls with crew and/or passengers. Integration of the G1000's "configuration module". If the audio panel is ever removed, all of the pilot's preferred settings are automatically loaded into the unit.

Garmin GMA 347 Audio PanelP/N 11-04314

Garmin GMA 347 w/ harness 4PLCP/N 11-07743

Garmin GMA 347 Connector Kit.....P/N 11-05656

Garmin 347 Install TrayP/N 11-05657

AV



SILVER CROWN KX 165 NAV/COM

Solid state, 760 frequency COMM transceiver, 200-channel NAV receiver, 40 channel glidescope receiver and built-in VOR converter, 10W, 14V. Simultaneous, digital, gas-discharge display of active and standby NAV & COMM frequencies or select digital display of radial from the VOR or VORTAC in lieu of standby NAV frequency. Push button frequency flip-flop. Meets DO-156 frequency selectivity requirements.

14V.....P/N 11-03399.....
28V.....P/N 11-00199.....

SILVER CROWN KX-165A NAV/COM SYSTEM



Large, self-dimming, microprocessor-controlled gas discharge readouts and solid-state electronic tuning provide fast, accurate selection of all 200 Nav & 760 Comm frequencies. On the COMM side, the KX165 system gives you 10W minimum transmitter power for maximum range and clarity. And on the NAV side, the KX165's useful 'Radial' feature offers you an instant readout of the radial you're on (from the 'active' VORTAC station), digitally displayed in the 'standby' NAV frequency window. The KX-165A is TSO'd and offers 32 channels of com frequency memory, an additional CDI mode. The GPS "Quick Tune" feature allows the pilot to select and remotely tune the standby com & nav freq. from the KLN94 GPS 28V ..P/N 11-00644.....

SILVER CROWN KX-155 / 155A NAV/COM



The KX155A gives you access to all 200 NAV and 760 COMM frequencies, along with its optional 40-channel glidescope. In addition to its standard use – offering both active and standby navigation and communications frequencies – the KX 155A incorporates a number of new control features. Program up to 32 COMM channels. Pre-selected frequencies are stored in a non-volatile memory circuit, eliminating the need for backup battery power. Other new features include a bearing-to-station mode and a radial-from-station mode. An internal Course Deviation Indicator (CDI) has been included for such times as when the external CDI is being driven by your GPS receiver, and the system now includes a handy elapsed-time and approach timer. On the COMM side, the KX 155A system gives you 10W minimum transmitter power.

KX-155 w/o Glide Slope (14V).....P/N 11-00868.....
KX-155 w/o Glide Slope (28V).....P/N 11-00869.....
KX-155 w/Glide Slope (14V).....P/N 11-00871.....
KX-155 w/Glide Slope (28V).....P/N 11-00872.....
KX-155 NAV w/KI208 Indicator (14V).....P/N 11-03403.....
KX-155 w/GS & KI209 Indicator (14V).....P/N 11-03404.....
KX-155 w/GS & KI209 Indicator (28V).....P/N 11-03406.....
KX-155 NAV w/KI208 Indicator (28V).....P/N 11-03405.....
Approach KX-155 NAV Cable.....P/N 11-05668.....
KING KX155A 28V w/ Install No GS.....P/N 11-04404.....
KING KX155A 28V w/ GS & Install.....P/N 11-04405.....
KING KX155A/KI209A w/ GS.....P/N 11-04406.....

CROWN KX-125 DIGITAL NAV/COM



The KX-125 is ideal as a replacement radio, a primary system for homebuilts or a very affordable back-up. Despite its low price, it comes with a complete list of features. For example, its COMM

section provides 760 frequencies, 'flip-flop' frequency selection, a built-in audio amplifier with sidetone and audio leveling, direct tuning, stuck-microphone alert, and even remote transfer of both COMM and NAV frequencies. Its separate NAV section offers 200 frequencies, including localizer.

14V.....P/N 11-03402.....
With Harness....P/N 11-05026.....



CROWN KI SERIES INDICATORS

The KI203, KI208, KI204, & KI209 indicators feature an internal VOR/ LOC converter and are compatible with the KX155 transceiver. The KI203 & KI204 have rectilinear meter movement, while the KI208 & KI209 feature pivot needle action. The KI206 has rectilinear meter movement and works with the KX165 & KNS80.

The KI209 includes GPS interface capability. Size: 3.125" x 8"D; Weight: 1.5lbs.

KI203 NAV Indicator.....P/N 11-03407.....
KI204GS Indicator.....P/N 11-03408.....
KI209A GS Indicator.....P/N 11-03409.....
KI208 NAV Indicator.....P/N 11-00876.....
KI209 GS Indicator.....P/N 11-00878.....
KI206 GS Indicator.....P/N 11-04209.....
Approach KI204 Indicator Cable P/N 11-05669.....

CROWN KY 96A & KY 97A COM



With the anticipation of additional frequency allocations, Bendix/King has designed the KY 96A and KY 97A to operate

on 760 frequencies from 118.00 MHz to 136.975 MHz. You can switch between active and standby frequencies. Simply tune the desired frequency into the standby window ("STBY") while monitoring the "USE" channel-when the time is right, simply push the frequency transfer button to transfer the standby frequency into the active window. A remote switch may be installed as an additional means of providing the "flip-flop" function. Up to nine channels can be easily programmed by the pilot into the memory of the KY 96A or KY 97A. The KY 96A & KY 97A remember displayed frequencies and stored frequencies without batteries or external hookup during power shutdown or in the event of a power interruption and have an easy-to-read, illuminated LCD display.

KY96A-61 (28V).....P/N 11-03411.....
KY96A-61 (28V) With Harness.....P/N 11-03849.....
KY97A-61 (14V).....P/N 11-03410.....
KY97A-61 (14V) With Harness.....P/N 11-05028.....

Accessories

King Install Manual KY96A/97A.....P/N 11-18005.....
KY96A/KY97A Install Manual CD.....P/N 11-02374.....
Harness **ONLY** for **KY-96A**.....P/N 11-04021.....
Approach KY96A/97A COM Cable.....P/N 11-05666.....

CROWN SERIES KT-76A MODE C TRANSPONDER



The KT76A is a panelmount, class 1-A transponder and provides maximum performance at any altitude up to 35,000 ft. A compact unit with Large Scale Integrated (LSI) circuitry, reducing both weight and power requirements. All Mode A & Mode C transponders perform the same functions: replying to radar interrogations, providing Air Traffic Control (ATC) with positive identification, and showing your ground speed on the Controller's radar monitor. If you have an encoding altimeter or blind encoder, the transponder will transmit your altitude as well.

KT76A 06 14V (Transponder).....P/N 11-02438.....
KT76A 06 14V With Harness.....P/N 11-02436.....
28V Dropping Resistor.....P/N 11-00913.....

KING SILVER CROWN KT-76C MODE C TRANSPONDER



The KT-76C is the finest panel-mounted Mode A/C transponder to allow for sequential push-button squawk code entry. To ease pilot workload, the push of a single button switches to a user-preset VFR code, such as 1200. Best of all, its bright microprocessor-driven gas plasma display is easily read in all light levels. The new unit features a bright, gas plasma display that shows the selected transponder code and, in a new feature, the encoder altitude output. The KT 76C will fit directly into the existing location of a KT 76A. However, in 28V installations the existing dropping resistor must be bypassed. Unit operates from 11-33VDC. Available with or without antenna.

Without Antenna.....P/N 11-03413.....
Without Antenna With Harness.....P/N 11-05034.....
With KA 60 Antenna Without Harness.....P/N 11-03414.....
With KA 60 Antenna With Harness.....P/N 11-05033.....

SILVER CROWN KY 196A & KY 197A COM



This unit measures a trim 1.3" x 6.3" and weighs just 2.8 lbs. The 28V KY196A delivers 16W minimum

transmit output power and the 14V KY197A delivers 10W minimum transmit output power. Both units incorporate solid-state construction, with a digital frequency synthesizer generating all COMM frequencies. Despite their wide range of capabilities, the KY 196A and KY 197A were designed to be easy to read and logical to operate. For example, the active frequency is clearly distinguishable from the standby, with both displayed in separate, dedicated windows. Total frequency storage capacity is eleven, including those in "USE" and "STBY". The 118.00MHz to 136.975MHz range of the KY-196A & KY-197A provide 760 COMM frequencies. An audio leveling feature automatically amplifies weak audio signals and mutes strong signals.

KY 197A (14V).....P/N 11-03848.....
KY 196A (28V) Silver Series.....P/N 11-03415.....
KY 196B 8.33 KHZ Com Transceiver.....P/N 11-03417.....

HONEYWELL AVIONICS

CROWN KLX 135 GPS/COM



With unmatched GPS accuracy, 'Direct-To' operation, built-in CDI output and a host of other pilot-friendly features, the King KLX-135 provides the navigation capability you'd expect from the leader in panel-mounted avionics. Key features include storage capacity for up to 250 user-defined waypoints and as many as ten flight plans of up to 20 waypoints each; an OBS mode for flying specific radials/bearings; and supplemental calculations for estimated distance, bearing, time & fuel. KLX-135A includes a moving map display of flight plan waypoints, nav aids, and special use airspace, in addition to an enhanced high contrast LCD display for easy readability.

| Description | Part No. | Price |
|---|-----------------|-------|
| KING KLX 135A Americas 14V | 11-03391 | . |
| KING KLX 135A Americas 14V With Harness | 11-02018 | . |
| KING KLX 135A Americas 14V (Unit Only) *Antenna NOT included | 11-02582 | . |
| KING KLX-35A ATLANTIC 14V | 11-03389 | . |
| KING KLX 135A Atlantic 14V W/Harness | 11-02724 | . |
| KING KLX 135A PACIFIC 14V | 11-03390 | . |
| Accessories | Part No. | Price |
| KLX 135A PILOTS GUIDE | 006-08789- 0000 | . |
| KING INSTALL MANUAL KLX 135A | 006-10500- 0003 | . |



CROWN KMD 150 COLOR MULTI-FUNCTION DISPLAY GPS

With its big, 5" diagonal screen, the KMD 150 offers broad coverage to make flying easier. Combining aeronautical and cartographic mapping with GPS navigation information, it also provides a range of additional display capabilities, from airports, NDBs, intersections, VORs, special-use airspace, rivers, roads, lakes, cities, railroad tracks and towers, to WX-500 Stormscope® data. Built-in GPS receiver for total situational awareness. Packed with powerful features, the KMD 150 includes a customizable aeronautical database, along with a comprehensive "roads and rivers" cartographic package. A wide viewing angle and pilot-friendly operation system make it easy to use.

| | |
|-----------------------|--------------|
| America w/ GPS..... | P/N 11-00046 |
| Americas w/o GPS..... | P/N 11-00044 |
| Pacific w/ GPS..... | P/N 11-03395 |
| Pacific w/o GPS..... | P/N 11-03396 |
| Atlantic w/ GPS..... | P/N 11-03397 |
| Atlantic w/o GPS..... | P/N 11-03398 |



SILVER CROWN KMD 250

The KMD 250 is intended for piston singles. The MFD offers most of the advantages of the KMD550 and 850 displays but without the radar and terrain awareness and warning system (TAWS) interfaces, systems the vast majority of singles don't need. KMD 250 is slightly smaller than the 550 or the 850. With a 3.8" diagonal display, compared with the 5" screen of the KMD 550, the size difference is slight. The 250 measures 3" high, compared to 4" for the 550. The software and remaining capabilities on the KMD 250 are nearly identical to those on the KMD 550, so pilots familiar with one of Honeywell's other MFDs will have an easy time transitioning to the new hardware. TSO Certified.

| | |
|----------------------------------|--------------|
| America with GPS & Harness.... | P/N 11-05165 |
| America with Harness..... | P/N 11-05167 |
| Pacific with Harness..... | P/N 11-05168 |
| Atlantic with GPS & Harness..... | P/N 11-05169 |
| Atlantic with Harness..... | P/N 11-05170 |

CROWN KLN 35A GPS



The KLN 35A is a standalone GPS identical to the KLX 135A except without the COMM transceiver. The KLN 35A provides accurate satellite navigation capability with moving map displays for increased situational awareness. It features Jeppesen NavData for data base updates via 3.5" diskette. The moving map display shows flight plan waypoints, nav aids, and special use airspace, and the KLN35A has enhanced, high contrast LCD display for optimum readability. The KLN 35A is an outstanding GPS value with the Bendix/King reputation for quality avionics products.

| | |
|-----------------------------------|--------------|
| KLN 35A (Americas)..... | P/N 11-03394 |
| KLN 35A (Atlantic)..... | P/N 11-03392 |
| KLN 35A (Pacific)..... | P/N 11-03393 |
| KLN 35A America with harness..... | P/N 11-02719 |
| KLN 35A America (Unit Only)..... | P/N 11-02730 |

SILVER CROWN KMA 24 AUDIO PANEL



Bendix/King's easy-to-use KMA 24 & KMA 24H systems are self-contained, all solid-state and stand only 1.3" high in your Silver Crown stack. The "slant top" package tailors it for the top slot in your instrument panel. KMA 24 controls as many as 3 transceivers and 6 receivers, including the internal marker beacon receiver and its automatically dimmed 3-light presentation. KMA 24H controls up to 5 transceivers and 5 receivers, or 4 transceivers and 6 receivers. KMA 24H includes the internal marker beacon receiver & VOX intercom, which provides unprecedented flexibility.

| | |
|---------------------------|--------------|
| KMA 24 with HF..... | P/N 11-03841 |
| KMA 24 with HF Auto..... | P/N 11-03381 |
| KMA 24 with Tel Auto..... | P/N 11-03382 |

SILVER CROWN KMA28 AUDIO PANEL



The KMA 28 provides aircraft owners with a state of the art isolation amplifier and audio selector incorporating an automatic voice-activated-transmit (VOX) intercom system. Features include: 6-place stereo intercom; IntelliVox® Automatic Squelch Adjustment; Dual High-fidelity Stereo Inputs; 2 Split Modes (Com1/2 & 2/1); 3-Light Marker Beacon Built-in; SoftMute Audio Playthrough of Music; Stereo Entertainment Inputs.

| | |
|--|--------------|
| KMA 28 - Audio Panel only..... | P/N 11-00570 |
| KMA 28 - Install Kit Only..... | P/N 11-00571 |
| KMA 28 System (audio panel/install kit)..... | P/N 11-00569 |

CROWN KA 134 AUDIO PANEL



Features: • Solid state unit containing functions of an isolation transformer and an audio control panel • Models available that operate on 14 or 28V without power supply section • International model available with third COMM switching function for HF transceiver operation (labeled HF instead of EXT, no electrical changes) • Push-button • Flat pack configuration measurers only 1" in height • can be integrated into 500Ω output audio system • Can control as many as 3 transceivers and 5 receivers • Can be used as passenger address, ramp halter, or intercom • Can be coupled w/KR-22 Marker Beacon Receiver/Lights to provide complete audio panel/marker package • 14 or 28V operation • TSO'd

| | |
|------------------------------------|--------------|
| Install Kit KA 134 W/ Harness..... | P/N 11-00087 |
|------------------------------------|--------------|

CROWN KR 22 AUDIO PANEL



The Bendix/King KR 22 Marker Beacon Receiver is a fully independent panel-mounted unit with its own audio output and self-test feature. The unit is all solid-state, and its compact size makes

it an easy fit in virtually any panel. A crystal-controlled superheterodyne receiver and 3-light presentation ensures that the KR 22 will give precise visual and aural indications of marker beacon passage. Excellent receiver selectivity eliminates interference. Headphone audio is provided, or if speaker output is desired, the KR 22 may be interfaced with the KA 134 or other audio control panel.

| |
|-------------------|
| P/N 11-03843..... |
|-------------------|

AV

HONEYWELL KITS - NARCO

KING INSTALLATION KITS

| Model | Part No. | Description | Price | Model | Part No. | Description | Price |
|-----------|----------|-----------------------------|-------|------------|----------|------------------------|-------|
| KRA 10A | 11-00895 | Installation Kit | . | KLN 90B | 11-00944 | Installation Kit | . |
| | 11-00896 | Mounting Tray | . | | 11-00945 | Mounting Tray | . |
| KMA 20 | 11-00897 | Installation Kit | . | KY 96A | 11-00914 | Installation Kit | . |
| KMA 24 | 11-00898 | Installation Kit | . | | 11-00915 | Mounting Tray | . |
| | 11-00909 | Mounting Tray | . | KG 102A | 11-00947 | Installation Kit | . |
| KMA 24H | 11-00899 | Installation Kit | . | KMT 112 | 11-00946 | Installation Kit | . |
| -52 | 11-00909 | Mounting Tray | . | KX 125 | 11-00916 | Installation Kit | . |
| KMA 24H | 11-00902 | Installation Kit | . | | 11-00948 | Mounting Tray | . |
| 70/71 | 11-00903 | Mounting Tray | . | KA 134 | 11-00986 | Installation Kit | . |
| KA 51B | 11-00904 | Installation Kit | . | | 11-00949 | Mounting Tray | . |
| KN 53 | 11-00905 | Installation Kit | . | KLX 135 | 11-00918 | Installation Kit | . |
| | 11-00906 | Mounting Tray | . | | 11-00950 | Mounting Tray | . |
| KN 62A/64 | 11-00908 | Installation Kit no Antenna | . | KX 155/ | 11-00951 | Installation Kit | . |
| | 11-00925 | Mounting Tray | . | KX 165 | 11-00952 | Mounting Tray | . |
| KN 63 | 11-00928 | Installation Kit no Antenna | . | KX 155/GS | 11-00919 | Installation Kit | . |
| | 11-00929 | Mounting Tray | . | KX 170/ | 11-00954 | Installation Kit | . |
| KN 72 | 11-00930 | Installation Kit | . | 170B/175B | 11-00955 | Mounting Tray | . |
| | 11-00912 | Mounting Tray | . | KY 196/ | 11-00956 | Installation Kit | . |
| KT 76A | 11-00913 | 28 Volt Kit | . | KY 197 | 11-00957 | Mounting Tray | . |
| | 11-00936 | Installation Kit no Antenna | . | KY 196A/ | 11-00914 | Installation Kit | . |
| KNS 80 | 11-00937 | Mounting Tray | . | KY 197A | 11-00915 | Mounting Tray | . |
| | 11-00938 | Installation Kit | . | KI 203/204 | 11-00958 | Installation Kit Crimp | . |
| KNS 81 | 11-00939 | Mounting Tray | . | KI 208/209 | 11-00922 | Installation Kit | . |
| | 11-00940 | Installation Kit | . | KI 525A | 11-00959 | Installation Kit | . |
| KR 86 | 11-00941 | Mounting Tray | . | KDI 572 | 11-00961 | Installation Kit | . |
| | 11-00942 | Installation Kit 48' cable | . | | 11-00962 | Mounting Plate | . |
| KR 87 | 11-00943 | Mounting Tray | . | | | | |



KING KI208A-10 VOR/LOC INDICATOR

The KI 208A VOR/LOC Indicator with VOR/LOC Converter and GPS Switching Relays has internal lighting. Internal relays allows from switching between VHF Nav and GPS. It is used with the KX 155 or KX 155A and KLN 89, KLN 89V, or KLN 94. Specifications: * Weight: 1.00 lbs. (0.45 kg) * Width: 3.25 in. (8.26 cm) * Power Required: 14/28 VDC @ 60 mA max. * Height: 3.25 in. (8.26 cm) * Length: 8.00 in. (20.32 cm) * Lighting Power: 14/28 VDC P/N 11-07599.....

NARCO MK 12D+ NAV/COM



The MK 12D features a powerful 760 channel communications transceiver which delivers crystal-clear audio with automatic leveling on both transmitter and receiver. It also contains a 200 channel (VOR) NAV which is compatible with HSI's, RNAV systems VOR RMI's and the companion ID 824 or ID 825 indicators. The MK 12D is 100% solid-state microprocessor controlled and fully TSO'd. It offers simultaneous display of active and standby frequencies and "flip-flop" transfer of both. All readouts are digital and the unit is compact, low-profile and self-contained. Size: 6-1/4"W x 2-1/2"H x 11"D. Wt. 5 lbs. Specify 14V or 28V. We have taken the most popular name in NAV/COM's, the MK-12D, and added features that are most often requested by our customers. These features include: Ten Channel COMM Frequency Memory Storage, Non-Volatile Frequency Memory (No keep-Alive wire req.), Digital Radial "FROM" Readout on NAV, Available in Either 28 or 14 VDC Models, COMM Freq. Entry into Active or Standby, VOR Centering Adjustable without Removing Faceplate

| Description | Part No. | Price |
|--------------------------|----------|-------|
| NARCO MK12D+ NAV/COM 14V | 11-07183 | . |
| NARCO MK12D+ NAV/COM 28V | 11-07184 | . |
| NARCO PAK II+ 14V | 11-12614 | . |
| NARCO PAK II+ 28V | 11-12622 | . |

AV



NARCO ID 825 NAVIGATION INDICATORS

These TSO'd navigation indicators are companion units for the Narco MK 12D NAV/COM transceivers. The ID824 indicator features rectilinear movement and a rotatable omni bearing scale and is used with the MK 12D NAV/COM without glideslope. The ID 825 VOR/LOC/GS indicator is similar to the ID 824 unit but includes glideslope capability and is used with the MK 12D NAV/COM with glideslope. Wt. 1 lb. Specify 14V or 28V-ID-825.....P/N 11-14150

NARCO RADIO PACKAGE II



Includes MK 12D+ NAV/COM transceiver with glideslope and ID 825 VOR/LOC/GS indicator with glideslope. Specify 14V or 28V. 14V.....P/N 11-12614 28V.....P/N 11-12622

MK 12D/R NAV/COM REPLACEMENT



The MARK 12D/R was developed in order to provide pilots with a very cost effective way to update their avionics, to state-of-the art capability and performance. And meet new FCC/FAA requirements without incurring the high cost of a complete installation re-do! The MARK 12D/R Directly Replaces the MARK 12, MARK 12A & MARK 12B, utilizing the existing indicator. Features: • Direct Replace Capability • 760, COM Channels and 200 NAV Channels • TSO'd Microprocessor Design • Simultaneous display of active and standby frequencies • Glideslope and DME Channeling • Flip-Flop Display Transfer • Self-Contained 10 watt audio amplifier • Automatic audio leveling • Unique "Keep-Alive" option available 14 Volt P/N MK12DR-14.....

MK 12D NAV/COM CESSNA REPLACEMENT



Directly replaces the NAV/COM 300 series (RT 308 through RT 328C) radios. 100% solid state and TSO's, this unit provides simultaneous display of active and standby frequencies, flip-flop capability, automatic dimming, and digital readouts. 760 channel COM transceiver and 200 channel (VOR) NAV receiver. Easy to install and service and self-contained. P/N 11-16410.....

NARCO AVIONICS - TKM AVIONICS



NARCO NAV 122D/GPS

Narco has re-introduced the NAV 122, in the form of the totally new, surface mount designed NAV122D & NAV122D/GPS. The NAV 122D, is a totally self-contained 200-channel, VOR NAV receiver, 40-channel glideslope receiver, VOR, localizer/glideslope indicator and All packaged to fit into a 3.0" instrument hole. The NAV122D, is completely redesigned utilizing "Surface Mount Technology" and will directly replace, pin for pin (hole for hole), the original NAV122 Series back through the early NAV12. (NAV12 replacement will require an interconnect cable). The NAV 122D/GPS is the same as the NAV 122D except it will include a resolver, thus having the additional capability of being utilized as the required "Left/Right Indicator", in IFR approved GPS or multi-sensor systems installations. Power: 14VDC.

NAV 122D/GPS w/ Resolve P/N 11-14095

CALL FOR SPECIAL PRICE!

NARCO AT 165 MODE C TRANSPONDERS



The AT165/R is a transponder offered to replace the NARCO AT50, AT50A, AT150 & AT155 transponders in an existing installation utilizing the already installed tray, cables and antenna. The Narco AT165/R transponder has a high power (250 watt) transmitter featuring 4096-code capability and reliable TOTALLY solid state design. An innovative backup display, one touch VFR, easy-grip data entry knob, and altitude hold alert are just a few of the special features found in the AT165. It is compatible with leading encoding altimeters and altitude encoders including the Narco AR850 altitude encoder. This unit meets the FAA's tough C74c class 1A TSO for ATC transponders (MODE C). AT165/R Series Transponders have dual displays (active and standby) AT165R VS (value series) transponders have single displays.

Narco AT165 Series Transponders (Dual Display)

| Model | Narco PN | Description | ACS PN | Price |
|---|------------|---|----------|-------|
| AT165 | 03609-0300 | Digital Transponder | 11-02761 | . |
| AT165R | 03609-0301 | Direct Narco Replacement | 11-03594 | . |
| AT165K | 03609-0303 | Direct King Replacement (KT76 & KT78) | 11-02890 | . |
| AT165KA | 03609-0302 | Direct King Replacement (KT76A & KT78A) | 11-03001 | . |
| AT165C | 03609-0304 | Direct Cessna Replacement (RT359A & RT459A) | 11-04329 | . |
| Narco AT165 Series Transponders - Value Series (Single Display) | | | | |
| Model | Narco PN | Description | ACS PN | Price |
| AT165/VS | 03609-0305 | Digital Transponder | 11-03595 | . |
| AT165R/VS | 03609-0306 | Direct Narco Replacement | 11-03596 | . |
| AT165KA/VS | 03609-0307 | Direct King Replacement (KT76A & KT78A) | 11-04743 | . |
| AT165C/VS | 03609-0309 | Direct Cessna Replacement (RT359A & RT459A) | 11-04398 | . |
| AT165/K/VS | 03609-0308 | Direct King Replacement (KT76 & K58) | 11-03597 | . |

Narco Antenna AT165..... P/N 11-04328.....

QUICK SHOT AVIONICS REFERENCE MANUAL



Quick Shot is a compact, rugged binder type manual which shows detailed wire pin-outs for a wide variety of general aviation avionics equipment. Each page is removable and very durable. The wiring diagrams in Quick Shot Volume 1 include Apollo/UPS, Bendix, Garmin, Icom, Sandel Mid-Continent, Sigtronics, United, Telex, David Clark, PS Engineering, Narco, Val, and many more.

P/N 11-01623

PRO HUB



The Fast Stack Pro Hub is a revolutionary product that allows you to easily install and connect avionics into an existing aircraft or one you are building. The Fast Stack Pro Hub was designed to accept and connect most NAV/GPS/COM, modern audio panels, intercoms, VOR indicators, moving map displays, HSI's, RMI's, ADF's, annunciators, mode control and almost any "send and receive" RS-232 formatted device. Approach's custom cables are made to connect with the Fast Stack Pro Hub and associated avionics and come with connectors installed.

Features: •Modular Custom Cabling •Milspec Tefzel Wiring •Simple to Install and Simplifies Upgrades •Virtually No Hand wiring meaning less chance of error •Lower Upgrade Costs •Single Point Grounding

P/N 11-04731.....

MICHEL TKM SLIDE-IN REPLACEMENT RADIOS



MX 11R NAV/COM

The MX 11 Comm is designed as a slide in replacement for the Narco Com 11, Com 11B, Com 111, Com 111B, and Com 120. The unit will replace the com 10 and Com 110 when the Nav 10 and Nav 110 are not used in the system. The MX 11 is warranted for 3 years. The MX 11 is the same unit as the earlier MX 11 except it does not come with the tray. You must order the tray separately per the FAA.

P/N 11-18815



MX 12 NAV/COM

Direct replacement for Narco MK12A Nav/Com.

P/N 11-18846

GLIDESLOPE ADAPTER CABLE FOR MX 12

Direct replacement for Narco MK 12 P/N 11-18847

MX 170C NAV/COM



An ideal Nav/Com unit to replace King KX 170 & 175 series Nav/Coms. 14VDC. Features active & standby display w/flip-flop capability, plus storage capability in Nav and Com.

P/N 11-18830

MX 300 NAV/COM



The MX 300 Nav/Comm is designed to replace the RT 328T, RT 308C, RT 328T, RT 328A, RT 528A, RT 328C, RT 528E, RT 328D, and RT 508A. The MX 300 is available in the black face plate shown above or in a beige face plate to match many Cessna panels. The MX 300 operates on 13.75 vdc with 7 Adc maximum current in transmit.

With Black Face Cover..... P/N 11-18835

With Tan Face Cover P/N 11-04825

MX 385 NAV/COM



MX 385 is a direct replacement for RT385 & RT485 series Nav/Com units. Features active & standby displays w/flip-flop capability plus storage in Nav & Com.; 28VDC.

P/N 11-18845

Note: All Michel radios are furnished standard with black face. Tan face for Cessna panels are available at same prices on special order.

NC 2210A NAV/COM RAMP TESTER

The NC 2210 Tester is optimized for ramp testing of navigation and communication equipment. The unit provides test signals for marker beacon, communication, localizer, glide slope, and VOR. Also included, is a wide band comm receiver to permit evaluation of comm transmitter AM fidelity. The TKM NC 2210 is a NAV-COMM Ramp Tester. The unit has improvements over the 2200, which it replaces. The improvements include the following: Higher •RF power • Precise localizer and glide slope deflection • Calibrated VOR bearings at 10 degree increments • Crystal controlled modulation frequencies • Longer battery life • Internal antenna with adjustable length • Smaller size. Specifications: •Size: 3.8 x 7.4 x 2.3" •Weight: 1.3 lbs. •Power: Internal battery with over 2 hours running time (110VAC charger included) •Warranty: 2-year from date of purchase. P/N 11-01813

MC 60 NAV CONVERTER



The TKM MC 60 is designed to provide a display for a variety of Nav signals including ILS, LOC, Back course, LOC, GS, GPS, and MB. The VOR display includes a Left and Right bar graph with an OBS and a tracking mode with reciprocal selection. When a GPS is selected by grounding the enableline, GPS is displayed in the OBS window and VOR and LOC functions are disabled. When the GPS is not enabled the VOR/LOC selection is made by the ILS enable line from the associated Nav receiver. Back Course selection is made by grounding the back course enable line. The digital display includes OBS, bearing, LOC, BAC, and GPS. The bar graph display contains 10 dots for Left, Right, Up, and Down. The center dot is used to indicate valid signals for LOC, VOR, or GPS. A Glide Slope light indicates a valid Glide Slope signal. P/N 11-04594.....

TKM MG200 GLIDESLOPE RECEIVER



At last, it is back! The MG-200 Glide Slope Receiver, a marvel of avionics engineering from TKM. Measuring only 3 inches wide by 6 inches long by 1 inch high, this 40 channel, totally solid state receiver is capable of handling your Nav/Com needs.

Using standard 25 DB connectors, it is easy to wire and install. Just wire the connector, plug it in, mount the receiver with four fasteners and run the wires to the receiver. That is it except the paperwork!

P/N 11-06868



ICOM RADIOS – TRANSCEIVERS

ICOM A210 COMM TRANSCEIVER



Innovative airband that's easier to install and see in more places
Large, bright OLED display - A fixed mount VHF airband first! The IC-A210 has an organic light emitting diode (OLED) display. The OLED display emits light by itself and the display offers many advantages in brightness, vividness, high contrast, wide viewing angle and response time compared to a conventional display. In addition, the auto dimmer function adjusts the display for optimum brightness at day or night.

Easy channel selection - It's fast and easy to select any of memory channels in the IC-A210. The "flip-flop" arrow button switches between main and stand-by channels. The dualwatch function allows you to monitor two channels simultaneously. In addition, the auto stack memory stores the last 10 channels used and allows you to recall those channels easily.

GPS memory function - When connected to an external GPS receiver equipped with an airport frequency database, the frequency data such as nearby airports can be transferred and made available in the IC-A210.

Features:

- TSO version planned (Pending as of July 2007)
- 10 regular memory channels with a 6-channel name
- 200 group memory channels (20 Ch x 10 banks) with a channel tag
- NOAA weather channel receive (USA version only)
- One touch access to 121.5MHz emergency frequency
- Side tone function for monitoring your voice with headset
- ANL (Automatic noise limiter) function reduces pulse type noise
- Remote control capability
- Time-out-timer
- VFO scan
- PC programming capability
- Dial lock and panel lock
- Squelch test function

| Description | Part No. | Price |
|-------------------------|----------|-------|
| ICOM A210 Panel Mount | 11-05618 | . |
| ICOM A210M Mobile Mount | 11-05836 | . |
| ICOM A210B Base Station | 11-05839 | . |

ICOM PS-80 BASE STATION POWER SUPPLY



The PS-80 offers quick, easy installation of the IC-A210 in one compact desk-top unit that combines a power supply, speaker, microphone, headphone and antenna connectors.

Power Supply is user selectable for 110 or 220/240 V AC operation and supports a full 7 Watt transmitter output. Large internal speaker booms out 5 watts of audio. Microphone, headphone and antenna connectors are standard in the PS-80 so no wiring is necessary. Just plug in your selected hand or desktop microphone or headphone and outside antenna and you're on the air. Optional SM-6 Desktop Microphone, HM-7 or MIC Hand Microphone and B-ANT Base Station Antenna to complete the package are available and sold separately.

Specifications: * Input voltage: * 117 V AC +/- 10%, * 220 V AC +/- 10%, or * 240 V AC +/- 10% (selectable) * Output voltage: 13.8 V DC +/- 5% (negative ground) * Output current: 6 A * Duty rate: 1 hour for maximum current * Ripple voltage: Less than 20 mV rms * Useable Temperature Range: -10°C to +40°C; +14°F to +104°F * Dimensions (projections not included): 200(W) x 200(H) x 300(D) mm; 7.9(W) x 7.9(H) x 11.8(D) in * Weight: 6.0 kg; 13.2 lb

Icom PS-80 Base Station Only..... P/N 11-00802.....
 Icom A210B PS-80 Microphone..... P/N 11-18581.....

IC A110 VHF AIR BAND TRANSCEIVER (COMM ONLY)



The Icom IC A110 is rugged and reliable for serious ground crew communications. The IC-A110 can be installed in any vehicle and is adaptable to vehicles working on 12V or 24V power sources. The unit features a front mounted speaker, free from any obstacle blocking and puts out 10W of power for the external speaker. Dial select frequencies or memory channels. A total of 99 memory channels are available (requires CSA110 v2 software to be programmed). Up to 7-character names can be assigned to each channel.

Features:

- Equipped EEPROM system provides maintenance free memory backup capability, without the use of a separate backup battery
- Various scan functions, such as VFO and priority scans are available
- Limited number of keys for simple manipulation, but providing advanced multi-functions
- A total of 20 memory channels are available
- Ideal compact size of 150(W)x50(H)x180(D)mm to mount in various type of vehicles
- 36 W (pep) of powerful output
- Excellent durability to cope with even the toughest workplace
- Memory channel only operation possible via PC programming
- Hand Microphone supplied

Specifications:

- Dimensions: 150(W)x 50(H) X 180(D) mm
- Weight: 1.5kg; 3lb. 5 oz.
- Mode: 6K00A3E (AM)
- No. of memory CH: 20
- Antenna Connector: SO-239
- Power supply requirement: 13.75 VDC
- Current drain: Transmitting: 5.0 A max, Receiving: 4.0 A
- Operating temperature range: IC-A110(-30° C to +60° C); IC-A110EURO(-20° C to +55° C)
- Frequency stability: IC-A110 (5 ppm)
 ICOM IC-A110-05B Base Station.....P/N 11-02781.....
 ICOM ICA110-05 Panel MountP/N 11-04352.....



FLIGHTLINE FL 760 TRANSCEIVER

Introducing the FlightLine FL 760 - one of the smallest and lightest VHF Transceivers in the industry.

Specifications

- Frequency range : 118.00 to 136.975MHz (Receive:108.00 to 136.975MHz)
- Channel spacing : 25kHz
- Mode : AM (6K00A3E)
- Number of memory channels : 32
- Acceptable power supply : 11.7 V or 33 VDC (Negative ground only)
- Usable temp. range : -20 to +60
- Frequency stability : +/- 5ppm
- Current drain : TX: 3A(max) RX 0.8A(max) Standby: 300mA
- Dimensions : W61 X D159 X H61 (mm)
- Weight : 430g/14.11oz
- Exposed dial face : 56.4mm 2 1/4.5 inches
- Certification: Not TSO
- Output power : 5 W (carrier), 16W (pep)
- Modulation : small stage modulation
- Modulation limiting : 70 to 100%
- Audio harmonics distortion : Less than 15% (at 85% modulation)
- Hum and noise ratio : More than 40dB
- Spurious emissions : -16dBm or less
- Antenna impedance : 50
- Receive system : Double conversion superheterodyne
- Intermediate frequency : 1st : 38.85MHz (Upper) 2nd : 450kHz (Lower)
- Sensitivity (at 6dB S/N) : Less than 1uV
- Squelch sensitivity : 0.5uV (Threshold)
- Selectivity : More than 8kHz (at 6dB), Less than 25kHz (at 60dB)
- Spurious response rejection : More than 60dB
- Audio output power : More than 4W (at 4)
- Side tone : More than 100mW (at 600)
- Hum and noise : More than 30dB
- Audio output impedance : Ext. SP 4 (4 to 8), Side tone 600
- 2-1/4" panel mount

P/N 11-06307.....

USED AVIONICS FROM AIRCRAFT SPRUCE

Virtually all these avionics are in "Serviceable" condition. This is an FAA term that means that the radios have been repaired as needed, tested according to the manufacturer's procedure, and meet the manufacturer's performance specifications. These radios are legally approved for installation and use. These radios come with either a Yellow Tag or a 8130-3 Serviceable tag. Both tags certify that the radio is in "Serviceable" condition. The difference is the geographical area where the tag is accepted. The Yellow Tag is accepted in North America, while the 8130-3 tag is accepted worldwide. Generally 8130-3 tags are issued for our radios, because we rarely know exactly where it will be sent when it is in the shop. With an 8130-3 tag, we know that it can be used by any of our customers. Serviceable units carry a 90 day warranty. All used avionics are subject to availability, and will be shipped with the tray and connector included. Prices can vary. Please specify 14V or 28V when ordering.

| 3M | | KING CONT. | |
|---|----------|--|----------|
| 3M WX-10 Stormscope | 11-06005 | King KLN-94 IFR-Approach GPS / Moving Map unit only | 11-06084 |
| 3M WX-10A Stormscope | 11-06006 | King KLN-135A VFR GPS | 11-06085 |
| 3M WX-11 Stormscope | 11-06007 | King KMA-20 Audio Panel & Marker Beacon Receiver | 11-06086 |
| 3M WX-8 Stormscope | 11-06008 | King KMA-24 Audio Panel & Marker Beacon Receiver | 11-06087 |
| ARC | | King KMA-24H (-50 Series) Audio Panel and Intercom | 11-06088 |
| ARC (Cessna) IN-385A | 11-06009 | King KMA-24H (-70 Series) Audio Panel and Intercom | 11-06089 |
| ARC (Cessna) IN-386A | 11-06010 | King KMA-26 Audio Panel | 11-06090 |
| ARC (Cessna) IN-514B | 11-06011 | King KN-53 NAV Receiver | 11-06091 |
| ARC (Cessna) IN-525B | 11-06012 | King KN-53 NAV Receiver with Glidescope | 11-06092 |
| ARC (Cessna) R-446A ADF Receiver | 11-06013 | King KN-62 DME | 11-06093 |
| ARC (Cessna) RT-328T NAV / COMM | 11-06014 | King KN-62A DME | 11-06094 |
| ARC (Cessna) RT-359A Transponder | 11-06015 | King KN-62A DME (-01 Version) | 11-06095 |
| ARC (Cessna) RT-385A NAV / COMM | 11-06016 | King KN-64 DME | 11-06096 |
| ARC (Cessna) RT-459A Transponder | 11-06017 | King KNI-520 GPS / VOR / LOC / Glidescope Indicator | 11-06097 |
| ARC (Cessna) R-485B NAV / COMM | 11-06018 | King KNS-80 NAV / RNAV / DME / Glidescope Receiver | 11-06098 |
| ARC (Cessna) R-443B Remote Glidescope Receiver | 11-06019 | King KNS-81 NAV / RNAV / Glidescope Receiver | 11-06099 |
| ARNAV | | King KR-21 Marker Beacon Receiver | 11-06100 |
| ARNAV STAR 5000 VFR GPS Navigator | 11-06020 | King KR-22 Marker Beacon Receiver | 11-06101 |
| CENTURY | | King KR-85 ADF Receiver | 11-06102 |
| Century NSD-360A Non-Slaved Compass System (HSI) | 11-06021 | King KR-86 ADF Receiver and Indicator | 11-06103 |
| Century NSD-360A Slaved Compass System (HSI) | 11-06022 | King KR-87 ADF System with Non-Slaved KI-227 Indicator | 11-06104 |
| COLLINS | | King KR-87 ADF System with Slaved KI-227 Indicator | 11-06105 |
| Collins ADF-650 ADF System | 11-06023 | King KT-70 Mode S Transponder | 11-06106 |
| Collins ADF-650A ADF System | 11-06024 | King KT-71 Transponder | 11-06107 |
| Collins GLS-350 Remote Glidescope Receiver | 11-06025 | King KT-76 Transponder | 11-06108 |
| Collins IND-350 GPS / VOR / LOC Indicator | 11-06026 | King KT-76A Transponder | 11-06109 |
| Collins IND-350A GPS / VOR / LOC Indicator | 11-06027 | King KT-76C Transponder | 11-06110 |
| Collins IND-351 GPS | 11-06028 | King KT-78 Transponder | 11-06111 |
| Collins IND-351A GPS | 11-06029 | King KT-78A Transponder | 11-06112 |
| Collins IND-650 ADF Indicator | 11-06030 | King KT-79 Transponder | 11-06113 |
| Collins IND-650A ADF Indicator | 11-06031 | King KX-125 NAV / COMM / Indicator | 11-06114 |
| Collins MKR-350 Marker Beacon Receiver | 11-06032 | King KX-155 NAV / COMM, 14 Volts | 11-06115 |
| Collins RCR-650 ADF Receiver | 11-06033 | King KX-155 NAV / COMM, 14 Volts with Glidescope | 11-06116 |
| Collins RCR-650A ADF Receiver | 11-06034 | King KX-155 NAV / COMM, 28 Volts | 11-06117 |
| Collins TDR-950 Transponder | 11-06035 | King KX-155 NAV / COMM, 28 Volts with Glidescope | 11-06118 |
| Collins VHF-251 COMM Transceiver | 11-06036 | King KX-155A NAV / COMM with Glidescope | 11-06119 |
| Collins VIR-351 NAV Receiver | 11-06037 | King KX-165 NAV / COMM, 14 Volts | 11-06120 |
| GARMIN | | King KX-165 NAV / COMM, 14 Volts with Glidescope | 11-06121 |
| Garmin GI-102A | 11-06038 | King KX-165 NAV / COMM, 28 Volts | 11-06122 |
| Garmin GI-106A | 11-06039 | King KX-165 NAV / COMM, 28 Volts with Glidescope | 11-06123 |
| Garmin GNC-250 VFR | 11-06040 | King KX-170B NAV / COMM | 11-06124 |
| Garmin GNC-250XL VFR | 11-06041 | King KX-175B NAV / COMM | 11-06125 |
| Garmin GNS-430 - 14 or 28 Volts | 11-06042 | King KY-196 COMM Transceiver | 11-06126 |
| Garmin GNS-430 IFR - 28 Volts | 11-06043 | King KY-196A COMM Transceiver | 11-06128 |
| Garmin GNS-530 IFR | 11-06044 | King KY-196E COMM Transceiver | 11-06129 |
| Garmin GPS-150 VFR | 11-06045 | King KY-197 COMM Transceiver | 11-06130 |
| Garmin GPS-150XL VFR | 11-06046 | King KY-197A COMM Transceiver | 11-06131 |
| Garmin GPS-155 IFR- | 11-06047 | King KY-96A COMM Transceiver | 11-06132 |
| Garmin GPS-155XL IFR | 11-06048 | King KY-97A COMM Transceiver | 11-06133 |
| Garmin GTX-320 Transponder | 11-06049 | L-3 | |
| Garmin GTX-327 Transponder | 11-06051 | L-3 (Goodrich) WX-1000 Stormscope | 11-06134 |
| II Morrow / Garmin AT Apollo 360 Map Moving Map | 11-06052 | L-3 (Goodrich) WX-1000+ Stormscope | 11-06135 |
| II Morrow / Garmin AT Apollo 360 VFR | 11-06053 | L-3 (Goodrich) WX-900 Stormscope | 11-06136 |
| II Morrow / Garmin AT Apollo 820 Flybuddy VFR | 11-06054 | L-3 (Goodrich) WX-950 Stormscope | 11-06137 |
| II Morrow / Garmin AT Apollo GX-50 IFR | 11-06056 | MCCOY | |
| II Morrow / Garmin AT Apollo GX-55 IFR | 11-06057 | McCoy MAC-1700 NAV / COMM | 11-06138 |
| INSIGHT | | McCoy MAC-1700 VTX NAV / COMM | 11-06139 |
| Insight Strike Finder | 11-06058 | NARCO | |
| KING | | Narco AT-150 Transponder | 11-06140 |
| King KA-134 Audio Panel | 11-06059 | Narco AT-50 Transponder | 11-06141 |
| King KA-44B ADF Loop / Sense Antenna | 11-06061 | Narco AT-50A Transponder | 11-06142 |
| King KCS-55A Compass System (HSI) | 11-06062 | Narco COM-810 COMM Transceiver | 11-06143 |
| King KCS-55A Compass System (HSI) with Bootstrap Output | 11-06063 | Narco COM-811 COMM Transceiver | 11-06144 |
| King KDI-527 DME Indicator | 11-06064 | Narco DME-890 DME | 11-06145 |
| King KI-201C VOR / LOC Indicator | 11-06066 | Narco ID-824 VOR / LOC Indicator | 11-06146 |
| King KI-202 GPS / VOR / LOC Indicator | 11-06067 | Narco ID-825 VOR / LOC / Glidescope Indicator | 11-06147 |
| King KI-203 VOR / LOC Indicator | 11-06068 | Narco MK-12D NAV / COMM ARC (Cessna) Replacement | 11-06148 |
| King KI-204 VOR / LOC / Glidescope Indicator | 11-06069 | Narco MK-12E NAV / COMM with Glidescope | 11-06149 |
| King KI-206 GPS / VOR / LOC / Glidescope Indicator | 11-06071 | Narco MK-12E NAV/COMM ARC (Cessna) Replacement | 11-06150 |
| King KI-208 VOR / LOC / Glidescope Indicator | 11-06072 | Narco MK-12E NAV/COMM with Glidescope | 11-06151 |
| King KI-209 VOR / LOC / Glidescope Indicator | 11-06073 | Narco NAV-121 VOR / LOC Indicator / NAV Receiver | 11-06152 |
| King KI-209A GPS / VOR / LOC / Glidescope Indicator | 11-06074 | Receiver / NAV Receiver / Marker Beacon Receiver and Indicator | 11-06153 |
| King KI-211C VOR | 11-06075 | SANDEL | |
| King KI-214 VOR | 11-06076 | Sandel SN-3308 Electronic HSI (EHSI) | 11-06154 |
| King KI-227 ADF Indicator (Non-Slaved -00 Version) | 11-06077 | TERRA | |
| King KI-227 ADF Indicator (Slaved -01 Version) | 11-06078 | Terra TRT-250D Transponder | 11-06155 |
| King KLN-89 VFR GPS Navigator | 11-06079 | TKM | |
| King KLN-89B IFR-Approach GPS / Moving Map | 11-06080 | TKM MX-11 COMM Transceiver | 11-06156 |
| King KLN-90A IFR-En Route GPS / Moving Map | 11-06081 | TKM MX-170B NAV / COMM | 11-06157 |
| King KLN-90B IFR-Approach GPS / Moving Map | 11-06082 | TKM MX-300 NAV / COMM | 11-06158 |
| King KLN-94 IFR-Approach GPS / Moving Map System | 11-06083 | TKM MX-385 NAV / COMM | 11-06159 |



CDIS - RELAY ASSEMBLIES



MID-CONTINENT 2 INCH CDI

This indicator will fit the need of aircraft owners of LSA all the way up to business aircraft. The CDI allows for precise and accurate readings. Nav, GPS and VLOC annunciation aer built-in and backlit by LED lighting, providing enhanced nighttime and sunlight readability. The CDI has TSO approval from the FAA and will interface with most nav and GPS receivers.

Features:

- Compact 2-1/4 inch size saves panel space
- Innovative Safety Feature – pointers move out of view with invalid signal
- Precision replacement for older navigation indicators
- Rectilinear meter movements allow for more accurate readings.
- LED backlighting looks great and provides increased reliability.
- Built-in annunciations for NAV, GPS, and VLOC or BC.
- FAA TSO approved for use with most GPS and VOR systems
- Rugged construction includes ball bearings in critical areas.
- True course resolver output (1 volt, 30 Hz)
- Quality Mil-Spec connectors included
- One year limited warranty

Specifications:

- Power Input: Accepts 11 to 32 Volts DC.
- Lighting: Internal white LED. Lighting control voltage is selectable for 5, 14, or 28
- Weight: 0.6 lbs.
- Length: 3.5 inches

Mid-Continent - CDI MD200-406 (This unit has the NAV/GPS & VLOC annunciations for the Garmin units) P/N 11-05106
 Mid-Continent - CDI MD200-506 (This unit has the NAV/GPS & BC for all other applications) P/N 11-05107
 MD200-306 CDI GS Indicator P/N 11-00184

GARRECHT TRANSPONDER CLASS 1 AND CLASS 2



VT01
UltraCompact

The Garrecht Transponder VT-01 is a flexible and modular system concept, in a compact size (57mm) with a very low current and integral alticoder. Available as Class-1 (125 Watt) or Class-2 (71 Watt) System.

Specifications: Certification i.a.w: ETSO-2C112a, ED-73B

•Min. RF Output power @Antenne: Class 1: 125 Watt Class 2:71 Watt. •Integral alticoder: Yes • Weight control unit: 0,21 kg. •Weight main unit: 0,61 kg •Supply voltage: 9-32 V DC • Power consumption (operation) @ 13,8 V (1200 Mode A/C or 50 Mode-S replies): Class 1: 0,24 A Class 2:0,22 A • Power consumption (on Ground) @ 13,8V (Squitter active): Class 1: 0,17 A Class 2: 0,16 A • Power consumption (Standby) @ 13,8 V: 0,005 A •Interfaces: RS232 + CAN •OPERATIONAL LIMITS • Max. Altitude: Class 1: 40.000ft Class 2: 15.000 ft (4.572 m) • Max. TAS: Class 1: 250 kts (463 km/h) Class 2: 175 kts (324 km/h) • MTOW: Class 1: 5.700 kg Class 2: 5.700 kg

Transponder Class 1 P/N 11-04529
 Transponder Class 2 P/N 11-04530
 Transponder UltraCompact Class 1 P/N 11-05869
 Transponder UltraCompact Class 1 P/N 11-05870

AMERI-KING REMOTE RELAY ASSEMBLIES



The Ameri-King AK-950R is a FAA TSO'd approved remote Relay Assembly. It is designed to provide Switching Function, for HSI / CKE Data Inputs, between NAV (VOR) Receiver and the approached certified GPS receiver. The Assembly consists of a 24 pole built-in relay to simplify installation of the Switching Function. All Relays have gold-plated contacts and are Nitrogen filled for high reliability. The AK-950R

consists of 2 sub-groups, A & B. Subgroup A includes 20 poles switching; A failure detection pole built in; and an ILS auto override (to reverse to NC (NAV) position upon ILS frequency is turned in). Subgroup B includes 2 poles switching. Each subgroup is controlled independently. Protection includes input power reverse polarity, power transient. All relay coils are protected against EMI and transient switching. Installation is extremely simple. All necessary hardware is provided, including mating connector w/machine crimped contacts.

AK-950-R8-14V 8 Poles Relay Ass'y. P/N 11-01407
 AK-950-R8-28V 8 Poles Relay Ass'y. P/N 11-01408
 AK-950-R12-28V 12 Poles Relay Ass'y. P/N 11-01409
 AK-950-R12-14V 12 Poles Relay Ass'y. P/N 11-01410
 AK-950-R24-14V 24 Poles Relay Ass'y. P/N 11-01411
 AK-950-R24-28V 24 Poles Relay Ass'y. P/N 11-01412
 AK-950-R48-14V 48 Poles Relay Ass'y. P/N 11-01413
 AK-950-R48-28V 48 Poles Relay Ass'y. P/N 11-01414
 9500001B Connector Kit, 78 female mach. pins, crimp type Ass'y. P/N 11-01415

REMOTE SWITCHING RELAY UNIT



Remote mounted 24-pole unit features eight Nitrogen-filled relays (3 poles per relay) with Gold-plated contacts



- Ideal for GPS/VOR transfer and audio switching applications
- Relays are activated individually by voltage or ground keying or as a group by ground keying
- FAA PMA Approved (certified to 55,000 ft.) Versatile Mounting - Horizontal, Vertical or flat mount configurations
- Fail-safe fault monitoring through interlocking of all internal relays
- Adjustable dimmer output for external annunciations
- Quality MIL-SPEC connector kit included
- Specifications: Width: 2.86"
- Height: 1.52", Depth: 2.6"
- Weight: .75lbs

Remote Relay Unit 14V..... P/N 10-02125
 Remote Relay Unit 28V..... P/N 10-02127

AVMASTER RELAY 14VOLT & 28VOLT



The AvMaster Relay is the first and only self contained, fail-safe, avionics master relay package to protect expensive radio gear at an affordable price. The AvMaster Relay is installed between the power bus and the protected radios. The Avionics Master Switch then controls the AvMaster Relay only and not the radios directly. Not only does the AvMaster Relay protect the system from transient electrical

spikes during normal operations, its four parallel relay controlled, surge protected circuits allow for individual fusing that separate all radios from each other.

The avionics master switch is a great idea. It protects against the large power surge potential during start up and shut down. It's also useful to prevent premature wear of each radio's switches and allow the benefit of maintaining the volume settings. But, it has a major weakness. An Avionics Master Switch becomes a potential single point of failure. If it fails, ALL radios shut down! A second Avionics Master Switch has been used as the solution to this problem. However, this offers no spike protection while on and it still connects all radios together. An overload in one radio can potentially spill over to the whole avionics circuit and take them all out.

The fail-safe design of the AvMaster Relay eliminates the need for a backup Avionics Master Switch. If the Avionics Master Switch ever fails, the pilot won't even realize it until after the flight is over and the Avionics Master Switch doesn't shut down the radio stack. The radios will just be controlled individually until the problem is resolved.

The AvMaster Relay will pay for itself with fewer repairs over the increased lifetime of the avionics stack.

14 Volt P/N 11-04857
 28 Volt P/N 11-04858

AN-21 ANNUNCIATOR CONTROL UNIT



The AN-21 is a light and warning tone generator for use in experimental aircraft. A total of twenty-one circuits can be monitored, sixteen channels are activated by ground and five by positive input.

Each channel activates a light and emits a warning tone when triggered. The AN-21 also includes a

Windows Programming Utility to enable the user to configure it for each specific installation. Each channel, when activated, has an associated user programmable output which can be programmed to do the following: Steady light, Flashing light, Alert Tone with steady or flashing light.

Features: "Master Caution" - User selected channels can trigger a Master Caution Annunciator •Test Function - Causes all lamps to illuminate to check the bulbs •Dim - Causes all Lamps to illuminate a selected lower brightness for night operation. P/N 11-04701

TED 4-70 GPS NOTCH FILTER



Your global positioning system receives its positional information at 1575.42 MHz. The communications radios on-board your aircraft typically broadcast in the 121.5 MHz range. That is a wide separation in frequency bandwidth but it's not the complete picture. Your comm's are also producing harmonics which can produce significant noise at the GPS frequency. Now you can filter that signal and avoid potentially hazardous situations.

A simple low cost way to clean up the receivers frequency environment. The TED 4-70 notch filter installs quickly and easily via standard BNC bayonet couplings, in-line between radios and antenna. The 4-70 rejects in excess of 50dB of 1575.42 signal at the source. Each filter is individually tuned and checked to assure maximum performance. Of course, the 4-70 also passes strenuous environmental criteria so important in aircraft applications. Major GPS manufacturers recognize this problem & recommend using the 4-70 on new and retrofit installation.

P/N 11-02204

AVONICS COOLING FANS - SCREEN PROTECTORS

TROLL AVIONICS COOLING FANS



THE ICE BOX - Avionics cooling fan is designed to mount remotely and cool up to 3 radios. It is shielded and filtered and uses standard 5/8" CAT type hose to direct air from 3 outlet ports. Thickness of the unit is only 1.4", and it operates on 14 or 28 volts. Ice Box offers a thin profile, flexible mounting, and very quiet operation. 2 yr warranty.

12V P/N 11-18350
28V P/N 11-18360

SUPER ICE BOX - Same as above except w/5 outlet ports instead of three, to cool 2 extra radios. 12V P/N 11-18365
28V P/N 11-18370



CYCLONE - The Cyclone-21 is a compact (3 x 3 x 1") aircraft electronics cooling fan that delivers 21 cubic feet per minute of forced air cooling to a variety of avionics equipment
3-port 12V fan P/N 11-18380
3-port 24V fan P/N 11-18381
6-port 12V fan P/N 11-18382
6-port 24V fan P/N 11-18383
5/8" fan tubing P/N 11-00504

AMERI-KING AVIONICS COOLING FANS

The Ameri-king AK-950F is part of a FAA TSO'd approved kit. GPS/Avionics fan is compact and delivers up to 26.6 CFM cubic feet per minute of forced air cooling to a variety of avionics equipment. It features ball bearing for highest reliability and long lasting. The AK-950F fan may be behind or beneath aircraft instrument panel or avionics equipment rack or cabin pressure bulkhead. The small, one port direct mounting fans (F1d) are for internal cooling and there is a second port for external cooling. No remote hose is required.

Features Include: power reverse polarity protection; compact size; choices of 1, 2, 3, or 5 hose outputs; universal mounting; hoses; connector kit and hardware (included). 4-year extended warranty. Size for 1-3 ports: L- 5.75" W- 5.130" H- 2.080". 5 ports: L- 6.75" W- 5.130" H- 2.080". Small F1d port: L- 2.60" W- 2.5" H- 2.5". Power 14 or 28 VDC.



| Description | 14V P/N | Price | 28V P/N | Price |
|----------------------|----------|-------|----------|-------|
| 1-port w/hose | 11-18385 | . | 11-01416 | . |
| 2-ports w/2 hoses | 11-18386 | . | 11-00177 | . |
| 3-ports w/3 hoses | 11-18387 | . | 11-01417 | . |
| 5-ports w/5 hoses | 11-18388 | . | 11-01106 | . |
| 10-ports w/ 10 hoses | 11-05825 | . | 11-05820 | . |
| Small, 1 Port (F1d) | 11-01418 | . | 11-01419 | . |

AMERI-KING AK950-FTR RFI DC LINE FILTER

The AK950-FTR RFI DC line filter is the only TSO approved RFI filter available. The AK950-FTR was designed to replace all Hisonic RFI filters. It replaces Hisonic RFI-40, RFI-70, and RFI-100 filters. Works on 40-100 amp operation, working voltage is 30VDC. FTR1 designed to reduce noise from alternator or generator.

AK950-FTR (pictured) P/N 11-00182
AK950-FTR1 P/N 11-00183



SANDIA ACF 314 (3 PORT FAN)

The ACF 314 and ACF 328 simultaneously cool up to three avionics units. Operating on 14Vdc and 28 Vdc respectively the ACF 314 and ACF 328 supply up to 20 cubic feet of cooling air per minute, helping maintain your avionics at a proper operating temperature. SANDIA Aerospace cooling fans use high quality, brushless blower motors and or Run-Quietm technology. These units are FAA PMA's and have passed stringent environmental testing to ensure years of reliable service. **Specifications:** • Operating Voltage: 14Vdc • Current Draw: 960mA (1.7A at startup) • Size: 5.18" x 5.18" x 2.1" • Weight: 1.18 lbs. P/N 11-06345

P/N 11-06345



CYCLONE 600 - 6 PORT AVIONICS COOLING FAN

The Cyclone-600 is a light weight, highly reliable brushless DC avionics blower that delivers 45-50 CFM of forced air to onboard aircraft electronics. The universal mounting system mounts vertical, horizontally or at 45 degrees for straight forward installations for all aircraft make and models.

Features

- * New DC Brushless Motor with FAA/PMA Approval.
- * High Performance 626ZZ Bearing for Extended Life.
- * High Impact Phenolic Housing.
- * Laser Balanced Impeller wheel.
- * Universal Front Plate (4,5,6, Ports).
- * Cable Harness (36"), included.

Benefits

- * Over Current Protection
- * Locked Rotor Protected
- * Reverse Polarity Protected
- * FAA/PMA Approved
- * DO160 D Tested
- * Low Noise

Specifications

- * Voltages: 12-14 VDC 600mA; 24-48 VDC 500mA
- * CFM: 45/50 CFM at 6000 RPM
- * Dimensions: 4.5in (H) x 3.0in (W) x 6.25in (L)

| Description | Part No. | Price |
|-------------------------------|----------|-------|
| Cyclone 600 6 Port Fan 12-14V | 11-05221 | . |
| Cyclone 600 6 Port Fan 24/28V | 11-05222 | . |



LONE STAR 12/24 VDC BLOWER KIT

Lone Star Aviation's new 1 port blower is the smallest (1 x 2 x 2), most efficient (brushless dc motor), and the most versatile avionics cooling fan in our industry today.

This New blower's universal mounting bracket makes it easy to set-up and install on a verity of aircraft Install immediately on experimental, sport and soon on general

aviation, business, rotor-craft, commercial class aircraft as well as Land-Mobile, Marine and Military Vehicles.

Specifications

- * Light Weight: 52 grams, 0.115 lbs
- * Enclosure: Aluminum, (powder coated)
- * Vdc, amperage: 12 = 10.2-15.8Vdc, 0.320ma
- * Vdc, amperage: 24 = 18.2-28.5Vdc, 0.300ma
- * 1 port = 5/8 inch x 1.0
- * Max Static pressure: H2O = 0.64
- * Max Air Flow: 6.7 CFM
- * Universal Mounting Bracket: (4)(mt)(h)
- * Operating Temp: -55C to +70C
- * FAA-PMA (pending), 6-30-08
- * Ultra-Small Size: 2.0H x 1.00W x 2.0L
- * Easy Installation: (4 x 6-32)
- * 1 year Limited Warranty

| Description | Part No. | Price |
|--|----------|-------|
| Lonestar 12 VDC Blower Kit L.S03-02040 | 11-06567 | . |
| Lonestar 24 VDC Blower Kit L.S03-02041 | 11-06568 | . |

NAVIGATION SCREEN PROTECTORS



The Pre-cut navigation screen protectors provide excellent protection from scratches. The anti-glare layer reduces unwanted reflections, increasing contrast, clarity, and viewing comfort even with the use of polarized lenses. This film is thick enough to protect the screen, yet thin enough to have no effect on touch screen sensitivity. Light tack adhesion provides for residue-free removal. Does not require special cleaners. Available for: ADR, Anywhere Map, Avidyne, Apollo, Chelton, Eclipse Avio, Garmin, King, Vista Nav, and more.

| Description | Part No. | Price | Description | Part No. | Price |
|-------------------|----------|-------|-----------------|----------|-------|
| F/B NAV | 11-07140 | . | 2PC G-1000 | 11-07154 | . |
| MAP LS-800 | 11-07141 | . | 3PC G-1000 | 11-07155 | . |
| CNX-80 | 11-07142 | . | GARMIN 430 | 11-07157 | . |
| EFD PRO | 11-07143 | . | GARMIN 480 | 11-07158 | . |
| 1PC AVIDYNE | 11-07144 | . | GARMIN 500 | 11-07159 | . |
| 2PC AVIDYNE | 11-07145 | . | GARMIN 530 | 11-07160 | . |
| 5PC PIPER MODELS | 11-07146 | . | GARMIN 600 | 11-07161 | . |
| 1pc FlightMax 500 | 11-07147 | . | GARMIN 696 | 11-07162 | . |
| 1pc Chelton IDU | 11-07148 | . | GMX-20 | 11-07163 | . |
| 4PC 2G-430 | 11-07149 | . | GMX-200 | 11-07164 | . |
| 4PC 2G-430 | 11-07150 | . | 196,296,396,496 | 11-07165 | . |
| 2PC C-P | 11-07151 | . | KMD 250 | 11-07166 | . |
| 3PC Eclipse Avio | 11-07152 | . | KING KMD550 | 11-07167 | . |
| 1PC G-1000 | 11-07153 | . | CIS-1000 | 11-07168 | . |

AV

XCOM TRANSCEIVERS



XCOM VHF TRANSCIVER

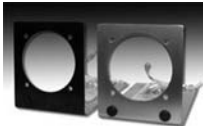
Designed from the ground up the XCOM offers superior performance under the demanding and noisy conditions experienced in many amateur built aircraft. With low power consumption this radio is ideally suited to use in gliders, homebuilts, and ultralights. A full 6-Watt carrier and 20 Watt PEP output ensure that you will be heard above the general chatter in a busy airspace and the VOX intercom system with music input will enhance your enjoyment of the flight. With expanded receive range from 108 MHz, the XCOM760 provides NOAA Weather reception ensuring that you are always aware of impending weather conditions. The XCOM 760 will also operate down to a 108 MHz so you can receive the VOR channels. Additional safety enhancements such as dual watch allows the pilot to listen to the standby frequency while still monitoring the primary frequency. The XCOM 760 also has 99 memory channels, large volume and channel selector knobs and well spaced buttons. This radio is extremely easy to operate even when wearing flight gloves and you can even check the condition of your battery with the built in voltage monitor. Software update capability and Internet downloads mean that you are always provided with the latest features. The XCOM 760 offers superior quality, enhanced features and improved performance over many of the more expensive airband radios, without the high cost found in other brands. FEATURES: • New easier to read LCD screen • Several software updates • Memory scanning of up to 99 memory channels • Streamlined software increasing reliability and performance • Music/Second comm input is now user selectable for another VHF, UHF or Music input • Added sidetone volume adjustment • Improved AGC controls for close and powerful stations • Improved speaker output for glider operations P/N 11-02206.....

XCOM INSTRUCTIONAL DVD WIN XP



Instructional DVD explaining the complete operation and set-up of the XCOM VHF Transceiver. 30 minutes duration. P/N 11-05674.....

XCOM UNIVERSAL STAINLESS STEEL MOUNTING BRACKETS



Designed for the XCOM VHF aircraft transceiver but equally suitable for any other radio or instrument with the same 2 1/4 inch mounting hole. Can also be used in the Marine or automotive environment.

Manufactured from 2 mm thick 304-2B grade stainless steel for strength and corrosive resistance. Two 6.5 mm holes are provided for conveniently mounting switches such as the intercom ON/OFF/Isolate and the backlight switch. Blanking plugs are factory fitted to maintain the appearance if the holes are not used.

Can be installed in any orientation e.g. left, right, top or bottom; switches can be mounted horizontally or vertically. Supplied complete with stainless steel screws, washers and nyloc nuts for a secure installation, supplied with earthing strap fitted to the bracket for connection to the radio earth with a quick connect earthing point provided for bonding to the aircraft ground. P/N 11-05678.....

XCOM DUAL ALUMINUM BRACKET



This water jet cut bracket is ideal for mounting two XCOM's side-by-side in a normal aircraft rackmount system. Cut to the exact size required it will save you time and trouble in fitting a dual XCOM system to your aircraft. Comes mill finish in 2 mm aluminium ready for painting. P/N 11-05679.....



XCOM GLIDER BOOM MICROPHONE

Boom Microphone - More than 1200 made and used all over the world, 3 year guarantee. P/N 11-05675.....



XCOM GLIDER SPEAKER

Glider Speaker - Clear sound and easy to understand 5 watts output 8 ohm. P/N 11-05676.....

XCOM REMOTE HEAD



The newest addition to the XCOM range is the XCOM VHF Remote Head option. Interfacing with the XCOM VHF, this tiny unit provides remote access to all of the capabilities of the XCOM VHF Radio in one quarter of the space. Ideal for training situations, tandem seat aircraft, limited space installations or simply to provide easy access for both pilot and co-pilot, this unit duplicates the entire XCOM VHF display and provides full access to all functions (except power on) from the front panel of the radio. The connection between the remote head and the XCOM VHF radio is via a simple cable allowing all of the controls on either panel to be duplicated on the remote. When the master unit is changed, the remote head follows and vice versa. For example, if the pilot in the front seat of the aircraft adjusts the radio to 123.450 then the remote display also adjusts to show 123.450. If the toggle button is pressed on the remote, then the frequencies are toggled on both units. All of the XCOM features apart from powering on can be duplicated with a remote head option. The remote head is extremely small, being less than 1 1/2" deep (40mm), allowing it to be installed in places where the XCOM will not fit such as in the very tight confines of the panel in the Pitts Special. P/N 11-04399.....

XCOM DELUXE KIT

The XCOM Deluxe package comes complete with XCOM VHF Transceiver, 2 place wiring harness for easy installation, electrolytic capacitor, Comant 121 TSO'd aerial and 2.5 meters double shielded coaxial cable and plugs. P/N 11-04491.....

XCOM POWERMATE REGULATOR



The Power Mate regulator is designed to provide a clean DC power source to charge a 12Volt battery when connected to a single phase alternator found on Rotax and Jabiru engines. The output voltage is electronically stabilised and preset to a maximum output voltage of 14.5 V. @ 8 Amps. The Power Mate has inbuilt overload protection and is supplied with a 15 amp fuse and mounting instructions. Used on hundreds of aircraft worldwide with fantastic results removing engine electrical noise. Short circuit proof, overheating and over voltage protected, water and vibration proof, extends battery life. P/N 11-05673.....

XCOM VOLTAGE CONVERTER 15-38V



Switch mode voltage converter with soft shutdown and intelligent control. Input Voltages 15 to 38 Volts, Output 13.2 Volts 7 amps. Compact, efficient, short circuit protected, reverse polarity protected, overload protected. Perfect for warbirds. Made in the UK. Lightweight 195 grams (6.8 oz), Mounting bracket supplied. P/N 11-05680.....

XCOM FLIGHTCELL 2GO PHONE ADAPTER



Flightcell 2Go connects your cellphone through to your headset with amplified sound for quality audio communications. Features: • Compatible with stereo and mono systems. • Portable & battery powered, works independently of aircraft systems. • Proven Flightcell technology as used by US Air Force. • Auto-on mode - plug and fly. • EMI immunity for GSM and Nextel (iDen) phones. • LED battery and talk/stand-by indicator. P/N 11-05677.....

XCOM STEREO VIDEO PATCH CABLE



Seamlessly connect a Stereo or Mono Video Camera, Tape Recorder or Digital Voice Recorder into your aircraft headsets and record all communications between the Pilot and Co-Pilot, ATC and other Aircraft. Perfect for making your own aviation videos with crystal clear narration, flight training or many other uses. P/N 11-05658.....

ENCODERS - CABIN SPEAKERS



ACK A-30 ALTITUDE ENCODER

Add Mode C capability to your aircraft the most cost-effective way. The ACK encoder is the smallest, lightest, highest quality encoder available today and features the latest solid-state electronics for high reliability. Installation is quick and easy and usually is completed in less than 1 hour. It is compatible with most transponders in use today and reports altitude to 30,750 ft. Includes quick-release mounting tray, 4-ft. color-coded wiring harness with prewired jack, static line and fittings for installation in any aircraft, and installation manual with popular transponder pin-outs. 1yr. warranty. P/N 11-01561



ACK A30.8 (MOD 8) ENCODER

The ACK A30.8 (Mod 8) encoder is ideal for use with most GPS and TAWS systems, and works well with most of today's mode S transponders. Feature Gray code in 100ft. increments and RS-232 in 10 or 100 feet increments. Furnished with a 4 ft. harness, pre-wired jack, quick release mounting tray, fittings, static line, and installation manual. Reports altitude to 42,000 ft. One Year Warranty. P/N 11-02375

AMERI-KING ALTITUDE ENCODERS

The Ameri-King AK-350 is the most advanced blind altitude reporter on the market, extremely accurate and reliable, the AK-350 is compatible with all transponders, is TSO-C88 approved, and reports altitude to 30,000 ft. Only 3.5"x 2"x 4.75" and weighs 0.4 lbs. Perfect for pressurized or non-pressurized installations and uses 14V or 28V power. Installation is very simple; all accessories and installation instructions are included. 3 year extended warranty. The AK-35, AK-40 and AK-50 encoders are designed for aircraft flying at altitudes higher than 30,000 ft.



| Model # | Max. Altitude | Part No. | Price |
|---------|---------------|----------|-------|
| AK-350 | 30,000 ft. | 11-12010 | . |
| AK-35 | 35,000 ft. | 11-12011 | . |
| AK-40 | 40,000 ft. | 11-12012 | . |
| AK-50 | 50,000 ft. | 11-12013 | . |
| AK-60 | 62,000 ft. | 11-01250 | . |

NARCO AR850 ALTITUDE ENCODER

15 Pin FEATURES: • Solid State Sensor Reports Altitude to 30,000 ft. • Meets or Exceeds FAA TSO C88 Requirements • Designed to be used in non-pressurized, temperature controlled environments • Can be installed behind or beneath your instrument panel • Operates independently of other altitude reporting equipment • Highly Compatible • Compact and Lightweight • "Blind" Encoder means removal will not ground the aircraft • Operates on 11 to 32 VDC with only minimal power drain • Available for 30,000 ft. • Size: 4.3"x1.74"x6.4"

15 Pin.....11-01564

25 Pin.....11-19875



TRANS-CAL ALTITUDE ENCODER MODEL SSD120-30N

42 months manufacture direct replacement. * Average MTBF: 9.7+ years. That's right: Trans-Cal encoders are among the most reliable on the market, commonly providing reliable service for over 10 years. * Pin for pin replacement for most other manufacturers encoders. * Comes with Mating Connectors with Cable Clamps, and Mounting Bracket. * Optional: Available with two independent RS232 serial data ports selectable message protocols for most popular avionics interfaces. Programmable for 100' and 10' resolutions. See Part No. 11-06983 * Optional: Available with adapter plates that will allow the installer to mount the unit in another manufacturer's mounting tray. Specifications: * Size: 2.5"W x 3.42"H x 1.38"L. * Operating temperature: -20°C to +70°C * Operating altitude: -1000' to +30,000'(Available in altitudes from 30,000' up to 100,000') * Accuracy: +50' from -1000' to +30,000' * Weight: 5.9 oz. * Will operate on either 14 or 28 VCD at 0.270 Amps. * No Warm-up time: +20°C to +70°C -20°C to +20°C 30 sec P/N 11-06489.....



TRANS-CAL ALTITUDE ENCODER MODEL SSD120-30N-RS232

Best Warranty in the business: 42 months manufacture direct replacement. If your Trans-Cal encoder experiences a warranty covered failure, we will replace your unit with a brand new unit with a new 42 month warranty. Average MTBF: 9.7+ years. That's right Trans-Cal encoders are among the most reliable on the market, commonly providing reliable service for over 10 years. Pin for pin replacement for most other manufacturers encoders. Optional: Available with adapter plates that will allow the installer to mount the unit in another manufacturer's mounting tray. Features: * Operating temperature: -20°C to +70°C * Operating altitude: -1000' to +30,000' * Accuracy: 50' from -1000' to +30,000' * Weight: * Will operate on either 14 or 28 VCD at 0.270 Amps. * +20°C to +70°C, -20°C to +20°C 30 seconds. P/N 11-06983.....

MICROAIR EC2002 ALTITUDE ENCODER



Microair Avionics is pleased to announce the EC2002 altitude encoder. The EC2002 will accurately report the aircraft's altitude from -1000 to +35,000ft. The altitude output will be via the 10 line Gillham "Gray" code. The EC2002's accuracy has been measured as a 40 foot drift over 35,000 feet. The EC2002 will have the lowest power requirements of any altitude encoder today. The EC2002 will have a typical current consumption of 10 - 90mA, this makes the

EC2002 the logical choice for all battery only operators. The EC2002's small size and light weight make installation very simple. The chassis is flanged, and is predrilled with mounting holes for easy attachment. The connections for the EC2002 consist of the well know DB-15 electrical connector with pin assignments identical to many existing encoders, and a 1/8" NPT fitting which is an industry standard for aircraft equipment. These connections make the EC2002 compatible with all ATC transponders currently available. P/N 11-05105

SANDIA SAE5-35 ALTITUDE ENCODER



The SAE5-35 altitude encoder from Sandia is small (1" high), lightweight (12 oz.) and utilizes Gillham Grey code in 100' resolution for optimum performance and accuracy. Features two RS232 outputs in 10 foot resolution, simplifying installations. All connectors are on the same side for easy mounting, and digital calibration eliminates analog drift. Altitude In-Flight Monitoring (AIM) mode alerts the pilot when he strays off altitude. Requires virtually no warm up time and uses very little power. Fully TSO'd and backed by factory 3 year warranty. Power: 11-33VDC. P/N 11-00665

Power: 11-33VDC. P/N 11-00665

ICARUS MODEL 3000U



The Icarus Model 3000U Altitude serializer connects to the existing Mode C encoder in the aircraft. It converts the gray-code into a decimal format and sends it to the GPS receiver using a serial connection. It will function with Trimble, Garmin 150, Northstar, and Apollo GPS receivers.

Features:

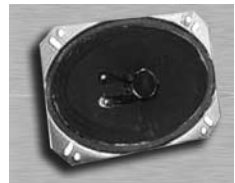
- Northstar has tested and approved the 3000U for use with its GPS receivers.
- Garmin has tested and approved the 3000U for use with its approach approved GPS receivers.
- Trimble Navigation has tested and approved the Model 3000U for use with its GPS aviation receivers.
- IIMorrow has tested and approved the Model 3000U for use with all of its GPS aviation receivers.
- Note: Please advise if transponder is a Narco AT-50 or 50A. or a Wilcox 1014.

Specifications:

- Weight: 5oz.
- Power requirements: 10 to 30 vdc at 20 ma. (must be fused)
- Size: 4.2" x 3" x 1"

P/N 11-04692

AIRCRAFT CABIN SPEAKERS



Engineered for 10,000 hrs. of performance, (minimum), these flame retardant speakers sound clearer and last longer. The magnet assemblies are heavier than original equipment, yet the overall speaker depth is only 2". The voice coils are heat-proof to withstand high power levels & the gaskets are treated with a moisture barrier, for unprecedented reliability.

| Part No. | Size & Description | Mag. Wt. (oz.) | Imp. (ohms) | Prog. Power (Watts) | Depth | Price |
|----------|--------------------|----------------|-------------|---------------------|--------|-------|
| 11-01569 | 5.25" P.C. | 5.5 | 3.2 | 7 | 2-1/8" | . |
| 11-04649 | 4x6 Oval | 4.8C | 3.2 | 10 | 1.550 | . |
| 11-04646 | 6.5" P.C. | 4.8C | 3.2 | 10 | 2.018 | . |

AV

MICROAIR – BECKER – APPROACH HUB



MICROAIR 760 COM REVISION P

Designed and manufactured in Australia, the Micro Air 760 VHF transceiver is ideal for aircraft requiring compact size and low power consumption. It has many of the features not found in radios costing much more and includes features not available in any other units. It's compatible with a variety of speaker & microphone combinations including all general aviation microphones. Standard model mounts in a standard 2-1/4" panel hole and weighs only 19.4 oz. It has been proven in high noise environments such as Rotax 2-stroke engines and is excellent for gliders, Ultralights, a general aviation aircraft. A unique LED multifunction annunciator located at the top right of the unit provides several alerts, and an external memory toggle switch allows remote control of the memory frequencies. Transmit output: 4W, Size: 2.56" x 2.44" x 7.779"d, 14V. Standard 2-1/4" model..... P/N 11-18700.....

Accessories:

- Gooseneck Mic. - Excellent for Gliders..... P/N 11-18705.....
- MS 70 Twin Glider Harness..... P/N 11-07113.....
- 760 Revision P 15 Pin harness..... P/N 11-06306.....



MICROAIR T2000 TRANSPONDER

The Microair Avionics T2000SFL Transponder is a mode 3A/C aircraft transponder designed to operate in an ATCRBS environment. The T2000SFL has been designed to meet RTCA/DO-144 requirements, and has been tested to DO-160D for environmental and EMC requirements.

The T2000SFL software has been developed and approved under RTCA/DO 178B requirements. The T2000SFL is a small lightweight transponder with low power requirements. The T2000SFL is compatible with any C88a compliant altitude encoder, and offers the following features: * Mode 3 A response (4096 codes) * Mode C altitude response * SPI indent response * Encoder Altitude displayed * Altitude Alert (HI / LO) * Voltage alter (OV / UV) * Security coding of serial number * Option to power encoder only in mode C operation.

| Description | Part No. | Price |
|------------------------------|----------|-------|
| T2000SFL Transponder | 11-00990 | . |
| Transponder Combo kit | 11-02866 | . |
| T2000WHK Wiring harness | 11-01361 | . |
| T2000 Coax Kit 2.5M | 11-02862 | . |
| T2000 Coax Kit JABIRU | 11-02863 | . |
| WORKS Combo kit | 11-02867 | . |
| DELUXE Combo kit | 11-02868 | . |
| Works Glider Single w/AK350 | 11-02873 | . |
| Works Glider Twin w/AK350 | 11-02874 | . |
| Works Glider Single w/EC2002 | 11-05080 | . |
| Works Glider Twin w/EC2002 | 11-05081 | . |
| Microphone MIC-45 | 11-02864 | . |
| SP01 Speaker Box | 11-02865 | . |



APPROACH SPORT HUB AVIONICS WIRING SYSTEMS

Simply install the appropriate Approach hub for your instrument panel (basic, VFR or IFR), select the appropriate Approach cables for your avionics, and plug it in and your done. Upgrading and replacing avionics only requires a new Approach cable and future

maintainability is greatly enhanced eliminating most hand writing and troubleshooting. All cabling is Milspec Tefzel and complies with FAA AC43-13B.

STEP 1: Select the appropriate Approach Hub for your instrument panel configuration.

Sport Life Hub for basic instrument panel configuration - The Sport Lite Hub Systems is an all-inclusive hub and cable solution enabling you to install a GPS/Com and intercom in record time and designed for pilots that don't require a full panel, just a single radio and intercom. Perfect for kit planes, sport-life planes, & aerobatic aircraft. P/N 11-01457.....

Sport Hub for VFR instrument panel configurations - The Sport Hub and Cable System is compatible with most NAV/GPS/Com (single & dual), modern audio panels, intercoms, moving map displays, VOR indicators and any other RS-232 formatted device. P/N 11-01458.....

Pro Hub for IFR instrument panel configurations - The Pro Hub and Cable system is designed for a full Garmin, Apollo, or King/Bendix stack. The Pro Hub system is compatible with most NAV/GPS/Com (single & dual), modern audio panels, auto pilots, intercoms, moving map displays, VOR indicators, HSI's, RMI's, ADF's, annunciators, mode control and any other RS-232 formatted device. P/N 11-01459.....

Pro G Hub for Garmin Stacks..... P/N 11-01893.....

STEP 2: Now choose the Approach cables for your specific avionics. Note that certain cables work only with certain Approach Hubs. Cables for the same avionics have different part number for different hubs. Call us if you do not see the cable require. Approach continually releases new cables. The Approach Sport Lite Hub is bundled with and only supports two Approach cables.



BECKER MODE S BXP-6403-2

Single block Mode-S transponder. Certified according to ETSO-2C112b and is suited for VFR and IFR operations up to 15000 feet. Extended squitter and SI code function and it provides an interface to the central aircraft data system. It allows ELS, supports EHS, as well as ADS-B via extended squitter. Designed for slide-in mounting and fits into a 160.3 x 41.28 mm cut out. The use of an adapter allows for retrofit in a KT 76 A tray. Panel inscriptions and sunlight readable display can be illuminated and dimmed for night operation. The display shows the actual settings. The transponder is prepared for the connection of blind encoders from different manufacturers. The encoder can be connected to the transponder by a serial or parallel interface. Supply voltage: 10.0 V to 33.0 V DC. Power-up time: 2 sec (internal self test). Operating modes: Mode A, Mode A+C, Mode S. Vibration resistance: Cat s. Curve M. Humidity: Cat. A/+50 degrees C. Weight: approx. 1kg.

| Description | Part No. | Price |
|---|----------|-------|
| Transponder with installation kit for retrofit of KT76A - for VFR installation type 175 watt power output | 11-06608 | . |
| Transponder with installation kit for retrofit of KT76A - for IFR installation type 250 watt power output | 11-06609 | . |
| Transponder with installation kit for new installation class 2 fr VFR install type 175 watt power output. | 11-06694 | . |
| Transponder with installation kit for new installation class 2 fr IFR install type 250 watt power output. | 11-06695 | . |

BECKER ATC 4401 TRANSPONDER

2 1/4" ATC 4401 has the same look and similar size as the successful transceiver AR4201. Outstanding performance combined with low power consumption is provided in 2 certified versions; ATC 4401-250 w/ min. 250W transmit power and ATC 4401-175 w/ min. 175W transmit power. Certified according JTSO & TSO regulations. The sunlight readable display is illuminated for night operations. The display shows in addition to the transponder code also the current flight level, if an encoding altimeter is connected and Mode-C is selected. It operates from 9.5 to 32.2v DC, suitable for almost every application in general aviation. A standard encoding altimeter or blind encoder can be connected.

- ATC 4401 (175W).....P/N 11-01094.....
- ATC 4401 (250W).....P/N 11-01095.....
- 1K4401 Harness.....P/N 11-07320.....



COMBO-175 (COMPACT COM+XPDR)

Includes AR 4201 & ATC 4401-175
P/N 11-01096.....

COMBO-250 (REMOTE COM+XPDR)

Includes CU5209 + RT3209-(11) + CU5401 + ATC3401-1-R P/N 11-01047.....



BECKER AR 4201 COM

Offers 760 channels and is intended for use in VFR and IFR equipped aircraft. It is ideal for installation in gliders, motor gliders and small single engine aircraft due to its limited power requirement and 57mm (2-1/4") round format. The equipment has an output of 5-7W. A standby frequency and 99 memories are available which can be easily programmed and recalled. Has intercom, panel lighting, voltage indicator, an AF input, automatic test routines, serial interface and optional temperature indication integrated.

- P/N 11-01566.....
- Outside Air Temp Sender.....P/N 11-02190.....



BECKER BXP6401-2-(01) MODE-S TRANSPONDER

Single block Mode-S transponder. It is certified according to ETSO-2C112a and is suited for VFR and IFR operations up to 15,000 feet. Equipped with extended squitter and SI code function and it provides an interface to the central aircraft data system. It allows ELS, supports EHS, as well as ADS-B via extended squitter.

- Designed for panel mounting and fits into a 2 1/4 inch cut out.
P/N 11-05326.....
- Becker 1K6401 Harness..... P/N 11-07192.....

PS ENGINEERING IFE - AUDIO PANELS



PAV 80 IFE SYSTEM

The PAV80 system incorporates AM/FM radio, CD/MP3/MP3Pro for music, plus the added dimension of DVD video. The PAV80 system is a panel mounted player unit, which contains the DVD mechanism, as well as the AM/FM radio. A 5.5" Liquid Crystal Display (LCD) video terminal provides full color pictures. Up to 4 displays can be driven, using an optional video distribution amplifier. Multi-tasking capability. When coupled to an audio control system, such as PMA7000B, the pilot & copilot can listen to the radio, while the DVD movie audio is provided to the passengers or visa versa. This feature gives the aircraft occupants unprecedented control over their audio entertainment. Music in front, movies in back, and a full intercom conversation, with aircraft radio muting of the entertainment as desired (with compatible system). By taking full advantage of the independent inputs designed into our audio panels, we have tailored the IFE outputs the way today's aircraft are used in cross-country travel. Designed specifically as a general aviation entertainment system by pilots for pilots, and incorporates the most asked-for features in an IFE system.

PAV 80 AM/FM/CD/MP3/DVD playerP/N 11-02221
 Video Distrib. Amp for PAV80-0100.....P/N 11-02550
 5.6" color LCD display for PAV80-0100.....P/N 11-02551
 P.S Remote IR Sensor For PAV80.....P/N 11-05157

PS ENGINEERING PCD 7100 STEREO INTERCOM/CD PLAYERS



PCD 7100 series, from PS Engineering, is an integrated Intercom and CD player designed specifically for aircraft installations. PCD7100 incorporates PS Engineering's

exclusive IntelliVox™, automating the digitally controlled intercom squelch. The PCD7100 has music and intercom volume controls for adjustment of the audio levels. The 5 back-lit CD push button controls that have LED mode annunciation are Play/Pause, Skip, Repeat, Stop & Eject. In ISO mode, the pilot hears only aircraft radio traffic, without music or intercom interruptions. In crew mode, the pilot and copilot hear the internal CD player and radio traffic. An automatic fail-safe feature (EMG) connects the pilot directly to the aircraft radios if power is removed from the PCD7100 for any reason. Both the pilot and copilot have transmit capability over the aircraft radios. In ALL mode, all intercom positions hear the aircraft radios and the CD Player, with PS Engineering's proprietary SoftMute™ circuit. Now available in either a standard CD player or it can now be ordered with the MP3 player option. Installation is the same, and the units look identical, the difference is the units that can play MP3 discs can have almost 20 hours of continuous music on a single disc using the MP3Pro format

PCD 7100-I w/Digital RecorderP/N 11-00540
 PCD 7100-P Hi-Fi Stereo Std. Rack width CD Player
 P/N 11-00541
 PCD 7100 - 6-PI Stereo IntelliVox w/MP3...P/N 11-01851

PS ENGINEERING PXE 7300 IFE SYSTEM



An inflight entertainment system specifically designed for general aviation airplanes. Can play CDs & MP3 recordings, and contains an AM/FM receiver. The PXE7300 is the first

we know of that is not an adaptation of automotive technology. Meets all of the FAA TSO standards to ensure no interference with other avionics, fits in the normal radio stack and plays through any standard aircraft audio control. Approved for installation under an STC. Has soft mute feature that lowers volume from the entertainment system for the pilots when a comm signal is received. Passengers hear uninterrupted entertainment. The CD drive is a sturdy unit designed for the aviation environment and plays only a single disk, but if you create your own MP3 disks, you can fit more than 250 songs on a single disk. The AM/FM receiver is designed & certified to not interfere with the VOR/LOC frequencies, not an easy task for FM, and has special logic that helps it discriminate between broadcast signals on the same frequency. At altitude, AM/FM radio receives competing broadcast signals because frequencies are assigned based on the receiver being on the ground. The PXE7300 identifies the strongest signal and rejects any others on the same frequency, so you hear only one radio station at a time. No external antenna required. A thin "strip" antenna can be mounted inside any cabin window, where it is out of the way and probably out of view while still providing excellent AM/FM reception.

P/N 11-01767

MB 10 MARKER BEACON RECEIVER



The MB10-is a 3-light 75 MHz Marker Beacon receiver and indicator. This provides the necessary Marker Beacon lights and audio indications necessary for an Instrument Landing System (ILS) approach. A switch labeled Hi/Lo/TST allows the pilot select high or low sensitivity as well as test and mute modes. P/N 11-05621

PS ENGINEERING PMA 6000 AUDIO PANEL / INTERCOMS



The PMA6000 combines an audio selector panel with a top-quality intercom and a slew of features to enhance versatility and utility. Among the high

points: * Designed to be pin-compatible with the popular Bendix/King KMA-24 audio selector panel, the PMA6000 takes advantage of existing wiring to smooth installation. * Built-in 6 place mono intercom provides synergistic capabilities. The PMA6000 has a built-in marker beacon receiver. * Split mode allows the pilot and copilot to independently and simultaneously use both radios, even transmitting simultaneously on different frequencies. * Pilot and crew/passenger isolate functions are an integral part of the design. * Dual music input jacks for passengers and crew are standard feature. * Independent volume and squelch controls for pilot and copilot are standard. * PSE's renowned Soft Mute technology gently and subtly ramps the music down when conversation comes across either the intercom or the radio. * A patented "swap" function (Patent #5,903,227) allows pilots to use a yoke-mounted switch to select Com 1 and Com 2 options without reaching for the panel. * High quality, voice-activated circuitry and individual microphone channels form the heart of the intercom system. * Passengers have their own voice and audio amplifiers. * Backlit switches linked with a photo sensor carefully calibrates panel lighting to cockpit levels for all situations. * Fail-safe feature automatically hard-wires the pilot to Com1 in the case of an outage. A Digital Recorder is available as an option. This continuous loop digital recorder stores all aircraft radio activity on the selected transmit radio. Up to 1 minute/16 messages are stored.

PMA 6000 Audio Panel..... P/N 11-11937
 PMA6000MC Audio Panel w/ Marker Beacon... P/N 11-01083
 Option 1 Digital recorder P/N 11-02543

Call For Special Prices!

PMA 7000B/7000H AUDIO PANEL



Lends itself nicely for upgrading an existing Bendix/King KMA24 audio panel. KMA24 pin compatible. None of the existing wires going to the

KMA24 have to be disturb, thus reducing the amount of installation. With our renown 6-place IntelliVox® automatic Voice Operated Relay (VOX) intercom system, adjusting a squelch circuit is a thing of the past. No more clipping or missed syllables. Provides 3-com capability with the option to easily convert Com 3 to a full duplex cellular telephone interface. Also has the pioneered "Split Mode". Allows the pilot to be on Com 1 while the copilot is on Com 2. Also expandable to accommodate up to 12 places (10 passengers) with the addition of the 11606 IntelliPax. Has four un-switched and un-muted inputs. This adds flexibility when installed with today's advanced warning systems.

Having all of the capabilities of the popular PMA7000B, the **PMA7000H** adds 3 more passenger positions (total of 7 passengers with Pilot and Copilot seats), Cockpit Voice Recorder (CVR) output, and Push-To-Talk Intercom (PTT-ICS) function. (better known as Hot-Mic)

PMA7000B Audio Panel..... P/N 11-01635
 6 Place expansion for 7000..... P/N 11-02544
 Option 1 Digital Recorder..... P/N 11-09052
 7000CD MP3 Audio Panel w/CD and MP3... P/N 11-01850
 7000CD Audio Pnl CD/MP3/Marker Beacon.. P/N 11-02545
 Option 1 7000CD with Digital Recorder P/N 11-02546

PAC 24 AUDIO PANEL/INTERCOM



Designed from the outset as an upgrade/replacement for the popular KMA24 -71.

Many of the enhancements include; a powerful headset audio amplifier, and high-performance IntelliVox® intercom, dual audio capability in a single box, full duplex mode for wireless operations, and expansion capability with stereo IFE input. Can accommodate 5 transceivers. A monaural system, the PAC24 can include a music input. SoftMute™ silences music during radio traffic, but allows music other times. Incorporates a split mode that will allow a single audio panel to separate two pilots on different transceivers. When combined with IntelliPax® expansion system, the dual PAC24 can be a 14-place system. The audio amplifier is capable of providing 120 milliwatts (mW) into general aviation headphones.

Horizontal Mounting P/N 11-01293
 Vertical Mounting..... P/N 11-05507

PS ENGINEERING ACCESSORIES

PS Engineering cellphone cable. P/N 11-04376
 PS Engineering music cable P/N 11-04377
 Digital Recorder Aural Warning System w/ 4 unswitched inputs
 P/N 11-05158
 FM Radio Adapter (allows interfacing of non-standard aviation radios)
 P/N 11-05159
 4 Channel Summing Amplifier..... P/N 11-05160

AV

PS ENGINEERING AUDIO PANELS — VAL COM



PMA9000EX AUDIO PANEL

Built with the "Wish List from the Homebuilder" the PMA9000EX brings to the cockpit more capability than any other audio panel. The backlit Liquid Crystal Graphics Display. At a glance see what radios are selected, titles of songs, and message alerts. A host of audio panel configurations can be changed with a twist of the Rotary Data Knob. Front panel utility jack acts as an iPod input, telephone input, or USB port for the onboard MP3 player. This USB port allows the crew and passengers to download music from a memory stick, providing hours of continuous music listening. Bluetooth® interface eliminates the wire clutter that used to be necessary to connect telephones. 5 different ways that any two of the three music inputs can be distributed. None of the capabilities of the PMA8000B have been lost. It too is plug and play with the GARMIN GMA340. 9000EX Audio Panel..... P/N 11-05587.....



PMA 8000B AUDIO PANEL

Front-mounted, 2.5mm multipurpose jack give pilots unprecedented access to their audio panel, allowing connections to cell phones, portable music devices, or audio announcements directly into the audio panel. 6 user configurations that are front panel selectable. When used as an entertainment input, the music is directed to the crew, and PS Engineering's patented SoftMute™ functions normally. Our original Karaoke Mode™ can be activated by pressing the front panel "Mute" button, allowing the music to be placed in the background while interruptions to the music will be eliminated. However, if the aircraft has a panel mounted music device and it is active, it changes the front jack for advisory messages. These alert messages are not muted, and presented to the crew headphones only. Also is a convenient way to connect your cellular telephone. Pilot can receive and transmit on the selected VHF COM with ATC as well, for seamless integration in the cockpit. (Cellular telephone use in flight is not permitted, but remains a convenient and safe way to contact air-traffic control or a weather briefer while on the ground.) Virtual Tech Support (VTS) voice prompts each special function selection assuring that the pilot knows exactly what the new audio panel configuration is, in plain English. Six different configurations can be selected from the front panel. Internal Recording System (IRS) is now standard equipment. Backward compatible with the PMA8000. Note: Use of the front panel jack is restricted to advisory information only, from portable systems. Signals required for certified equipment must be interface in accordance with their specific installation manuals.

PMA8000B Audio Panel..... P/N 11-04354.....
 PMA8000B-MP3 - PMA8000B with an internal MP3 player with 1GB of music storage..... P/N 11-06612.....
 Music Cable..... P/N 11-04377.....
 Cell Phone Cable..... P/N 11-04376.....



PMA 8000-SR AUDIO PANEL

An audio selector panel for two VHF coms (including our split mode), a dedicated cellular telephone interface, a 6-place IntelliVox® stereo intercom with dual independent music inputs, and an internal marker beacon receiver with 3-light indicator. True plug-and-play replacement for the GARMIN GMA340. Patented IntelliVox® automatic intercom squelch system eliminates all of the traditional knobs or push buttons. Using digital processing, the system determines if the microphone is picking up voice, or aircraft noise. It opens instantly when voice is detected. This makes conversations seamless, even in a noisy aircraft. Karaoke mode, allowing the music to play continuously without constant interruptions.

TEL mode allows the pilot to access a hands free cellular telephone, where appropriate, through the audio panel and headset. Various front panel intercom configurations allow anyone in the aircraft to be placed on the cell phone, while the crew also remains connected to the communications radios. Configurable music inputs as well, allowing the pilot to tailor who hears what when. So with the addition of the PAV80 or PXE7300, the added dimension of DVD or MP3 can be easily added. NOTE: When flying near around highly populated cities, signal drop may occur due to ground based repeater interference.

Audio Panel PMA8000-SR Without Recorder P/N 11-02982
 Audio PMA8000-SR With Recorder..... P/N 11-03002
 Recorder for the PMA8000-SR Audio Panel P/N 11-06999

PS Engineering audio panels and intercoms can be sold over the counter buy must have a PS Engineering dealer make the harness or the warranty on the unit is void. Harnesses can be ordered from PS Engineering direct or when ordering from Aircraft Spruce.



AP 100 AUDIO PANEL

Satisfies the need for the convenience of a fully functioning quality audio panel that can be counted on to provide years of reliable service. Non-TSO'd (for experimental

aircraft only. Features: •COM 1, COM 2 transmit select. •NAV 1, NAV 2 audio switching and amplified speaker output. •Marker audio mute reset and active mic key indicator. •Four unswitched audio inputs for the full IFR panels. •Fail-safe feature that connects the pilot's mic and headset to COM 1 when the unit is powered down. •Slim size, only one inch vertical space. •TSO March 2007 Specifications: •Physical Dimensions: 1' x 6.25" x 6" •Weight: 2 lbs •Mounting: Panel-mounted. No shock mounting required. •Power Requirements: 12VDC, 0.5A max. P/N 11-04768

VAL AVIONICS NAV INS 429



The NEW INS 429 is a high quality, multi-function, fully integrated navigational instrument. Not only does it sport its own internal receivers, it will also display course deviation information from an external NAV or GPS source. A perfect solution for a crowded panel. P/N 11-05592.....

VAL AVIONICS COM 2000 VHF TRANSCEIVER



The COM 2000 is the smallest panel mounted COM radio available. Turning back to a more traditional design, it features dual concentric knob controls, displayed active and standby frequency with push button flip-flop and manual squelch control. 3/8" character display is easy to read from any angle and any lighting. P/N 11-06411

VAL INS 422 VOR/LOC/GS/MB



The INS 422 is a high quality, multi-function, fully integrated navigational instrument designed as a complete, stand-alone unit, supplying 4 basic navigational aids: VOR w/digital course select, Automatic Radial "TO" Centering feature, Localizer, Glideslope, and Three Light Marker. The units digital display well define the CDI indications. CDI output data is also available at the rear connector for easy interface with most Autopilots.

Aluminum construction offers a lightweight yet very durable unit, which will provide years of reliable service. This instrument mounts in a standard round 3.125 inch mounting hole.

Automatic Radial Centering: To determine the bearing TO a VOR station with conventional course indicators, it is necessary to manually rotate the OBS to center the course deviation pointer. With the Automatic Radial Centering feature provided on the INS 422 system, this is done automatically when the external momentary button is pushed.

Pushing the remote automatic radial centering button enables circuitry to automatically position the digital CDI indication to provide a one-time radial "TO" the VOR station. The digital indications displayed on the CDI will then return to conventional operation, permitting the radial to be flown in a conventional manner. TSO'd P/N 11-01040.....

VAL INTERCOM



Val Avionics 801010 intercom is a two-position push-to-talk intercom system designed to operate exclusively with the Val COM 760 radio. It is ideally suited for noisy environment aircraft applications where traditional VOX system operations are diminished. P/N 11-02964

VAL VOLTAGE CONVERTER



This unit is a step down voltage converter that drops 28 volts DC down to 13.8 volts DC. This unit would be required to operate either our COM 760 TSO or INS 422 TSO units in an aircraft or vehicle that are 28 volts DC. P/N 11-02963

AV

IN-FLIGHT CABIN ENTERTAINMENT SYSTEMS



AVIONICS INNOVATIONS AICD III AM/FM/CD/MP3 PLAYER

The AICD III is the latest way to listen to your favorite CD/MP3 or radio station in flight. Designed for aviation & has an attractive brushed aluminum bezel to enhance your instrument panel. Comes with easy install kit to mount directly into your instrument panel.

Features: * FAA/PMA Approved * 24 Station Presets * Automatic Frequency Store * Seek Up/Down Tuning * Electronically Controlled Volume/ * Bass/Treble/Balance * 11-33 Volts DC * 6.25 x 2 x 9.25 Inches * Weighs 3.5 Pounds * Can be connected to "Sirius" Satellite Receiver or AI-8 Changer * Aux. input for an mp3 player * Remote Control
AICDIII AM/FM CD/MP3/WMA US..... P/N 11-05151.....
AICDIII A/FM CD/MP3/WMA EURO P/N 11-05150.....

AVIONICS INNOVATIONS DMP-100



This Digital Media Player is a self-contained unit which stores and replays pre-recorded audio tracks. The audio tracks are encoded in "Motion Picture Expert Group (MPEG) Level 3 format", commonly referred to as MP3. Audio files are stored in a

removable Compact Flash™ memory card which is prepared and installed by the user. **Features:** * Self-contained unit which stores and replays MP3 music and speech files. * MP3 files are stored on a standard Compact Flash card. * MP3 play lists (iPod) can be imported. * One MB = one minute of speech or, music. Currently, Compact Flash cards are available up to 4gb. * Up to sixteen languages can be programmed with the ability to play two different languages simultaneously. * The DMP-100 can be implemented as a cabin briefer. * Audio files can be selected via a single rotary push-button on the front panel. * Optionally, the DMP-100 can be connected to a maximum of seven external discrete trigger inputs to select a particular audio/speech file. * In addition, the RS232 data from a GPS can be connected to the DMP-100 allowing triggering of audio / speech files based on geographical position. * The DMP-100 provides a single pair of ground-referenced stereo line-level output signals. * User programmable with Avionics Innovations' exclusive Card-Prep software supplied with the DMP-100. **Benefits:** * Hours of continuous music and or speech files can be stored on a convenient Compact Flash card. * No more changing and maintaining of CD's. * Can be used for entertainment and or cabin briefing. * Single rotary knob with a push-button action for all front panel functions. * MP3 play lists (iPod) can be imported. * User programmable. * GPS can be connected to the DMP-100 to trigger either speech or music automatically when the aircraft is within a specific distance of a certain waypoint. * FAA/PMA approved. DO-160D tested. **Specifications:** * Power source: 11-33 Volts DC * Ground System: Negative * Current Draw: < 250 mA * Audio Output: Stereo line-level * Dimensions: 5.75" W x 1.875" H x 3.5" D * Mounting Type:Dzus-Rail Mount (adapter available for 6.25" racks) * Weight: 15 oz

AI DMP-100 MP3 Player..... P/N 11-03608.....
AI DMP-100NVG P/N 11-07253.....

AI - AV VIDEO SWITCH SYSTEM



This new Cabin Class System will allow you to switch between 4 video & 6 audio sources simultaneously from up to 8 seat stations. **Features:** • 4 video (composite) inputs • 6 audio inputs (adjustable input levels)

• PA override • Up to 8 passenger control stations • Separate volume control at each station • Listen or view any source from any station • Activate an external amplifier • Custom plating available.

4 Seats.....P/N 11-01174
6 Seats.....P/N 11-01175
8 Seats.....P/N 11-01176

AVIONICS INNOVATIONS CD 8 DISC CHANGER



• 11-33 VDC • Horizontal Or Vertical Mounting
• 9x2.75x6.25 Changer • 4lbs

P/N 11-07254

AI-DVD / 8 DISC CHANGER



The AI-DVD AM/FM Stereo & Disc Changer System allows you to view DVD movies or listen to your favorite CDs or radio station.

Features: • DVD audio, DVD video video CD & music playback • Anti-shock memory • Floating mechanism • Front & rear program capability • 5V high voltage preamp outputs • 18 FM and 6 AM presets • Full function remote control • Auxiliary input

AI-DVD / 8 Disc ChangerP/N 11-01173

AI - AMPLIFIER



The AI-Amplifier is the perfect companion to all our entertainment products. Enjoy your favorite music without the extra weight and confinement of headphones. Specifications: * FAA/PMA Approved * 20 Watts Per Channel Maximum * Low Distortion

* 28 Volt * 2 Channel Output * 5.75 X 5 X 2 Inches

* Weighs 1.5 Pounds. 28V P/N 11-19504

AI - DVD/CD PLAYER



Remote mounted multi-regional DVD drive which allows you to view DVDs from any region around the world. The unit also is a CD/MP3 player.

Requires PCU (Passenger Control Unit) for operation. PN 11-04495

Specifications: * Operating Voltage: 11-33 VDC * Current Draw: 0.2 Amps * Antenna: Externally mounted (included) * Weight: 1.2

lbs. * Dimensions: 6.25"(L)x5"(W)x1.25"(H)
P/N 11-04496

AI-PASSENGER CONTROL UNIT



Passenger Control Unit with IR remote. Controls remote-mounted "I.C.E." components. Sirius® Satellite Radio. DVD/CD, or MP3 player. Two distinct channels allow some passengers to receive one source while others receive a second source. Specifications: *

Operating Voltage: 11-33 VDC * Current Draw: 0.2 Amps * Weight: 0.75 lbs. * Dimensions: 125"(L)x5.5"(W)x2.00"(H)

P/N 11-04495

AVIONICS INNOVATIONS 10, 12, 15 INCH LCD SCREEN



10", 12", 15" TFT active-matrix LC flat-panel display. Panel mount only. FAA/PMA Approved Extra-Wide Viewing Angle High-Intensity Backlight Drawn-Aluminum Enclosure Rounded Safety Corners Seek Up/Down Tuning NTSC Input Signal 1500 NIT 28 Volts DC

| Description | Part Number | Price |
|---|-------------|-------|
| AI 10" Flat Panel Display | 11-07255 | . |
| AI 10" Flat Panel Display Flip Down Display | 11-07258 | . |
| AI 12" Flat Panel Display | 11-07256 | . |
| AI 15" Flat Panel Display | 11-04509 | . |

AI - 7" WIDE SCREEN



7" wide-screen format with optional touch screen Specifications: * Input Signals: 1 VGA and 2 NTSC * Resolution: 800 x 600 * Viewing Angles: (right/left/above/below)65/65/40/65 * Brightness: 1500 NIT * Operating Voltage: 18-33 VDC @ 750 mA * Weight: 2.5 lbs. * Dimensions: 5"(H) x7"(W)x1.5"(D) * Mounting: Bulkhead, headrest, or articulating arm

StandardP/N 11-04499
With ArmP/N 11-04502

AI - SATELLITE RADIO MODULE



Remote mounted Sirius® Satellite Radio module with antenna. 120 streams of coast-to-coast digital quality sound including NFL and NASCAR (available 2007). Specifications: *

Operating Voltage: 11-33 VDC * Current Draw: 0.2 Amps * Antenna: Externally Mounted (included) * Weight: 1.2 lbs. * Dimensions: 6.25"(L)x5"(W)x1.25"(H)

P/N 11-04497

AI - VIDEO AMP



Remote mounted video amp with 2 video inputs & 6 video outputs. 6 individual 12 VDC power supplies at 0.75 amps each. Specifications: * Operating voltage: 18-33 VDC * Current Draw: 2.5 Amps * Wt: 1.0 lbs. * Dims: 6.25"(L)x2"(W)x1.75"(H)

P/N 11-04498

AV

RADIORAX - TRAFFIC ALERT SYSTEMS



RADIORAX THE REVOLUTIONARY AVIONICS RACK SYSTEM

Radiator provides flexibility and ease of installation for panel mount avionics. The radiator system consists of anodized slotted rails, stainless nuts, structural strength tray screws that are four times stronger than conventional screws used in aviation, and a stainless capture system that holds each nut where it is needed during assembly. The installer is able to position the nuts in the slot exactly where they are required to install each tray. Once installed, the trays can be easily moved until the screws are fully tightened. Additional nuts can be stored in the

slots for future avionics additions. RadioRax provides great strength, ease-of-alignment, easy change and modification, enhanced quality, owner satisfaction, and is very cost effective.

| Description | Part No. | Price |
|---|----------|-------|
| Radiator Kit 1010-8 for Exp. A/C | 11-01376 | . |
| RK1000 Single Stack STC Kit-Standard Rail | 11-01855 | . |
| RK1010 Single Stack Kit-STC for Exp. A/C | 11-01856 | . |
| RK1020 Single Stack STC Kit-STC Exp. A/C | 11-01858 | . |
| RK1030 Single Stack STC Kit Cirrus/Lancair | 11-01860 | . |
| RK2000 Dual Stack STC Kit | 11-01862 | . |
| RK3000 Triple Stack STC Kit | 11-01864 | . |
| Single Rail - Special Order | 11-01866 | . |
| RX100 Tray Tool Kit | 11-01867 | . |
| RK1005 Cessna Kit | 11-02308 | . |
| RK1040 Single Stack | 11-02309 | . |
| RK2010 Kit -18" dual stack, flange, FAA-PMA, STC'd | 11-02608 | . |
| RK2015 Kit - 18" dual stack, flanged outer, FAA-PMA, STC'd | 11-02609 | . |
| RK2020 Kit -18" dual stack, reduced outer, FAA-PMA, STC'd | 11-02610 | . |
| RK2025 Kit -18" dual stack, reduced outer, FAA-PMA, STC'd | 11-02611 | . |
| RK3010 Kit - 18.0" triple stack, flanged outer + Full Dim. Center Rail Tray Mount Kit - FAA-PMA, STC'd | 11-02612 | . |
| RK3015 Kit - 18.0" triple stack, flanged outer+reduced dim. Center Rail Tray Mount Kit - FAA-PMA, STC'd | 11-02613 | . |
| RK3020 Kit - 18.0" triple stack, flanged outer + Full Dim. Center Rail Tray Mount Kit - FAA-PMA, STC'd | 11-02614 | . |
| RK3025 Kit -18.0" triple stack, reduced outer+reduced dim. Center Rail Tray Mount Kit - FAA-PMA, STC'd | 11-02615 | . |
| RK4000-12 Kit - Standard Closeout Panel - Chem Film - 12" Kit - FAA-PMA, STC'd | 11-02616 | . |
| RK4000 - 12A Kit - Standard Closeout Panel - Black Anodized - 12" Kit - FAA-PMA, STC'd | 11-02617 | . |

AV

PROXALERT R5 - COLLISION AVOIDANCE SYSTEM



The R5 is a passive collision avoidance system. It detects transponder replies of aircraft flying in your vicinity and displays simultaneously both squawk code, altitude, vertical trend and estimated distance

of the 3 closest threats. The R5 will increase your ability to visually locate threat aircraft and better apply the FAA 'See and Avoid' concept. The R5 has been designed to be very robust against interference coming from DME equipment and other sources of disturbance. Offers significant operational improvements over previous generation products at a very attractive price. The R5 comes with a 3 year manufacturer warranty. P/N 11-02782.....

ZAON BOSE HEADSET AUDIO ADAPTER



This custom audio cable is 100% compatible with all Bose 6-pin connector headsets, including noise reduction circuitry, and is stereo compatible. One simple cable is all you need! Replaces standard headset audio cable. 6-foot straight cable into Y. P/N 11-04525.....

MONROY ATD-300 AIR TRAFFIC ALERT



The Monroy ATD-300 provides that continuous traffic awareness in a compact size. Detects all transponder type replies from nearby traffic and displays their proximity and their altitude on a bright 8-character dot matrix display. Simultaneously, a clear female voice provides voice alerts in relation to traffic proximity. It even has a test mode to verify onboard transponder operation. All of this and more in the size of an aluminum box (2.75" w x 0.75" h x 5" d) no bigger than your intercom. With the Plug N' Fly feature you just plug the ATD-300 into the cigarette lighter (for power) and the aircraft headphone jack (for voice feedback) and you are ready to fly. No panel space or installation is required. Velcro and mounting brackets are provided for location on top or bottom of the instrument panel and in the panel. The unit comes with a detachable antenna, cigarette lighter power cord, and headphone cable for Plug N' Fly setup. The ATD-300 Traffic-Watch provides multiple capabilities that enhance the safety of flight, such as: • Traffic Range up to 5nm • High/Low Voltage alarm • Traffic MSL Altitude • Auto Mode Display • Voltage Indication • ATD-200 Interchangeable • Traffic relative altitude readout • Host transponder altitude/code readout • Bright LED 8 character dot matrix display Specifications: Weight: 10 oz.; Frequency: 1090 MHz; Max Range: 5nm. P/N 11-02449.....

ZAON XRX ONYX COLLISION AVOIDANCE SYSTEM



Traffic awareness is everyone's concern, but so has been the cost of traffic systems, until now. PCAS XRX-ONYX is the first ever portable, passive, stand-alone collision avoidance system for general aviation to offer direction from within the cockpit. PCAS™, or Portable Collision Avoidance System, is Zaon's solution for providing high-quality, low cost traffic information to the general aviation pilot. XRX-ONYX is our flagship model, providing a complete picture in a simple, easy-to-use device. PCAS represents our third generation of proven traffic detection technology. XRX-ONYX is truly a "Plug and Go" device with its built-in antenna system and built-in display.

XRX-ONYX ONYX UPGRADED SYSTEM

The new XRX-ONYX, is an upgraded version of the current XRX--A system. The differences include: * The code for the new product is **XRX-O-A** * Improved housing in a new black color (Tough-as-nails polycarbonate housing is semi-transparent and attractive) * Software Version 2.1 contains: Minor user interface enhancements, Forward compatibility with integrated systems.

An industry first, XRX-ONYX detects threat aircraft direction from within your cockpit using a cutting-edge, proprietary, self-contained antenna design. With direction, locating and identifying traffic is simple and easy, and traffic information is "three-dimensional", which means it can be displayed on third-party systems, such as moving map GPS devices. Read more about this below. P/N 11-06504.....

XRX BARE WIRE POWER/DATA CABLE - Get XRX Traffic hard wired into your third-party moving map system. Provides hook-up for both the data port (DB9) and the power jack on the XRX. The other end of the 68" cable has tined leads ready for hook-up directly to your third party system. Uses a single lightweight cable for both power and data transmission. P/N 11-06243.....

ZAON MRX COLLISION AVOIDANCE SYSTEM



PCAS MRX is the world's smallest collision avoidance device, yet sacrifices none of the features previous upper-end systems have become known for. MRX displays range and relative altitude of the closest threat, with continuous monitoring of the top 10 threats within the 5 NM scalable detection window. Altitude detection is scalable up to +/- 5000 ft. At 2.5" (65mm) W x 4.2" (107mm) D x 0.6" (17mm) H, MRX is smaller than a deck of cards. MRX uses an easy menu-driven interface and audio annunciations for traffic advisories and alerts. The unit boasts a built in solid-state altimeter for "always relative" altitude information, and built-in temperature compensators and overtemp protection. Information is displayed on the high-brightness LED display (dim-able). MRX also monitors aircraft bus voltage and host transponder output. The unit is powered by aircraft power (12-40 VDC adapter included) or 2 "AA" Batteries (with 8+ hours of use). MRX is half the size, 1/3 less price, portable and offers better accuracy and many more features than the ATD-300. P/N 11-05223.....

| Zaon Accessories | Part no. | Price |
|--------------------------------------|----------|-------|
| Zaon MRX Antenna Extender | 11-04518 | . |
| Zaon Small Battery Pack | 11-04520 | . |
| Zaon International Converter | 11-04522 | . |
| Zaon Home and Auto Charger | 11-04524 | . |
| Zaon Bose Headset Audio Adapter | 11-04525 | . |
| Zaon Helicopter U174 Audio Adapter | 11-04526 | . |
| Zaon XRX Interface Cable | 11-05267 | . |
| Zaon XPD-X Wire / Power / Data Cable | 11-06243 | . |
| Zaon Battery Pack Z60-W | 11-07027 | . |
| Zaon Medium Battery Z60-W | 11-07046 | . |
| Zaon MRX Installation Hardware Kit | 11-07043 | . |
| Zaon GPSMAP 696 Interface Cable | 11-07107 | . |

R-A-M MOUNTING SYSTEMS



RAM is the revolutionary universal ball and socket mounting system that allows you to mount practically anything anywhere. The new yoke / glareshield mounting system gives the pilot an option of positioning the arm over or under the yoke or anywhere on the glare shield. RAM is backed by NPI's renowned Lifetime warranty and is the only patented ball-and-socket system on the market.

STEP 1

The First Step to finding a RAM Mount is to select a location for a base unit. RAM mounts for aviation can attach to yokes, glare-shields, flat surfaces, wind screens, and seat rails. There is a RAM solution for almost any application you can imagine.



STEP 1: BASES

RAM-B-224-1
SUCTION CUP



RAP-B-121B
YOKE/GLARE
SHIELD CLAMP



RAM-B-202
FLAT SURFACE/PANEL BASE



RAP-333-224-1
DUAL SUCTION CUP



RAM-B-238
SMALL FLAT
SURFACE BASE



| Model No. | Description | Requires | Part No. | Prices |
|---------------|---|-------------------|----------|--------|
| RAM-B-224-1 | RAM 3.3" Dia Suction Cup w/Ball | RAM-B-201 Series | 11-06449 | . |
| RAP-B-121B | RAM Universal Clamp w/Ball | RAM-B-201 Series | 11-05866 | . |
| RAM-B-202 | RAM Round Base w/Ball | RAM-B-201 Series | 11-07069 | . |
| RAP-333-224-1 | RAM Triple Base w/Dual Suction Cups | RAM-B-202 & B-201 | 11-05242 | . |
| RAM-B-238 | RAM Diamond Base w/Ball | RAM-B-201 Series | 11-00471 | . |
| RAM-BM-L1-SB | RAM Leg Strap W/Snap Link Mount | Holder | 11-06484 | . |
| RAP-SB-178 | Flex Stick on Base W/Snap Link Mount | Holder | 11-06453 | . |
| RAM-B-231Z | RAM Rail Base w/ball & Zinc U-bolt | RAM-B-201 Series | 11-03460 | . |
| RAM-B-131B | RAM Aircraft Seat Rail Base (Cessna) | RAM-PF-585 Series | 11-01121 | . |
| RAM-B-316-1 | RAM POD 1 w/ 1" Single Socket Arm | RAM-B-202 | 11-06428 | . |
| RAM-B-232-0 | RAM 2 1/2" Dia Base w/1/4"NPT hole 0 DG | RAM-PF-585 Series | 11-02085 | . |
| RAM-B-232-45 | RAM 2 1/2" Dia Base w/1/4"NPT hole 45D | RAM-PF-585 Series | 11-04088 | . |
| RAM-B-232-90 | RAM 2 1/2" Dia Base w/1/4"NPT hole 90D | RAM-PF-585 Series | 10-00482 | . |
| RAM-B-241 | RAM Rail base w/ 1/4" NPT hole | RAM-PF-585 Series | 11-00470 | . |



STEP 2: ARMS



| Model No. | Description | Requires | Part No. | Prices |
|---------------|-----------------------------------|---------------------------|----------|--------|
| RAM-B-201-A | RAM Double Socket Short Arm | RAM-B-202 or B-238 | 11-03458 | . |
| RAM-B-201 | RAM Double Socket Med. Arm | RAM-B-202 or B-238 | 11-01255 | . |
| RAM-B-201 | RAM Double Socket Long Arm | RAM-B-202 or B-238 | 11-07069 | . |
| RAM-PF-585-6 | RAM 6" Flex Arm w/1/4" NPT ends | RAM-B-232 Series or B-241 | 11-02037 | . |
| RAM-PF-585-9 | RAM 9" Flex Arm w/1/4" NPT ends | RAM-B-232 Series or B-241 | 11-03463 | . |
| RAM-PF-585-12 | RAM 12" Flex Arm w/ 1/4" NPT ends | RAM-B-232 Series or B-241 | 11-03462 | . |

ACCESSORIES / MISC. MOUNTS

| Model No. | Description | Requires | Part No. | Prices |
|-------------|---|---------------------------|----------|--------|
| RAP-326 | Quick Release Kit | RAM-B-201 Series | 11-06481 | . |
| RAM-MAG-1 | Magnifying Glass for GPS | RAM-B-238U | 11-04299 | . |
| RAM-KNOB3L | Know w/Keyed Lock & 1/4"-20 Brass Hole | RAM-B-201 Series | 11-05492 | . |
| RAP-B-121BB | Extra Ball for RAP-B-121B Yoke Clamp | Extra Ball for RAP-B-121B | 11-06447 | . |
| RAM-B-200-1 | Single Ball Socket Arm for 1" Balls | RAM-PF-585 Series | 11-03461 | . |
| RAM-B-218-1 | RAM Ball W/ 1/4" NPT. Hole | RAM-PF-585 Series | 10-00477 | . |
| RAM-B-108B | RAM V Base Ball & Straps For 1/2"-2" Dia. Rail also works on GPSMAP 696 | RAM-B-201 Series | 11-02003 | . |

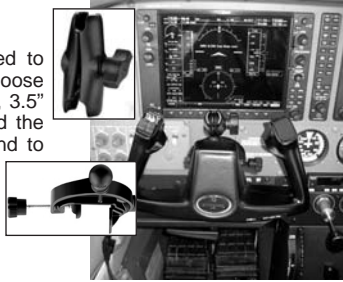


AV

R-A-M MOUNTING SYSTEMS

STEP 2

Once you have a base secured to your aircraft, the 2nd step is to choose a double socket arms are 1.75", 3.5" and 5.25" long (ball to ball) and the flex arms are 6", 9" and 12" end to end.



STEP 3

The 3rd step is to attach the cradle for your device. Most of the cradles will require a 1" ball base that attaches to the cradle to connect with the double socket arm (RAM-B_202 or RAM-B-238).



BASES

RAM-BM-L1-SB
LEG STRAP W/ SNAP LINK MOUNT
Does not include cradle. Sold Separately

RAP-SB-178
FLEX STICK ON BASE

RAM-B-231Z
RAIL BASE
1/2"-1 1/4" Dia. Rail

RA-B-131B
AIRCRAFT SEAT RAIL BASE
Use PF-585 Series Flex Arms to Extend

RAM-B-316-1
RAM POD 1 - ALUMINUM RIGID ROD



STEP 3: HOLDERS



**REMOVABLE BALL
RAP-B-121BB**



**NEW COMBINATION YOKE - GLARE SHIELD
CLAMP - RAP-B-121B**

RAM-B-202A



+



RAM-B-201-A

+



RAM-B-121BB

+



RAM-B-121B

+

RAM-HOL-GA7



+

RAM-B-238



+

RAM-B-201



| Model No. | Description | Requires | Part No. | Prices |
|----------------|---|-----------|----------|--------|
| RAM-HOL-AP1 | RAM Holder for Apple i-Pod | RAM-B-238 | 11-05495 | . |
| RAM-HOL-AP2 | RAM Holder for Apple i-Pod Nano | RAM-B-238 | 11-06430 | . |
| RAM-HOL-AP3 | RAM Holder for Apple iPhone | RAM-B-238 | 11-06431 | . |
| RAM-HOL-AP4 | RAM Holder for Apple i-Pod Touch | RAM-B-238 | 11-06432 | . |
| RAM-HOL-AP5 | RAM Holder for Apple i-Pod Nano Touch | RAM-B-238 | 11-06433 | . |
| RAM-HOL-BC1 | RAM Holder for Electronics with Belt Clip | RAM-B-238 | 11-01917 | . |
| RAM-HOL-GA2 | RAM Holder Garmin GPS II & III Series | RAM-B-238 | 11-01920 | . |
| RAM-HOL-GA5 | RAM Holder Garmin E-Trex | RAM-B-238 | 11-01923 | . |
| RAM-HOL-GA6 | RAM Holder Garmin GPS 76 Series | RAM-B-238 | 11-01924 | . |
| RAM-HOL-GA7 | RAM Holder Garmin GPSMAP 176. | RAM-B-238 | 11-01925 | . |
| RAM-HOL-GA14 | RAM Holder Garmin 76C SERIES | RAM-B-238 | 11-06477 | . |
| RAM-HOL-GA15 | RAM Holder Garmin QUEST | RAM-B-238 | 11-06478 | . |
| RAM-HOL-GA16 | RAM Holder Garmin Etrex Color | RAM-B-238 | 11-05243 | . |
| RAM-HOL-GA19 | RAM Holder Garmin C320, C330 | RAM-B-238 | 11-06479 | . |
| RAM-HOL-GA20U | RAM Holder Garmin Rhino 520, 530 | RAM-B-238 | 11-06480 | . |
| RAM-HOL-GA21 | RAM Holder Garmin Nuvi 300 SERIES | RAM-B-238 | 11-06467 | . |
| RAM-HOL-GA23 | RAM Holder Garmin Nuvi 660 | RAM-B-238 | 11-06469 | . |
| RAM-HOL-GA24 | RAM Holder Garmin Nuvi 200 & 250 | RAM-B-238 | 11-06470 | . |
| RAM-HOL-GA25 | RAM Holder Garmin Nuvi 200W & 250W | RAM-B-238 | 11-06471 | . |
| RAM-HOL-GA26 | RAM Holder Garmin Nuvi 750 760 770 780 | RAM-B-238 | 11-06472 | . |
| RAM-HOL-GA27 | RAM Holder Garmin Colorado | RAM-B-238 | 11-06473 | . |
| RAM-HOL-GA28 | RAM Holder Garmin Nuvi 5000 | RAM-B-238 | 11-06474 | . |
| RAM-HOL-GA30 | RAM Holder Garmin Nuvi 880 850 860 | RAM-B-238 | 11-06475 | . |
| RAM-HOL-CO5P | RAM Powered Universal IPAQ Dock | RAM-B-238 | 11-06434 | . |
| RAM-HOL-PD3 | RAM Universal PDA Holder | RAM-B-238 | 11-05488 | . |
| RAM-HOL-UN1 | RAM Small Black Mobile Phone Holder | RAM-B-238 | 11-06435 | . |
| RAM-HOL-UN2 | RAM Medium Black Mobile Phone Holder | RAM-B-238 | 11-06436 | . |
| RAM-HOL-UN3 | RAM Large Black Mobile Phone Holder | RAM-B-238 | 11-06437 | . |
| RAM-HOL-UN4 | RAM Universal Plastic Radio/GPS Holder | RAM-B-238 | 11-06450 | . |
| RAM-HOL-OQO1 | UNPKD RAM Holder OQO Model 2 | RAM-B-202 | 11-06425 | . |
| RAM-HOL-SAM1 | RAM Holder Samsung Q1 Tablet | RAM-B-202 | 11-05236 | . |
| RAM-HOL-FUJ1 | RAM Holder Fujitsu Lifebook P Series | RAM-B-202 | 11-05285 | . |
| RAM-HOL-SON1 | RAM Holder Sony VAIO PC UX | RAM-B-202 | 11-05237 | . |
| RAM-HOL-AR11 | RAM Holder Arnic EFLY Book | RAM-B-202 | 11-05239 | . |
| RAM-HOL-ASU1 | RAM Holder ASUS R2H UMPC | RAM-B-202 | 11-05240 | . |
| RAM-HOL-MOT3 | RAM Holder Motion LS800 | RAM-B-202 | 11-04741 | . |
| RAM-HOL-MOT3F | RAM Holder Motion LS800 Cooling Fan | RAM-B-202 | 11-05059 | . |
| RAM-B-132B | Self Leveling Drink Cup Holder | RAM-B-201 | 11-01334 | . |
| RAM-B-202A | 1" DIA. Ball Base Mount For Camaras | RAM-B-201 | 11-02080 | . |
| RAM-B-202-G1 | 1" DIA. Ball Base With Garmin Hardware | RAM-B-201 | 11-04083 | . |
| RAM-B-121-LQ3U | Yoke mount with cradle for AIRMAP 600 | -- | 11-07103 | . |
| RAM-HOL-SPO1U | Ram Holder Spot Satellite Unit | -- | 11-07508 | . |

AV

LOBSTER MOUNTS - GPS MOUNTS

LOBSTER MOUNTS

The "Shrimp" Series of mounts provide an economical solution for mounting mobile electronics. This basic system provides a minimal extension, and utilizes a tri-wing finger knob for locking and positioning. Our off-centered 1-1/4 inch ball-base (patent pending) provides adaptability that cannot be matched. The Shrimp mount extends as little as 2-1/2 inches from the mounting surface and can extend to about 5 inches. The "Shrimp" was designed to support devices up to 3 lbs, and is available with bolt-on, MC/ATV, and Suction bases.



UNIVERSAL MC-ATV CLAMP - Base only! For an additional anchor point we offer this universal rail-clamping base, designed to fit square or round tubing from 3/4 inch to 1-1/2 inch diameter (by adding a 1/4-20 x 3" bolt, this base will fit up to 1-3/4 tube). This rugged base is made from extruded aluminum, an aluminum ball, and includes stainless steel hardware. Weight - Unit 0.5 lbs.

P/N 11-04709.....



UNIVERSAL CRADLE - The Cradle comes with four grip fingers and one stop finger, which are capable of being positioned in any of the eight slots on the body. Rubber pads for the grip fingers and stainless steel hardware are provided. In the short direction, the grip fingers are adjustable from 1-1/2" to 3-1/4", and in the long direction, the grip fingers adjust from 4-1/2" to 5-1/2". For longer devices, the fingers on top could be left off, allowing the device to overhang the cradle base. This product, like our other products is produced for use in aviation and marine environments where being compass compatible and corrosion resistant are important. P/N 11-04710.....



SHRIMP SERIES BOLT-ON WITH CAMERA TOP - A removable 1/4-20 camera stud, universal mounting ball-base and mounting flange, lanyard loop; accommodates the AMPS bolt up pattern (AMPS is a 1-1/2" by 1-3/16" screw hole pattern used in many portable electronic products). Aluminum alloy and reinforced composite parts with stainless steel hardware. P/N 11-04711.....



SHRIMP SERIES MC/ATV CLAMP WITH CAMERA TOP - Same as our Bolt-On model, while adding a universal rail-clamping base, designed to fit square or round tubing from 3/4 inch to 1-1/4 inch diameter (by adding a 1/4-20 x 3" bolt, this base will fit up to 1-3/4" tube). This rugged base is made from extruded aluminum, an aluminum ball, and includes stainless steel hardware. P/N 11-04713.....



SHRIMP SERIES BOLT-ON + CRADLE - Universal mounting ball-base and mounting flange, lanyard loop, along with our cradle for hand-held devices. The Cradle (UN-198) comes with four grip fingers and one stop finger, which are capable of being positioned in any of the eight slots on the body. Rubber pads for the grip fingers and stainless steel hardware are provided. In the short direction, the grip fingers are adjustable from 1-1/2" to 3-1/4", and in the long direction, the grip fingers adjust from 4-1/2" to 5-1/2". For larger devices, the finger may be left out at the top allowing the device to overhang the cradle base. Like our other products, the SH-259 is produced for use in aviation and marine environments where being compass compatible and corrosion resistant are important. P/N 11-04715.....



SHRIMP SERIES SUCTION + CRADLE - Our Suction Base attachment ball is capable of being tilted for extra versatility in positioning your device. Cradle (UN-198) comes with four grip fingers and one stop finger, capable of being positioned in any of the eight slots on the body. Rubber pads for the grip fingers and stainless steel hardware are provided. In the short direction, the grip fingers are adjustable from 1-1/2" to 3-1/4", and in the long direction, the grip fingers adjust from 4-1/2" to 5-1/2". For larger devices, the finger may be left out at the top allowing the device to overhang the cradle base. This mount, like our other products is produced for use in aviation and marine environments where being compass compatible and corrosion resistant are important. P/N 11-04716.....



SHRIMP SERIES MC/ATV + CRADLE - A universal rail-clamping base, designed to fit square or round tubing from 3/4 inch to 1-1/4 inch diameter. Made from extruded aluminum, an aluminum ball, and includes stainless steel hardware. Cradle comes with four grip fingers and one stop finger, capable of being positioned in any of the eight slots on the body. Rubber pads for the grip fingers and stainless steel hardware are provided. In the short direction, the grip fingers are adjustable from 1-1/2" to 3-1/4", and in the long direction, the grip fingers adjust from 4-1/2" to 5-1/2". For larger devices, the finger may be left out at the top allowing the device to overhang the cradle base..P/N 11-04717.....



UN-327 SUCTION BASE - Suction Base Only, If you are already using a Bolt-On or MC/ATV base, this allows you to easily transfer your device to your car or any place with a smooth surface. The Suction Base attachment ball is capable of being tilted for extra versatility in positioning your device. This base, like the other products is produced for use in aviation and marine environments where being compass compatible and corrosion resistant are important. P/N 11-06616.....



SH-334 SHRIMP SUCTION MOUNT WITH CAMERA TOP - Our Suction Base attachment ball is capable of being tilted for extra versatility in positioning your device. The Camera Top (UN-310) has a removable 1/4-20 camera stud. It also features a mounting surface with holes and slots, which accommodate the AMPS standard (1.496" x 1.181") pattern for direct attachment to numerous electronic devices. This base, like our other products, is produced for use in aviation and marine environments where being compass compatible and corrosion resistant are important. P/N 11-06617.....



UN-303 ROLL BAR CLAMP - Base only! For your ATV, golf cart steering column or other applicable with 1-1/2" to 2-1/2" tubing. This rugged base is made from aluminum extrusion, an aluminum ball, and zinc plated steel hardware. Note that this is not compass friendly. P/N 11-06618.....



UN-310 CAMERA TOP - Camera Mounting surface that can also be used for mounting other devices. If you are already using a Universal Cradle (UN-198), this allows you to easily use your mounting system for other purposes. The holes and slots in the flange accommodate the AMPS standard pattern as well as several size u-bolts. This base, like our other products is produced for use in aviation and marine environments where being compass-compatible and corrosion resistant are important. P/N 11-06615.....

ROTATING MOUNT FOR GARMIN GPS



The rotating mount attaches to the Garmin yoke mount supplied with the GPS units. The GPS then mounts on the product and allows the GPS unit to be rotated so the passenger can view the unit if mounted on the pilots side. If used on the co-pilots side, then the pilot can rotate the GPS so he/she can view it as well. Note: The rotating mount is used for the Garmin GPS units (295,196,296,396)

Rotating Mount for Garmin GPS LF..... P/N 11-04661.....
Rotating Mount for Garmin GPS RT..... P/N 11-04662.....

ANGEROLE INSTRUMENT PANEL MOUNT



The photo illustrates the Model 241 040 fitted to a blank instrument panel. An adaptor plate (included with the mount) fits any standard 2-1/4" instrument panel hole so, generally, it can be fitted without any modifications to your airplane. If your application needs it, we can supply this mount with a 3-1/8" panel adaptor plate. If you don't have an unused panel hole, a viable alternative is to drill two holes and simply bolt the mount directly to your panel. The "footprint" area is only 2" x 0.5" so there's probably going to be somewhere you can make it fit. Naturally, you need to be certain this is appropriate, sensible and legal for your installation before drilling holes in your airplane. P/N 11-07238.....

ICOM HANDHELD TRANSCEIVERS



ICOM IC-A24 NAV/COM

Easy To Use While Flying - Simple one-handed operation is the most essential feature of the IC-A24. The well labeled, large keypad provides user friendly operation. The large display shows both letters and numbers and is easy to see, making for fast frequency recognition. The display is backlit, and so is the keypad. The light stays on until you turn it off - a very handy feature for flying at night! "Flip-Flop" Channel Recall - The IC-A24 stores the last 10 channels used. You can easily recall those channels by pushing the "flip-flop" recall buttons on the front panel. It is convenient for switching between several channels, such as Nav and Com channels. VOR Navigation - The IC-A24 has VOR navigation functions. The DVOR mode shows the radial to or from a VOR station and the CDI mode shows the course deviation to/from a VOR station. You can also input your intended radial to/from the VOR station and show the course deviation on the display. The duplex operations allows you to call a COM channel while you are using VOR navigation. External DC Power Jack - An external DC power jack allows for operation with the wall charger or the cigarette lighter cable. When the battery pack is installed, simultaneous charging during operation is also possible. Water Resistant Construction- The water resistant construction provides reliable operation in wet conditions. IC-A24 Nav/Com (110V) - Includes Nicad battery, wall charger, belt clip, carrying case, headset adapter & handstrap. ...P/N 11-02942 IIC-A24 Nav/Com (220V)P/N 11-04355

ICOM IC-A6 COM

Simple one-handed operation is the most essential feature of the IC-A6. The well labeled, large keypad provides user friendly operation. The large display shows both letters and numbers and is easy to see, making for fast frequency recognition. The display is backlit, and so is the keypad. The light stays on until you turn it off. The IC-A6 stores the last 10 channels used. You can easily recall those channels by pushing the "flipflop" recall buttons on the front panel. External DC Power Jack - An external DC power jack allows for operation with the wall charger or the cigarette lighter cable. When the battery pack is installed, simultaneous charging during operation is also possible. Water Resistant Construction - The water resistant construction provides reliable operation in wet conditions. Features: • 200 memory channels (10 banks of 20 channels) allows you to load in up to 10 separate flight plans. 6 character alphanumeric for channel names. • Dedicated 121.5 "emergency" key. • All NOAA weather channels preprogrammed. • Automatic Noise Limiter (ANL) built in for noise reduction. • Icom's exclusive front panel programmable side tone allows you to set the correct side tone level for almost any headset • Icom's exclusive "TAG" scanning and memory bank scanning make it the most user friendly radio on the market. Specifications: • Frequency range: Tx/Rx 118.000-136.975MHz • Weather 161.650-163.275MHz • Wt: 15.02oz. • Dims: 2-1/8" x 5-3/32" x 1-13/32"



IC-A6 Com (110V) - Includes Nicad battery, wall charger, belt clip, headset adapter & handstrap. P/N 11-02944 IC-A6 Com (220V) P/N 11-03178

ACCESSORIES FOR IC-24 & IC-A6

| Model | Description | Part No. | Price |
|----------|---|----------|-------|
| BC-121 | Power Supply-AC | 11-00615 | . |
| BP-200L | Battery-9.6V, 760mAh Ni-MH | 11-00606 | . |
| CP20L | Cigarette Lighter adapter. DC-DC Converter. Will charge from 12-24 volts | 11-03604 | . |
| OPC-478 | Programming Cable | 11-18563 | . |
| OPC-967 | Headset Adapter | 11-00618 | . |
| BP-210N | Icom Battery | 11-04385 | . |
| LC-159 | Protective Case for A24 or A6 | 11-05003 | . |
| BP-209N | Ni-Cap Battery | 11-05019 | . |
| BC-145 | Adapter for IC-A24 & IC-A6 | 11-04848 | . |
| BC-144N | 110V Charger for IC-A24 & IC-A6 | 11-04847 | . |
| OPC-656 | PC Power Cable for IC-A24 & IC-A6 | 11-05022 | . |
| BC-110AR | Trickle Charger for IC-A24 & IC-A6 | 11-05021 | . |
| BC-119N | ICOM BC-119N Fast Charger for BP-209N, BP-201N, AND ORBP-211N. Comes with the desktop charger and adapter cup BC-145A. Must purchase adapter cups for other models. | 11-04773 | . |
| BC-145E | European Adapter 220V for IC-A24 & IC-A6 | 11-05030 | . |
| BC-121N | 6 Unit charger Kit for IC-A24 & IC-A6 | 11-05020 | . |
| MB-86 | Swivel Belt Clip for IC-A24 & IC-A6 | 11-05002 | . |
| MB-103 | Icom Belt Clip | 11-03494 | . |
| HM-173 | Speaker Mic for IC-A6 & IC-A24 | 11-05832 | . |
| PTT-SW | Icom Headset PTT Switch for IC-A6, IC-A3, IC-A4, IC-A5, IC-A22, IC-A23 | 11-18529 | . |

ICOM A14 HANDHELD TRANSCEIVER



700mW* loud audio - Because air band radios are usually operated in high-noise environments, it is essential for the radio to provide loud clear audio. The IC-A14/S series employs a BTL amplifier that doubles the audio output, offering loud and clear audio that'll cut through cabin or tarmac noise. (*internal speaker only)

Full keypad type or Simple keypad type - The IC-A14 full keypad type allows you to input the channel or frequency directly and has an exclusive button for the 121.5MHz emergency channel. The IC-A14 receives NAV and WX channels. The IC-A14S simple keypad

type provides simpler operation with a minimum of buttons that is suitable for ground crews. **Compact, light weight and rugged body** - The IC-A14/S series is compact (only 120mm tall) and light weight (approx. 350g including antenna and BP-232N). The water resistant construction, equivalent to IPX4, provides reliable operation in wet conditions.

Large capacity Lithium-Ion battery pack - With the 2000mAh large capacity Lithium-Ion battery pack, BP-232N, the IC-A14/S series provides stable output power and 18 hours long (approx.) operating time*. The BP-261, battery case takes 6 AA (LR6) alkaline cells for convenient battery backup. * Typical operation, Tx:Rx: Stand-by=5:5:90.

200 channels with memory banks - A total of 200* memory channels can be named with an 8-character channel name for easy recognition. For fast and simple operation, these channels can be grouped into 10 memory banks*. *IC-A14 only. The IC-A14S has 100 memory channels and memory banks are not available.

| Description | Part No. | Price |
|------------------------------------|----------|-------|
| ICOM IC-A14S Simple Keypad Version | 11-05903 | . |
| ICOM IC-A14 Full Keypad Version | 11-05904 | . |

Accessories for A14

| Description | Model | Part No. | Price |
|--|-----------|----------|-------|
| Antenna A4 A5 A6 A23 A24 | FAB02AR | 11-05031 | . |
| Speaker Microphone | HM173 | 11-05832 | . |
| Headset Adapter | PAOPC499 | 11-18537 | . |
| Alkaline Battery Case (6 - AA Batt. Req.) | BP261 | 11-06210 | . |
| 7.2v 2000mAh Li-Ion Battery | BP232N | 11-06211 | . |
| Desktop rapid Charger for BP230, BP231, BP232 Batteries. | BP160 | 11-07339 | . |
| Belt Clip - Swivel type | MB93 | 11-06212 | . |
| Belt Clip - Alligator type | MB94 | 11-06213 | . |
| Drop In Desktop Charger 110V | BC179-01 | 11-06214 | . |
| Cig Lighter Adptr Cbl for BC179 (12-24V) | CP22 | 11-06215 | . |
| Drop In Desktop Charger 220V | BC179-02 | 11-06218 | . |
| Rapid Charger (BC160-01) | BC160-01 | 11-06219 | . |
| Single Rpd Dsktp Chgr. w/ BC145 (AD106 Req.) | BC119N | 11-04848 | . |
| AC Adptr for use w/ BC119N & BC160 | BC145 A/E | 11-06220 | . |
| 6 Way Rapid Chgr. w/ BC157(6-AD106 Req.) | BC121N | 11-05020 | . |
| DC Pwr Cbl for BC119N or BC160 | OPC515L | 11-18533 | . |
| DC Power Cable for BC121N | OPC656 | 11-05022 | . |

ICOM IC-4088A UHF FM TRANSCEIVER



The Icom IC-4088A is a compact, inexpensive transceiver, water resistant and very easy to use. Channel changing is as simple as pushing the up/down keys. The radio can be controlled with only 5 button and a volume control knob. The easy to read LCD shows information at a glance. Other outstanding features includes: Economical AA alkaline batteries (3 not supplied) provide 30+ hrs of use, low battery indicator provides warning of battery condition when using alkaline batteries, rotary type antenna folds down behind radio, optional Ni-Cd battery pack and rapid charger, compact body fits neatly in your hand, and auto power-off timer (two hours). This radio is excellent for use in communicating with friends at airshows.

P/N 11-18608

Accessories for Icom IC-A4

| Description | Part No. | Price |
|---|----------|-------|
| BP-194 Alkaline battery case | 11-18599 | . |
| BP-195 Battery Pack 9.6V, 700 mAh | 11-18665 | . |
| BP-196 Long Life (1050mAh) Ni-Cd batt | 11-18606 | . |
| AD-81 Desktop Charger Adapter | 11-18621 | . |
| BC-124 AC Adapter | 11-00615 | . |
| BC15702 is the power supply unit for the BC-121 | 11-05603 | . |
| CP-12 Cigarette lighter | 11-18594 | . |
| OPC-254L DC Power Cable for IC-A4, IC-A5, & IC-A23 | 11-18607 | . |
| HM-119 Speaker Microphone | 11-02094 | . |
| BC-110V Wall Charger | 11-16820 | . |
| BC-133 Trickle Battery Charger | 11-05689 | . |
| OPC-474 Cloning Cable (handheld to handheld) | 11-02124 | . |
| OPC-752 Headset adapter | 11-18602 | . |
| MB-74N Alligator type belt clip | 11-05593 | . |
| MB-87 Swivel Belt Clip | 11-05686 | . |
| Nylon Carrying Case | 11-18617 | . |
| CP12L - Cigarette Lighter adapter (For use with A22, A23, A4, A5) w/ noise filter. Will only charge from 12 volts | 11-18604 | . |
| FA-801AR - Antenna | 11-18543 | . |
| OPC-254L - Power cable | 11-18607 | . |

HANDHELD TRANSCEIVERS



ICOM IC-R5 SPORT

Small size, powerful specifications and outstanding features puts you in the action, whether listening in on your favorite driver's car-to-pit radio calls while at the race track, looking for something new while traveling, or catching your favorite radio programs at home.

Wideband Receive 0.150-1309.995 MHz* The IC-R5's wideband reception means virtually anything from AM broadcast to UHF TV audio is fair listening game. Every TV broadcast channel is preprogrammed into this radio.* Listen to AM & FM radio stations, utility communications, and more. For the race fan, the IC-R5 puts you so close to the asphalt, only the man behind the wheel is experiencing more action.
*Depending on version.

1250 Alphanumeric Memory Channels Make up your own channel names for each of up to 1250 memory channels, and channel recognition is easy! The IC-R5's LCD display lets you use numbers, letters or a combination of both when naming channels and banks. Icom's exclusive Dynamic Memory Scan (DMS) gives you the flexibility to customize and manage the IC-R5's memory banks the way you want or need.

Convenient Power and Charging Power on the go is easy, thanks to the IC-R5's ability to operate from a variety of power sources. You may: power the radio via the DC port; or use the included 2 "AA" size rechargeable Ni-Cd batteries*; or use long storage life "AA" alkalines. A DC jack allows for simultaneous battery charging while operating the radio. *Depending on version.

Computer Programmable With the optional software and cable, IC-R5 programming and cloning are a breeze. Hook your IC-R5 up to a PC and you're ready to customize channel names, scan lists, and more.
P/N 11-06493



VERTEX VXA-220 PRO VI

The VXA-220 features 5 watts TX power output, loud audio (700 mw), long life nickel metal hydride battery, larger LCD display, 250 memory channels with programmable 8 character alpha numeric display, submersible design (3 feet for 30 minutes), NOAA weather receive (10 channels). All of this is backed by the manufacturers 3 year parts and labor warranty. The VXA-220 uses the same accessories as the popular VXA-300.

In the box: VXA 220 COM, FNB-83 - NI-MH Battery 7.2V 1400, CN-3 - SMA TO BNC Antenna Adapter, ATV-10 Rubber Duck Antenna, CT-96 - Headset Adapter, NC-88B - Battery Charger 120V, CD-32 - Charger Cradle
P/N 11-05054

VXA-220 PRO VI 220VP/N 11-07029



VERTEX VXA-300 TRANSCEIVER

- 5 watt airband transceiver with Nav-Comm display
- Large capacity Ni-MH Battery (twice the battery capacity of Icom IC-A23)
- 8.33 Khz channel spacing (RX only) for European band plan
- Built in VOX
- Built in P.A. mode
- 250 memory channels with 8 character alphanumeric titles
- Submersible (3 ft for 30 min.)
- Extra loud audio amplifier (30% louder than Icom IC-A23)
- NOAA weather channel receiver. The VXA-300 Lite is the same unit as the VXA-300 with the addition of an Alkaline Battery Case and 12V adapter.

VXA-300..... P/N 11-02716.....

VXA-300/C P/N 11-04342.....

VXA-300 PILOT III ACCESSORIES (Included)

ATV-10 - Rubber Duck antenna (included)
P/N 11-04343.....

CT-96 - Headset Adapter For VXA-300,700, 710
P/N 11-02562.....

NC-88B -120V,12hr charger. Req. CD-28 charging stand
P/N 11-04344.....

CD-28 - Overnight desktop charger cradle. Requires NC-88 wall charger
P/N 11-04346.....

FNB-83 - 7.2v 1400mah Ni-MH battery (included)
P/N 11-04347.....

Clip-14 - Swivel belt clip (included) P/N 11-04340.....

VXA-300 PILOT III ACCESSORIES (Optional)

CN-3 SMA to BNC Antenna Adapter - Antenna Adapter For VXA-150,
VXA-210, VXA-300, VXA-700, VXA-710..... P/N 11-16957.....

E-DC-5B - 12V Cigarette Lighter Adapter for all Vertex Standard airband transceivers.
P/N 11-16961.....

FBA-25 Alkaline Case - Holds 6 AA Cells For VXA-150,210,300
P/N 11-00408.....

MH-44B4B - Speaker Mic for VXA-700,300,710
P/N 11-02381.....

NC-88C -220V wall charger P/N 11-04344.....



VXA-710 "SPIRIT" AIRBAND NAV/COM TRANSCEIVER

A first in aviation communications! Vertex Standard has combined over 50 years experience in amateur radio communications and our expertise in aviation communications to make the world's first Air Band, VOR Navigation and VHF Business Band Radio receive handheld transceiver!

Accessories Included: FNB-80, Lithium-Ion Battery, NC-72B Wall Charger, CT-96 Headset adapter, ATV-9 Rubber Duck Antenna

Vertex Transceiver w/ 117V Charger
P/N 11-04337.....

Vertex Transceiver w/ 220V Charger
P/N 11-04338.....

ACCESSORIES (INCLUDED):

ATV-9 Dual Band Rubber Duck Antenna..... P/N 11-02561.....

CT-96 Headset Adapter P/N 11-02562.....

NC-72B 120 Volt 12 Hour Charger P/N 11-05864.....

FNB-80LI 7.2v 1300mah Li-Ion Battery..... P/N 11-02563.....

ACCESSORIES (OPTIONAL):

Swivel Belt Clip..... P/N 11-04340.....

PC Programming kit for VXA700 only..... P/N 11-02564.....

CN-3 SMA to BNC Antenna Adapter P/N 11-16957.....

E-DC-5B 12 V Cigarette Lighter Adapter P/N 11-16961.....

FBA-23 Alkaline Case for VXA-700, 710 P/N 11-02565.....

CSC-88 Soft Case for VXA-700, 710..... P/N 11-02566.....

MH-44B4B Speaker Microphone..... P/N 11-02381.....

CD-15A Desktop Rapid Charger (117V)..... P/N 11-02567.....

NC-72C 220 Volt 12 Hour Charger..... P/N 11-05865.....

REXON RHR520 HANDHELD TRANSCEIVERS



JRC handheld transceivers offer pilots many unique features such as active/standby frequency control, dual watch (monitor 1 frequency while tuned to a primary frequency, instant memory write to instantly save any tuned frequency, and Nav Scan which scans nav frequency band to find useable VOR signals. Other features include DVOR and CDI, 16 button keypad, NOAA weather channels, 100 programmable memory channels, backlit LCD display, 5 watts of output power, full scanning, and much more. Comes complete w/headset adapter, protective case, belt clip, NiCd battery pack, 110 VAC wall charger, & wrist strap.
JHP-520 Nav/ComP/N 11-00073

ACCESSORIES:

Alkaline Battery Case..P/N 11-00077

(Batteries are not included)

Speaker Mic.....P/N 11-00204

Cig Lighter Adapter.....P/N 11-00081

700 mA NiCd Battery ..P/N 11-00209



PUSH TO TALK SWITCH

High-quality Push-To-Talk switch. Uni-

versal In-Line PTT Switch W-103

P/N 11-07087



HANDHELD TRANSCEIVERS – BATTERIES

UNIDEN BC350A BEARCAT AVIATION SCANNER



E-Z scan mobile/base scanner w/50 channels and 11 bands, including aviation, preset service search, selective band search, illuminated LCD display, lockout, TURBO SCAN™, 1-touch weather, memory lock, AC adapter & cigarette lighter adapter. Covers: 29-54, 108-174, 406-512 MHz

P/N 11-18940

PASSIVE AIR BAND AIRCRAFT MONITOR



Monitors the entire aircraft band without tuning! Passive design, can be used onboard aircraft, no local oscillator, generates and creates no interference whatsoever! Great for air shows! Patented circuit and design! For decades we have been known for our novel and creative product designs. Well, check this one out! An aircraft receiver that receives all nearby traffic without any tuning. It gets better... there is no local oscillator so it doesn't produce, and can't produce, any interference associated with all other receivers with an LO. That means you can

use it onboard aircraft as a passive device! And what will you hear? The closest and strongest traffic, mainly, the one you're sitting in! How unique is this? We have a patent on it, and that says it all!

P/N 11-04735

GLOPLUG POWER ADAPTERS FOR HANDHELDS



GloPlug is a much needed, well designed cigarette lighter accessory that allows a safe method of providing electrical power to hand-

held equipment. Handheld covers a multitude of portable devices including moving maps, radios, GPS, and fans. GloPlugs glow is a light emitting diode, which lights when the circuit is activated. GloPlug has one power take off socket. GloPlugX3 has three power take off sockets enabling the operation of three handhelds simultaneously. GloPlug protects the handheld by an inline blade fuse which is easily replaced without disassembly. FoolPruf extension cords are available. The cords have terminal ends that are universal. (Either terminal fits the handheld or GloPlug.) The Portable Socket Male & Female provide a means of plugging handhelds into the GloPlug even though the handhelds have permanently attached accessory power cords and accessory plugs. Just plug the handheld accessory into the Portable Socket and then plug socket into GloPlug fire up the handheld, no interruption of other handheld equipment. Simple & fast.

GloPlug Accessory Plug.....P/N 11-00313

GloPlug X3 Accessory Plug.....P/N 11-00312

FoolPruf Extension Cord.....P/N 11-00314

Coupling for Foolpruf cord.....P/N 11-00315

Y>1 Adapter, Multiple use for GloPlug.....P/N 11-00316

Portable Socket - Male.....P/N 11-01069

Portable Socket - Female.....P/N 11-01070

WINDSHIELD ANTENNA KIT FOR HANDHELD RADIOS



This antenna kit attaches to the inside of the windshield & dramatically improves portable nav/com's transmit, receive, and VOR performance based on extensive field testing. It is portable and ideal for those who can't use an ANT-SB. Simply attaches one's own flexible antenna to inside of windshield with BNC, coax, suction cup adapter. Works with any handheld radio using BNC connections.

P/N 11-18603

GLEIM KA11AIR PORTABLE AVIATION RECEIVER



Aviation radio communications are now available to you with Gleim's Aviation Radio Receiver. Monitor the entire aviation frequency band!

This radio is very portable, easy to operate, and extremely cost effective. Enjoy Listening to aircraft and air traffic control communications and build your proficiency in "pilot speak".

This radio receiver is an integral part of GLEIM's Watching Airplanes Course- a tool to assist those interested in aviation to learn more about it.

The KA11Air receiver comes with two AA batteries, the earphones, and external antenna..... P/N 13-06717

DISCOUNT BATTERIES FOR HANDHELDS

| Battery Model | Description | Part No. | Price |
|--|---|----------|-------|
| For ICOM A23/A5 Handheld aviation radios- | | | |
| BP-197H | Alkaline Battery pack | 11-01082 | . |
| BP-200XL | 9.6v 1450 mAh long Life NU-MH Battery | 11-06351 | . |
| For ICOM A-4 Handheld aviation radios- | | | |
| BP-195 | 9.6v 1000 mAh pk | 11-00226 | . |
| BP-196 | 9.6v 1500 mAh pk | 11-00227 | . |
| For ICOM A-22 & A-3 radios- | | | |
| CM-166 | NiMH Battery | 11-00228 | . |
| CM-166 | 12.0v 1200 mAh | 11-00228 | . |
| BC-79A | Desktop Charger | 11-18557 | . |
| For ICOM A-20, A-21, & Delcom- | | | |
| CM-7x | 13.2v 1000 mAh pk | 11-00230 | . |
| BP-D1 | 12.0v 700 mAh pk | 11-00318 | . |
| BP-D1x | 12.0v 1000 mAh pk | 11-00319 | . |
| IC-CP | Car Power/Charge cord | 11-00351 | . |
| For ICOM R-1 radios- | | | |
| BP-83 | 7.2v 600 mAh pk | 11-00233 | . |
| BP-83xh | 7.2v 1500 mAh pk | 11-00234 | . |
| BP-84 | 7.2v 1200 mAh pk | 11-00235 | . |
| BP-84x | 7.2v 1800 mAh pk | 11-00236 | . |
| BC-79A | Desktop Quick Charger | 11-18557 | . |
| Icom Chargers | | | |
| CP-11L | DC Power/Charge Cord for ICOM IC-T90A, IC-91AD, IC-A24, IC-A5 | 11-06348 | . |
| EMS-210N | Smart charger for ICOM | 11-06350 | . |
| EMS-30i | Desktop smart-quick charger for ICOM-type battery packs | 11-06352 | . |
| For Yaesu Aviator Pilot & Aviator Pro nav/com radios- | | | |
| FNB-41xh | 9.6v 1000 mAh pk | 11-00237 | . |
| FNB-47xh | 7.2v 1800 mAh pk | 11-00238 | . |
| FNB-41xs | 9.6v 1450 mAh pk | 11-06354 | . |
| CBE-41 | Battery Eliminator | 11-06355 | . |
| BC-601c | Smart Quick Charger | 11-00239 | . |
| For Bendix/King radios- | | | |
| BP-KX99 | 10.0v 1400 mAh pk | 11-00240 | . |
| IC-CP | Car Power/Charge cord | 11-00351 | . |
| For STS handheld radios- | | | |
| BP-ST5+ | 7.2v 1400 mAh pk | 11-00241 | . |
| WC-ST5 | Wall Charger | 11-00352 | . |
| For Bearcat/Uniden 100/200/250XLT- | | | |
| BP-200 | 7.2v 600 mAh pk | 11-00321 | . |
| For Bearcat/Uniden 2500XLT, 3000XLT, & 3500XLT- | | | |
| BP-2500x | 6.0v 1000 mAh pk | 11-00322 | . |
| For Bearcat/Uniden Trunk Tracker & Sportcat- | | | |
| BC-120 | 4.8v 1000 mAh pk | 11-00323 | . |
| BC-120x | 4.8v 1500 mAh pk | 11-00324 | . |
| For Santec/Narco radios- | | | |
| BP-800 | 9.6v 600 mAh pk | 11-00242 | . |
| BP-800sh | 9.6v 1000 mAh pk | 11-00325 | . |
| For Bose Aviation Headset Series 1 | | | |
| BP-A | 14.4v 1250 mAh | 11-00243 | . |

UNIDEN BC370CRS RADIO SCANNER



The BC370CRS scanner is a multi-featured conventional channel scanner with All Hazards alert. You can easily enter and store frequencies for police, fire/emergency, marine, air, amateur, and other radio services into 300 channels distributed over ten banks. The scanner also alerts you when NOAA (National Oceanic and Atmospheric

Administration) or any broadcast station the scanner is tuned to issues an EAS (Emergency Alert System) signal. These alerts are issued for severe weather, homeland security, and law enforcement events (such as Amber alerts).

P/N 11-04736

AR-108 AIR-BAND SCANNER



AR-108 is a full-featured handheld Air-Band Scanner with weather channels. The AR-108 is small, rugged and compact. The features include 10 weather channels; 9-digit/24 icon backlit LCD display; 99 programmable memory channels; selective channel steps; scans from either the pre-programmed memory channels or the entire aviation frequency band; key lock; key beep tone on/off; battery power saver; powered by 2 "AA" batteries. Includes: scanner, antenna, beltclip and manual. 1yr warranty. P/N 11-18505

TRUTRAK AUTO PILOTS

SORCERER AS AUTOPILOT



Same features as the TruTrak DFC-250 ATI, plus GPSV and VNAV.

GPS-Slaved solid-state DG • Digital Ground Track Selector • VOR / LOC / ILS • VOR / LOC Reverse • Selected-angle Intercept • GPS Nav Mode • GPS Steering • Solid-state gyroscopically-controlled pitch axis • Selected Vertical Speed climbs and descents • Altitude Hold • Built-in Digital Altimeter • V-NAV • Vertical GPS Steering • Altitude Selector with 50-ft resolution for approaches • Selectable airspeed for altitude transitions (in addition to VS) • True Control Wheel Steering* • Simplified User Interface
 P/N 11-02968
 TruTrak Yaw Damper P/N 11-02972

DIGITRAK AUTOPILOT



• GPS-Slaved solid-state DG
 • Digital Ground Track Selector
 • GPS Nav Mode
 • Magnetic Backup Mode
 • True Control Wheel Steering*
 • 12V only
 • 2-1/4" - Dims 2.5"H x 2.5"W x 3.5"D
 • Standard weight including servo: 3.5 lb
 P/N 11-01595
 TruTrak Yaw Damper
 P/N 11-02972

TRUTRAK FLIGHT SYSTEM RV-10 AUTO PILOT



• GPS-Slaved solid-state DG • Solid-state gyroscopically-controlled pitch axis • Digital Ground Track Selector • Selected Vertical Speed climbs and

descents • GPS Nav Mode • Altitude Hold • GPS Steering • Built-in Digital Altimeter • Simplified user interface • V-NAV • Vertical GPS Steering (GPSV) • True Control Wheel Steering* • Altitude Selector with 50-ft resolution
 P/N 11-04668

TRUTRAK AUTOPILOT AP-100



• GPS-Slaved solid-state DG
 • Digital Ground Track Selector
 • VOR / LOC / ILS
 • VOR / LOC Reverse
 • Selected-angle Intercept
 • GPS Nav Mode
 • GPS Steering
 • Solid-state gyroscopically controlled pitch axis
 • Selected Vertical Speed climbs
 TruTrak Yaw Damper P/N 11-02972
 TruTrak Automatic Trim Pitch P/N 11-02970

TRUTRAK YAW DAMPER



The Yaw Damper employs a solid state rate gyro to damp out short term yaw oscillation, and a transverse accelerometer to control rudder position long term, so as to keep the ball centered. The Yaw Damper can be added to the DFC-200 or Sorcerer autopilots.
 • 2.05" H x 4.12" W x 1.69" D
 • 12-28 volts
 • Standard Weight including servo 3.25lb (Servo Must be Purchased Separately)
 P/N 11-02972

AUTOMATIC TRIM



Failsafe Automatic Pitch Trim can be added to any system with vertical speed select. TruTrak is the only company serving the experimental market to offer Failsafe Automatic Pitch Trim; this ensures that a single failure will not cause runaway trim. Automatic Trim can be added to the Yaw Damper.
 • 2.05" H x 4.12" W x 1.69" D
 • 12-28 volts

• Weight 4lb

P/N 11-02970

DIGIFLIGHT-II MULTI-SERVO AUTOPILOTS



DIGIFLIGHT-II • Fits Standard 2.25" Round Instrument Hole • Built-in Digital Slaved Directional Gyro • Digital Track Selector • GPS Nav Mode • Altitude Hold • 12-28 V • Simple Intuitive User Interface • All Solid-State Sensors • Lighter & Smaller than Comparable Systems • True Control Wheel Steering* • Dims - 2.5"H x 2.5"W x 5.5"D • Flat Dims - 1.6" H x 4.3" W x 5.5" D • Standard weight including servos - 6lb

TruTrak Digiflight II P/N 11-02632
 TruTrak Digiflight II FLAT PK P/N 11-03142
Optional
 TruTrak Digiflight II W/GPS-S P/N 11-03144



DIGIFLIGHT IIG FLAT PACK • Built-in Digital Slaved Directional Gyro • Optional Flat Pack Mounting • Built-in Digital Slaved Directional Gyro • Digital Track Selector • GPS Nav Mode • Altitude Hold • Simple Intuitive User Interface • All Solid-State Sensors • Lighter and Smaller than Comparable System • True Control Wheel Steering • 12-28 volts • Dims - 1.6"H x 4.3"W x 5.5"D • Standard weight including servos - 6lb
 TruTrak Digiflight II G FLAT PACK P/N 11-03145



DIGIFLIGHT II VS • Fits Standard 2.25" Round Instrument Hole • Built-in Digital Slaved Directional Gyro • Digital Track Selector • GPS Nav Mode • Altitude Hold • 12-28 Volts • All Solid-State Sensors • Simple Intuitive User Interface • Climb and Descend on Vertical Speed • Trim Sensing Pitch Servo that Annunciates for Trim • Lighter and Smaller than Comparable Systems • True Control Wheel Steering* • Dims - 2.5"H x 2.5"W x 5.5"D • Flat Dims - 1.6"H x 4.3"W x 5.5"D • Standard weight including servos - 6lb
 TruTrak Digiflight II VS P/N 11-02633
 TruTrak Digiflight II VS FLAT P/N 11-03147



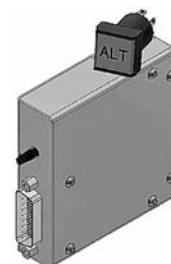
DIGIFLIGHT II VS G • Fits Standard 2.25" Round Instrument Hole • Optional Flat Pack Mounting • Built-in Digital Slaved Directional Gyro • Digital Track Selector • GPS Nav Mode • GPS Steering • Altitude Hold • All Solid-State Sensors • 12-28 Volts • Simple Intuitive User Interface • Climb and Descend on Vertical Speed • Trim Sensing Pitch Servo that Annunciates for Trim • Lighter and Smaller than Comparable Systems • True Control Wheel Steering* • Dims: 2.5"H x 2.5"W x 5.5"D • Flat Dims - 1.6"H x 4.3"W x 5.5"D • Standard weight including servos - 6lb
 TruTrak Digiflight II VS G W/GPS P/N 11-03148
 TruTrak Digiflight II VS G FLAT P/N 11-03149



DIGIFLIGHT II VS G V • Fits Standard 2.25" Round Instrument Hole • Optional Flat Rack Mounting • Built-in Digital Slaved Directional Gyro • Digital Track Selector • GPS Nav Mode • GPS Steering • Altitude Hold • All Solid-State Sensors • 12-28 Volts • Simple Intuitive User Interface • Climb and Descend on Vertical Speed • Trim Sensing Pitch Servo that Annunciates for Trim • Vertical GPS Steering (GPSV) • Dims: 2.5"H x 2.5"W x 5.5"D • Flat Dims - 1.6"H x 4.3"W x 5.5"D
 • Lighter and Smaller than Comparable Systems • True Control Wheel Steering* • Standard weight including servos - 6lb
 TruTrak Digiflight II VS G V RND P/N 11-05549
 TruTrak Digiflight II VS G V FLAT P/N 11-03151

ALTRAK ALTITUDE HOLD

• (Easy Installation)
 • Can be used alone or with any roll servo Autopilot
 • Only panel space required is for engage/disengage button
 • Solid-state gyroscopically-controlled pitch axis
 • Flight dynamics equal to higher priced systems
 • Control Wheel Steering
 • Available with vertical speed select (Altrak VS)
 • 12 Volts only
 • Programmer Dimensions 3"H x 0.9"W x 2.8"D
 • Standard weight including servo - 3 lb
 P/N 11-02032
 TruTrak Altrak VS P/N 11-02631



AV

TRUTRAK ADI / EFIS

PICTORIAL TURN AND BANK



This display is like an artificial horizon in roll and actually moves in unison with it. This makes the transition from viewing the horizon much easier than the reverse display of the turn coordinator. For much greater life and reliability, it uses a solid state gyro instead of a spinning rotor.

The Pictorial Turn & Bank is superior to a turn coordinator in all ways.

- It looks and flies like the roll display of an artificial horizon.
- It agrees with the real horizon, so one does not have to reverse his or her sensing when entering or exiting IMC.

- Even in the two inch size it provides more viewing area than the small moving aircraft in the three inch turn coordinator.
- The roll response is without lag just as it is in an artificial horizon.
- Of most importance, it is easier and safer for the non-instrument pilot to fly.
- 12-28 Volts - Weight-6oz

- 2-1/4"..... P/N 11-02834.....
- 3-1/8"..... P/N 11-02628.....

TRUTRAK PICTORIAL PILOT



This autopilot combines the superb performance of our DigiTrak with a real aircraft flight instrument, the Pictorial Turn & Bank. It also contains a digital DG for viewing when the autopilot is not engaged. When the autopilot is engaged this display becomes the track selector.

The Pictorial Pilot is the only low cost autopilot to provide a proven easy to fly flight instrument. This is most important to the non-instrument pilot who

would find it very difficult to fly a moving light bar in IMC.

The Pictorial and DigiTrak autopilots are the only ones in this class to provide a drift free magnetic mode when GPS is lost. In the flight instrument mode (AP - off) one must see to believe. In one instrument, the pictorial display combined with the DG display is as easy to fly as the roll display of an artificial horizon in combination with a conventional DG. In the autopilot mode it provides by far the simplest and thus easiest to use mode control and information display of any product in its class. 12-28 Volts - Weight-6oz

- 2-1/4"..... P/N 11-02833.....
- 3-1/8"..... P/N 11-02629.....

TRUTRAK ADI PILOT II



Features:

- GPS-Slaved solid-state DG
- Digital Ground Track Selector
- GPS Nav Mode
- True Control Wheel Steering
- Altitude Hold
- Altitude adjust for baro change
- Built-in ADI: Bank angle is instantaneous gyro data. Pitch is gyro enhanced vertical speed. Direction is an electronic DG showing track. Extreme bank angle is enunciated by flashing red arrows which indicate required stick motion to correct unusual attitude. Low airspeed warning is enunciated by flashing A-S on the display.
- 12-28 Volts only
- Programmer Dimensions 3.4"H x 3.4"W x 4.7"D
- Standard weight including servo 6lb
P/N 11-04675

TRUTRAK ADI FLIGHT INSTRUMENTS



Bank angle is instantaneous gyro data. Pitch is gyro enhanced vertical speed. Direction is an electronic DG showing track. Extreme bank angle is enunciated by flashing red arrows which indicate required stick motion to correct unusual attitude. Low airspeed warning is enunciated by flashing A-S on the display. Solid state rate gyros for pitch and roll. • Built in GPS (optional) • Backup battery (optional) • Power:

- 12-28 Volts
- ADI 2 is 2.5"H x 2.5"W x 6.75"D.
- ADI 3 is 3.4"H x 3.4"W x 4.6"D.

| Description | Part No. | Price |
|------------------------------------|----------|-------|
| TruTrak ADI 2 With GPS Option | 11-05735 | . |
| TruTrak ADI 2 Without GPS | 11-05736 | . |
| TruTrak ADI 3 With GPS (LAS) | 11-04422 | . |
| TruTrak ADI 3 Without GPS LSA | 11-02969 | . |
| TruTrak ADI 3 With GPS (LAS) | 11-04422 | . |
| TruTrak ADI 3 With GPS 120KNT + | 11-05654 | . |
| TruTrak ADI 3 Without GPS 120KNT + | 11-05655 | . |
| Accessories | Part No. | Price |
| TruTrak ADI Back-up Battery 28V | 11-04423 | . |



11-05965



11-05966



11-05970



11-05968

TRUTRAK EFIS SG

Like TruTrak Flight Systems autopilots, when the power setting is not sufficient to comply with altitude or vertical speed commands, the **FLIGHT DIRECTOR** transitions to an airspeed mode in which airspeed is held at or above a minimum value pre-set to the specific aircraft. The result is the highest level of Safety.

To initiate the **ARRIVAL TRANSITION** press CRS - set the HSI course pointer to the selected runway direction - press APPR - then, using the topilot fly the arrival path to the

flight director or au-selected runway. This will work from any direction.

The main thing that sets this new EFIS apart from other units is flyability

Beyond flyability is ease of operation - The use of labeled soft keys makes the unit so simple to operate that a manual is not even necessary. This is also true when operating the optional built-in autopilot.

Picture quality second to none - While other comparably priced systems use hard-to-read single-pixel lines and text, this system is bold and readable (more like the painted lines in good old steam gauges). All lines in the display are smoothed (anti-aliased) to give photo-quality appearance. The 60-Hz refresh rate provides silky smooth display movement.

Sunlight readability and viewing angle beyond all others. - No other system in the same price range can even compare when it comes to sunlight readability. This system is readable in ALL lighting conditions and can be seen at the widest viewing angle of any system in comparable price range.

| Description | Part No. | Price |
|--|----------|-------|
| TruTrak EFIS SG Diagonal Corner With High Bright Display | 11-05965 | . |
| TruTrak EFIS SG DC Corner Bezel | 11-05966 | . |
| TruTrak EFIS SG Front Mount With High Bright Display | 11-05967 | . |
| TruTrak EFIS SG Front Mount | 11-05968 | . |
| TruTrak EFIS SG AS-HB Stack | 11-05969 | . |
| TruTrak EFIS SG Avionics Stack | 11-05970 | . |

CT PILOT SERIES AUTOPILOTS CT PILOT



- Fits 4.1" x 1.4" Cut-out
- Built-in Digital Slaved Directional Gyro
- Digital Track Selector
- GPS Nav Mode
- Altitude Hold
- Simple Intuitive User Interface
- All Solid-State Sensors
- Lighter and Smaller than Comparable Systems
- GPS Steering (GPSS) Optional (DigiFlight IIG FP)
- True Control Wheel Steering
- 12-28 volts
- Dimension - 4.3" H x 1.6" W x 5.5" D

- Standard weight including servos - 6lbs

| Model | Type | Part No. | Price |
|------------|----------|----------|-------|
| CT Pilot | Vertical | 11-06412 | . |
| CT Pilot G | Vertical | 11-06414 | . |

CT PILOT VS

- All DigiFlight II Features plus
- Climb and Descend on Vertical Speed
- Trim Sensing Pitch Servo that Annunciates for Trim
- GPS Steering (GPSS) Optional (DigiFlight IIG FP)
- 12-28 volts
- Dimension - 4.3" H x 1.6" W x 5.5" D
- Standard weight including servos - 6lbs

| Model | Type | PN | Price |
|--------------|----------|----------|-------|
| CT Pilot VS | Vertical | 11-06415 | . |
| CT Pilot VSG | Vertical | 11-06416 | . |

CT PILOT VSGV

- All DigiFlight II Features plus
- GPS Steering (GPSS)
- Vertical GPS Steering (GPSV)
- 12-28 volts
- Dimension - 4.3" H x 1.6" W x 5.5" D
- Standard weight including servos - 6lbs

| Model | Type | PN | Price |
|---------------|----------|----------|-------|
| CT Pilot VSGV | Vertical | 11-06417 | . |

TRIO AVIONICS – LONESTAR

TRIO AVIONICS



EZ PILOT AUTOPILOT - The EZ Pilot autopilot is a single axis, gyro stabilized roll control autopilot. It is a modern navigation system designed to accurately track a GPS flight plan or "Go To" course that is entered into a handheld or panel mount GPS receiver. Track, Course (similar to a heading bug), and Intercept modes are available to the pilot. Pilot Command Steering simplifies course changes. Full data display of all GPS input data. Fits standard 3-18" instrument cutout. Length: 3". Weight – Control Head: 6 ounces/ 169 grams Gold Standard Servo: 27 ounces/ 765 grams P/N 11-06547



PRO PILOT AUTOPILOT - The Pro Pilot is a GPS enabled autopilot that provides high-quality 2 axis navigation solutions for Experimental and LSA aircraft. It uses solid-state MEMS gyros for pitch and roll stability. Horizontal and Vertical functions may be individually enabled. Horizontal navigation provides three modes of control – Track, Course and Intercept. Vertical navigation functions offer Altitude Hold, Climb/Descent with Airspeed Limiting, and Altitude Pre-Select. Multi-color LEDs and a bright PLED display screen provide a clear picture of functions and displayed data (LCD screen available upon request). Basic operation is as simple as pushing a button, while advanced features are easily accessible by means of illuminated tactile buttons and a rotary encoder. A slip-skid indicator and a turn rate display duplicate the functions of a standard turn rate coordinator. Advanced Safety Features – "G" force limiting, automatic servo disconnect on takeoff, "intelligent" servos with independent emergency disconnect authority, horizontal Track Offset Positioning, and Trio's "automatic 180 degree turn" feature (for VFR pilots encountering poor weather). Fits a standard 3-1/8" instrument cutout. Length: 6". Weight – Control Head: 12 ounces/ 340 grams Each Servo: 27 ounces/ 765 grams P/N 11-06548

Auto-Trim option for existing aircraft electric pitch trim system - P/N 11-06549



EZ-1 ALTITUDE HOLD - Single axis altitude control system. Provides pitch stabilization and accurate altitude hold using MEMS gyro and sensitive altimeter. LCD switch/display provides a graphical message display for system messages, alerts and warning advisories. Rotary encoder allows fine altitude adjustments. "G" force limiting to prevent high wing stress – alarms and disconnects when sensing high sustained G loads. Remote servo disconnect. Senses and displays pitch trim requirements. Weight – Electronic Components: 8 ounces/ 226 grams Servo: 27 ounces/ 765 grams. P/N 11-06550

EZ-2 ALTITUDE CONTROL - Same physical configuration and features as EZ-1 but adds climb/descent capability and airspeed capture. Pitot port on the electronics module enables airspeed sensing to prevent stalling or over-speeding the aircraft. Pilot Command Steering allows climbs and descents on vertical speed or airspeed. P/N 11-06551

EZ-3 ALTITUDE CONTROL - Same as EZ-2, but adds Altitude Pre-Select. Pilots may enter climb/descent rates and target altitude. Upon reaching the target altitude the EZ-3 will level the aircraft and automatically enter Altitude Hold mode. P/N 11-06552

Auto-Trim option for existing aircraft electric pitch trim system - P/N 11-06549

All altitude control systems employ the Trio Gold Standard servo.

ACCESSORIES

EZ Pilot Harness Assembly P/N 11-06702
EZ Altitude Control Harness Assembly P/N 11-06703
ProPilot AutoPilot Harness Assembly..... P/N 11-06704
Gold Standard Servo..... P/N 11-06705



COMMANDER 2000K

This high power unit is pre-wired in the "take home" mode. Simply slide your KLN90A/B, KLN89/B, KLN135 Series, and KLX-135 Series GPS or GPS-COM, into the tray of the Commander 2000K and explore your GPS receiver as if you were flying. Practice actual flight or approach at home, store flight plans, and learn all of your units functions. Update your units database via the internet using a desktop or laptop computer & save up to \$300/year. Recommended by Allied-Signal in your operators handbook in the take home mode section. Appropriate connector is shipped free via UPS Blue Label from the factory. Additional connectors, cooling fan, Argus and moving map interface available. 2000K Station.....P/N 11-18478
2000K 220VAC.....P/N 11-04876

COMMANDER 2900 TRIMBLE 2101 24VOLT

Lone Star Aviation's Docking Station for the Commander 2900 2101/CUGR GPS System is designed to allow you to explore the FreeFlight Systems 2101/CUGR features in a non-flying environment. Ideal for Guard Units, EMS, Law Enforcement, DEA, Border Patrol, etc. staff training. Unit does not include cable. P/N 11-04926

COMMANDER 2900 KLN-900 DOCKING STATION



The Commander 2900K is Lone Star Aviation's Docking Station for BENDIX/KING/HONEYWELL KLN 900 DZUS-Mounted GPS. The portable docking station is designed to let you explore the KLN 900 features in a non-flying environment...in the comfort of your home or office. Operation is simple and fast, just slide your KLN 900 into the Commander's Tray and you are ready to go. P/N 11-04911

COMMANDER GARMIN GNS-430/530



Lone Star Aviation's Docking Station for Garmin's GNS 430/530 Flight Management System. The Commander is a portable Docking Station designed to let you explore the Garmin GNS 430/530 features in a non-flying environment. Features:•Simulate your route of flight and published approaches.

•Access sids and stars. •Program and store flight plans. •Simulate approaches. •Enter and store waypoints. •Reduce your learning curve. •Operating your GNS430/530 in flight will become automatic.

GNS-430..... P/N 11-04864
GNS -430 INT..... P/N 11-04865
GNS-530..... P/N 11-04866
GNS-530 INT..... P/N 11-04867



GARMIN COMMANDER GNS 480

The Commander 2000 GNS480 is a Docking Station designed to allow you to explore the Garmin GNS-480(CNX-80) features in a non-flying environment.

Features: * Simulate your route of flight and published approaches * Access sids and stars * Program and store flight plans * Simulate approaches * Enter and store way points * Reduce your learning curve * Operating your GNS-480(CNX-80) in flight will become automatic P/N 11-04916

COMMANDER 2900 KMD 150 & 250



Lone Star Aviation's 2900 Station has been designed for the KMD 150, KMD 250 equipment so that the user can practice their GPS, Display and all of it's functions in a non flying environment. The 1 port cooling fan (LS03-02013) plugs into the rear accessory panel and provides 6-8 CFM of cooling to the KMD 150/250 receiver. The KMD connectors plug into the rear panel of the Commander Station for an easy set-up so you can get right into the training mode. P/N 11-04922

COMMANDER STATION FOR C-5000



Lone Star Aviation's Commander Station has been designed for the Wulfsberg C-5000 Control Head equipment so that the pilot can practice GPS, control head functionality at his or her own pace in a non flying environment. The 1 port cooling fan (LS03-02013) plugs into the rear accessory panel and provides 6-8 CFM of cooling to the C-5000 receiver. P/N 11-04928

LONESTAR ACCESSORIES

| Description | Part No. | Price |
|-----------------------------------|----------|-------|
| 1 Port Dock Station Cool Fan | 11-04859 | . |
| Multi-Signal Converter | 11-04892 | . |
| KA-20 Mounting Bracket | 11-04873 | . |
| MX-20 Power Supply and Cable Kit | 11-04869 | . |
| USB to Serial Converter | 11-04884 | . |
| 150, 155, 165 Garmin Connector | 11-04899 | . |
| II Morrow with GX-55 | 11-04900 | . |
| II Morrow GX60 Connector | 11-04904 | . |
| II Morrow GX50 Connector | 11-04906 | . |
| CNX-80 Power / Simulation Harness | 11-04918 | . |
| Garmin 100 Connector | 11-04903 | . |
| 250, 300 Garmin Connector | 11-04902 | . |
| II Morrow 2001 Connector | 11-04901 | . |
| RF Magneto Filter | 11-04925 | . |
| USB Military Cable | 11-04891 | . |
| KLN-89B-94 Data Cable | 11-04882 | . |
| KLN-88-Power Cable | 11-04881 | . |
| KLN-35A Power Cable | 11-04880 | . |
| KLN-89B 94 Power Cable | 11-04879 | . |
| KLN-90A/B Power Cable | 11-04878 | . |
| KLX-135 Power Cable | 11-04874 | . |
| KLN-900 & A/C Panel | 11-04913 | . |
| KLN-900 Power Cable | 11-04912 | . |
| SD Converter TSO 24-13.8 VDC | 11-04894 | . |
| DC Converter TSO 24-16 VDC | 11-04895 | . |
| DC Converter 24-19VDC TSO | 11-04898 | . |
| 6 Port Cable Kit 36" | 11-04914 | . |
| 6 Port Cable Kit 60" | 11-04915 | . |



ELTS

EBC ELTS



Emergency Beacon Corporation's ELT's are among the most popular on the market today due to their size, weight and convenience. These ELTs do not use lithium batteries, include external antennas and no AD notes have ever been issued on them. Internal antennas and test switches are included with the ELTs. Helicopter EBC ELTs are also available on request. EBC-102A is the smallest cabin mounted ELT available. Operating the toggle switch on top of the unit allows manual activation or pre-flight testing of the EBC-102A. The EBC-502 is fully approved by the FAA and FCC under TSO-C91a and is satellite compatible. It uses a 9V battery

pack and comes complete with a handheld lanyard, mounting bracket, and batteries. It is easily installed and requires no external antenna or cable. **Note: EBC-102 portable ELT is manually operated only.**

- Pocket-Size EBC-102(150 mi. portable ELT) 11-17902.....
- 150 Mile ELT for aircraft installation EBC-102A.....
- 300 Mile ELT EBC-302.....
- 300 Mile ELT EBC-302V.....
- 2.5"Wx2"Dx8"H EBC-502.....
- EBC GS21 ELT Battery 11-04771.....

POINTER 3000 SERIES ELTS



The Model 3000 (AF/AP) and 3000 (AF) which have been in production for twenty years are now revised to incorporate the upgrades of RTCA DO-183 for emergency locator transmitters. The new models, designated 3000-10 (AF/AP) and 3000-11 (AF) are interchangeable with existing units in form, fit and function. The 3000-10 and 3000-11 transmitters incorporate an alkaline battery pack specifically designed to endure the short term extreme thermal variations and mechanical shock requirements of RTCA DO-183. Installed weight is 2.0 lbs. Emergency voice transmission is provided on the 3000-10 transmitter if desired. Size: 3 1/2"W x 7 5/8"H x 2-3/4"D.

- P/N 3000-10.....
- P/N 3000-11.....

- Accessories:**
- Battery pack, 2-year Alkaline ... P/N 11-17950.....
 - Mounting bracket assembly P/N 2017.....
 - Master switch guard kit P/N 2021.....
 - Remote panel switch kit P/N 2019.....
 - 2019-10 Remote switch kit..... P/N 11-05889.....
 - Fixed (remote whip) antenna ... P/N 3001.....
 - Coaxial antenna cable..... P/N 3002.....
 - Telescopic antenna w/tether P/N 2006.....

NARCO 910 & 10 ELT ANTENNA

Narco 910 & 10 ELT Antenna.....P/N 11-17310.....

ACK TECHNOLOGIES ELT MODEL E-01



This outstanding ELT from ACK Technologies meets or exceeds all of the current requirements of TSO C91-A as specified by the FAA. Exceeds required power output by over 100% and features a coherent beacon designed for satellite detection. Also included is a miniature instrument panel controller for verification and testing of proper operation of the unit. Rated for full salt water immersion which far exceeds FAA TSO requirements. Comes complete with mounting tray, portable external antenna, installation harness, and life raft tether. Uses standard duracell alkaline "D" cell batteries which eliminates high replacement battery costs. Size: 7.75" x 2.75" x 2.75". Wt.: 3.6 lbs. Model E-01 P/N 11-17960.....

- ELT Replacement antenna.....P/N 11-17961.....
- ACK E-01 ELT G-Switch E-01G..... P/N 11-05537.....

ACK E-01 REMOTE SWITCH



RCPI Unit / Remote Switch / E-01 (E-01-05).....P/N 11-05262.....

ACK 406/121.5 MHZ E-04 ELT



The all new E-04 ELT is a direct replacement for the more than 62,000 model E-01 ELT's (by ACK) on the market today. The new E-04 fits directly into the current E-01 mounting trays and uses the same remote control panel indicator. The E-04 external antenna will utilize your current antenna mounting and wiring installations.

Undergoing certification testing, ACK is not accepting orders for the E-04 until ELT certification process is complete.
Available: Approx. July 15, 2009

Features: * Accepts GPS position input data from Bendix/King, Garmin, Nema 0183 GPS * New antenna is swept back 20 degrees, and features a molded plastic base. * 5 watts @ 406MHz for 24 hours, and 100 Mw @ 121.5 MHz for 48 hours. * New simple plug in audible alert indicator. * New lithium battery pack offers a 5 year battery life, and makes it substantially lighter. * Can use Ameri-king remote panel indicator

| Description | Part No. | Price |
|--------------------------------|----------|-------|
| ACK E-04 406MHZ ELT KIT | 11-06395 | . |
| Accessories | Part No. | Price |
| ACK E-01 TO E-04 RETRO FIT KIT | 11-06396 | . |

POINTER ELT 8000 SERIES



The COSPAS/SARSAT search and rescue network will discontinue monitoring the current 121.5/243.0 MHz frequencies as of Feb. 1, 2009. The 121.5/243.0 MHz frequencies will continue to be monitored on a voluntary basis by overflying aircraft and utilized by the current search and rescue organizations. After this date, the COSPAS/SARSAT will monitor only 406 MHz. The 406 MHz aircraft ELT, defined by COSPAS/SARSAT operational specifications, incorporates many new features and improvements for search and rescue.

To comply with the new requirements, Pointer, Inc is pleased to announce the Model 8000 series ELT. The transmitter design incorporates the functional and programming requirements of COSPAS/SARSAT specification CST.001, FAA RTCA DO-204 and TSO-C126. The Pointer ELT Model 8000 series transmits phase modulated aircraft identification data on the 406 MHz frequency to quickly identify an emergency. The unit also transmits 121.5 MHz frequency for airborne and ground search operations. Optional features include factory or field programming of the microprocessor as a separate module and internal GPS. The approval program is in process and have completed COSPAS/SARSAT testing. FAA testing has begun.

| Description | Part No. | Price |
|--|----------|-------|
| Model 8000-1(AF) Complete Unit | 11-07543 | . |
| Model 8000-1(AF) (H)* Complete Unit (H) Model is a helicopter version with four additnal G-switches to provide hemispherical activation. | 11-07544 | . |
| International Version | | |
| Description | Part No. | Price |
| Model 8000-1(AF) Complete Unit | 11-07545 | . |
| Model 8000-1(AF) (H)* Complete Unit (H) Model is a helicopter version with four additnal G-switches to provide hemispherical activation. | 11-07547 | . |
| Accessories | | |
| Description | Part No. | Price |
| Battery Pack | 11-07548 | . |
| Mounting Bracket | 11-07549 | . |
| Remote Switch | 11-07550 | . |
| Remote Antenna 3000-15 | 11-07551 | . |
| Pointer Remote Antenna Cable | 3002 | . |

ELT REPLACEMENT BATTERIES

We now offer the complete line of ELT replacement battery packs. These top quality battery packs are factory new & meet or exceed FAA TSO-C91a and are also Transport Canada approved. Request current price on any ELT replacement battery or ELT, not shown here. **NOTE: ELT Replacement Batteries are non-returnable due to shelf-life.**

| Application | Part No. | Price |
|----------------------------|----------|-------|
| BS2166 Elt Battery | 11-04758 | . |
| Dorne & M. (2 yr.) | 11-17920 | . |
| EBC102/302 (2 yr.) - GS-21 | 11-17925 | . |
| Garrett R88 (2 yr.) | 11-17930 | . |
| Meril/Larago (2 yr.) | 11-17935 | . |
| Martec Eagle | 11-17940 | . |
| CIR-11 | 11-17910 | . |

| Application | Part No. | Price |
|-----------------------|----------|-------|
| Narco (2 yr.) (ELT10) | 11-17945 | . |
| Pointer (2 yr.) | 11-17950 | . |
| Sharc-7 (2 yr.) | 11-17955 | . |
| Artex 110-4 | 11-17957 | . |
| EBC 502 - GS-52 | 11-02577 | . |
| BS2166 | 11-04758 | . |
| ELT-200 | 11-14935 | . |

P/N 11-04758

AV

ELTS

EBC 406-SERIES ELT'S



The EBC 406 is designed with the newest technology. These transmitters have encapsulated electronics and battery packs to provide for added protection against shock, moisture, and other environmental hazards. They have a built-in monitor that emits a loud beeping tone if the ELT is activated. They can be activated either automatically or manually. The EBC 406 AP-Series ELT should be installed in the cabin of the aircraft. Allows for easy removal of the ELT in case of an actual emergency

- just disconnect the external antenna coax cable and attach the survival antenna. The EBC 406 AF-Series should be installed in the tail section of the aircraft for those who prefer that ELT location. In that case, a remote unit is provided for the aircraft panel so the the ELT can be controlled by the pilot. Survival antenna is used when the transmitter is removed from the aircraft. All EBC 406 ELT's have a built-in self test feature that allows the pilot to check 406 power and the antenna-coax connection. Both cabin and tail mount ELT's use an external antenna. **Features:** • Operating Freqs: 406.028 MHz and 121.5 MHz • Output Power on 406 MHz: 5W for 24 Hours at -20C • Output Power on 121.5 MHz: 50mW min for 50 Hours at -20C • Operating Temperature: -20C to +55C • Useful Battery Life: 5 Years or 1 Hour of Cumulative Use • Modulation 406 MHz: Biphase L (16KOG1D) • Modulation 121.5 MHz: Swept Tone 1600Hz to 300 Hz, 2-4 • Times/Second • Automatic Activation: Velocity Change of 4.5 feet per Second • Altitude: 50,000 feet • Decompression: 8000 feet to 40,000 feet • High Pressure: -15,000 feet • Humidity: 95% for 50 Hours • Shock Performance: Withstands 500G's on 6 axes • Vibration: Withstands 10 G's • Immersion: Withstands 24 hours in Salt Water • Warranty: 2 Years, Made in the USA.

| Model | Description | Part No. | Price |
|---------------|---|----------|-------|
| EBC 406AP | For fixed wing aircraft. Includes transmitter, survival antenna, mounting bracket, external whip antenna with cable & battery pack. For cabin/cockpit installation. | 11-05917 | . |
| EBC 406AF | For fixed wing aircraft. Includes transmitter, survival antenna, mounting bracket, external whip antenna with cable, remote control monitor with connector kit & battery pack. For aircraft tail installation. | 11-05918 | . |
| EBC 406APH | Same as AP system but with omni-directional helicopter activation system. For helicopter use only. | 11-05919 | . |
| EBC 406AFH | Same as AF system but with omni-directional helicopter activation system. For helicopter use only. | 11-05920 | . |
| EBC 406HM | Cabin mounted tri-frequency ELT (406.028, 121.5 and 243.0 MHz) Non-reflective flat black for night vision equipment contractility. With integral antenna, omni-directional helicopter activation system and battery pack. | 11-05921 | . |
| EBC-406HM-INT | Int'l | 11-07240 | . |
| EBC 406APM | Same as EBC 406AP but finished in non-reflective flat black for night vision equipment compatibility. Tri-frequency signal. Comes with external rod antenna. | 11-05922 | . |
| EBC 406AFM | Same as EBC 406AF but finished in non-reflective flat black for night vision equipment compatibility. Tri-frequency signal. Comes with external rod antenna. | 11-05923 | . |
| EBC 406APHM | Same as EBC 406APM but with the addition of an omni-directional helicopter activation system. For cabin mounting. Comes with external rod antenna. | 11-05924 | . |
| EBC 406AFHM | Same as EBC 406AFM but with the addition of an omni-directional helicopter activation system. For tail mounting. Comes with external rod antenna. | 11-05925 | . |

ACCESSORIES

| Model | Description | Part No. | Price |
|----------|---|----------|-------|
| GS-46 | 5 year lithium battery pack for any of EBC's 406 ELTs | 11-05926 | . |
| BB-12 | Mounting bracket for EBC 406AP series ELTs | 11-05927 | . |
| BB-12M | Mounting bracket for EBC 406HM, APM and APHM | 11-05928 | . |
| BB-14 | Mounting bracket for EBC 406AF series ELTs | 11-05929 | . |
| RCM-1 | Remote Control Monitor for EBC 406AF series ELTs with connector kit | 11-05930 | . |
| ANT-406W | External whip antenna for both EBC 406AP and AF series ELTs. Two frequencies | 11-05931 | . |
| ANT-406T | Survival tape antenna for all EBC 406 ELTs. Three frequencies. | 11-05932 | . |
| ANT-406R | External rod antenna for helicopter or high speed use. For use with three frequencies 406 ELTs. | 11-05933 | . |
| ANT-406B | Blade antenna for high speed use. Three frequencies | 11-05934 | . |
| CB-1 | 6ft. cable between ELT and antenna | 11-05935 | . |
| Manual | Operation and Installation Manuals | 11-05936 | . |

AMERI-KING AK-451 PERSONAL LOCATOR BEACON



ACOSPAS-SARSAT & FCC approved, 406 MHz Satellite P-ELT Personal Emergency Locator Transmitter, triple (406 Satellite /243 Military /121.5 Civilian) MHz frequencies. Having triple frequencies insures your distress message reaches both NOAA Satellite Operation and US Air Force AFSR Ground Operation, Search and Rescue Team, with 100% confidence, due to transmitting on both 243.0 Military and 121.5 Civilian bands, for immediate ground search dispatch, narrowing the searching time to the minimum. The Position accuracy of the 406 MHz satellite signal is about 110 meters at 9.5 degree Cross Track Angle (found in Satellite Qualitative Test at a COSPAS-SARSAT approved Laboratory). Features:• Applicable to all Aviation Uses such as Flying, Gliding, etc. • Harsh/ Robust/ Heavy Duty P-ELT in an enduring composite Emergency Carrying Case. • Ultra long lasting Battery Package, up to 78 hours @ -20 deg C, end of life, 10 years useful life time Lithium type, LiMnO2, 4 D-Size. P/N 11-06305.....

AMERI-KING AK-450 ELT



The AK-450 ELT from Ameri-King is FAA TSO-C91a approved & meets FCC rule for improved satellite detection. It features voice transmitting capability, visual "on" lights for both ELT main unit and remote panel, and uses standard Duracell batteries (included). Includes low drag aircraft antenna, portable antenna, remote control panel, wiring and coaxial cable assembly, handheld lanyard web, mounting tray and clamp. Size: 4.27" w x 2.95" h x 5.64" l. Wt: 2 lbs., 10 oz. 2 yr factory warranty **ATTENTION:** 2009, the international COSPAS-SARSAT satellite system will no longer provide satellite-based monitoring of the 121.5/243 MHz frequency. After the date of the satellite termination, in 2009, 121.5 MHz signals transmitted from ELTs operating on the lower frequency will only be detected by ground-based receivers such as local airport facilities or air traffic control facilities or by overflying aircraft.....P/N 11-02790 ELT for helicopter (6 axes) AK450-1.....P/N 11-01249 AK-450 Cable AssemblyP/N 11-04973 AK-450 Remote SwitchP/N 11-04937 AK-450 Coaxial Assembly.....P/N 11-04938 2 Year WarrantyP/N 11-05793 AK-450 antenna 450017P/N 11-03303

AMERI-KING AK-451 ELT



*Mic jack feature not available on 406 MHz ELTs FAA TSO'd approved, EASA ETSO'd approved, 406 MHz ELT Emergency Locator Transmitter Types (AF) Automatic Fixed, & (AP) Automatic Portable. It transmits aircraft position data, immediately and accurately, on triple (406 Satellite /243 Military /121.5 Civilian) MHz frequencies. Having triple frequencies insures your distress message reaches both NOAA Satellite Operation and US Air Force AFSR Ground Operation, Search and Rescue Team, with 100% fully confidence, due to transmitting on both 243.0 MHz Military and 121.5 MHz Civilian bands, for immediate ground search dispatch. **Package Includes:** * AK-451 w/ Battery (AF/AP ELT) * Portable Antenna * Whip, Rod, or Blade Antenna * Remote Switch * Prefabricated 25 Foot Wiring Harness Assembly * Audible Buzzer Monitor * Six Foot Coaxial Cable Assembly * Mounting Tray * Velcro Holder * Portable Soft Case

| ELTS PROGRAMMED FOR US REGISTERED AIRCRAFT | | | |
|--|---|----------|-------|
| Model No. | Description | Part No. | Price |
| AK-451-2 | ELT W/ Whip and Port Antenna. | 11-06677 | . |
| AK-451-3 | ELT W/ Rod 3 and Port Antenna. | 11-06678 | . |
| AK-451-4 | ELT W/ Rod 4 and Port Antenna. | 11-06758 | . |
| AK-451-5 | ELT W/ Blade and Port Antenna. | 11-06679 | . |
| AK-451-6 | ELT 406/GPS/NAV POS/Whip and Port Ant. | 11-06680 | . |
| AK-451-10 | ELT Set With Auto Portable and Port ant. | 11-06683 | . |
| AK-451-11 | ELT Survival 406/243/121.5 MHz | 11-06684 | . |
| AK-451-12 | ELT w/ Multi Axes G Switch for Hel. & Dual Ant. | 11-06691 | . |
| AK-451-13 | ELT Set w/GPS & Opt Multi Axes | 11-06692 | . |
| AK-451-14 | ELT Set 406 Rod/Port Ant./Helicopter | 11-06970 | . |
| AK-451-15 | EL Set 406 for Helicopter | 11-06969 | . |
| AK-451-16 | ELT Set/Helicopter/Opt Multi Axes | 11-06971 | . |
| AK-451-17 | ELT Set/Helicopter/GPS/NAV POS | 11-06972 | . |
| AK-451-18 | ELT Set 406/GPS/NAV POS/Helicopter | 11-06973 | . |

| INTERNATIONAL PROGRAMMED ELTS - Can be programmed for international registered aircraft (specify when ordering). | | | |
|--|--|----------|-------|
| Model No. | Description | Part No. | Price |
| AK-451-CAN | ELT W/ Whip and Port Antenna. Canadian | 11-06966 | . |
| AK-451-INT | ELT with Whip and Port Antenna. Int. | 11-06968 | . |
| AK-451-INT | ELT with Rod 3 hole antenna | 11-07563 | . |
| AK-451-INT | ELT with Rod 4 hole antenna | 11-07566 | . |
| AK-451-INT | ELT with Blade antenna | 11-07568 | . |
| AK-451-HELI | ELT with Whip antenna heli. | 11-07560 | . |
| AK-451-GPS | ELT with GPS/NAV antenna whip | 11-07569 | . |
| AK-451-GPS | ELT with GPS/NAV antenna rod 3 hole | 11-07570 | . |
| AK-451-GPS | ELT with GPS/NAV antenna rod 4 hole | 11-07571 | . |
| AK-451-GPS | ELT with GPS/NAV antenna blade | 11-07572 | . |

| ACCESSORIES | | |
|--|----------|-------|
| | Part No. | Price |
| Installation Adapter Kit | 11-06988 | . |
| AK-451 ELT Replacement Battery | 11-06686 | . |
| ELT ID Software Reader | 11-06974 | . |
| Optional Mil Spec Remote wiring harness Assembly, 25' | 11-06760 | . |
| Whip Ant., General Aviation, 250 knots, 406/121.5MHZ | 11-06690 | . |
| Rod4, Business Jet, 350 knots, 406/243/121.5 MHz | 11-06761 | . |
| Bitty Pack Lithium, LIS02, 4D Cells, 87 Hrs Lasting, 5 Year Life | 11-06685 | . |
| Rod3, Business Jet aircraft, 350 knots, 406/243/121.5 MHz | 11-06689 | . |



KANNAD 406 ELT'S



KANNAD 406 AF (6D) - Designed to be installed near the tail and to be connected to an outside antenna. A sophisticated 6 way "shock sensor" system will activate the ELT automatically in the event of a crash. Its small size and light weight makes it ideal for any helicopter. The "Mounting Bracket, 1 Strap" is not included. Features: * Automatic Fixed ELT * Specifically designed for aircraft or helicopters * Fitted with 6 G-switches * Three frequency transmitter (121.5 / 243.0 / 406 MHz) * 6 year battery life-time * Short circuit protection * Weight: 1260 gr (max)

P/N 11-05786



KANNAD 406 AF - Designed to be installed near the tail and to be connected to an outside antenna. A sophisticated "shock sensor" system will activate the ELT automatically in the event of a crash. Its small size and light weight make it ideal for general aviation. The "Mounting Bracket, 1 Strap" is not included. Features: * Optional Navigation Interface transmits GPS coordinates significantly shortening Search and Rescue response time. * Operates without aircraft power and incorporates an internal alarm/buzzer avoiding costly installation procedures. * Six year lithium manganese battery. * Three frequency transmitter (121.5 / 243 / 406 MHz) * Weight: (Including batteries) 2.44 lbs (1110 g) / max 2.60 lbs (1180g)

P/N 11-06285

406 AF ELT International..... P/N 11-06987



KANNAD 406 AF-H - Can be installed on board helicopter in flat position Features: * Optional Navigation Interface transmits GPS coordinates significantly shortening Search and Rescue response time. * Operates without aircraft power and incorporates an internal alarm/buzzer avoiding costly installation procedures. * Six year lithium manganese battery. * Rod (ANT300) or Blade (ANT650) ELT antennas sold separately. * Three frequency transmitter (121.5 / 243 / 406 MHz) * Weight: (Including batteries) 2.44 lbs (1110 g) / max 2.60 lbs (1180g) P/N 11-05790

406 AF-H ELT International..... P/N 11-07559



KANNAD 406 AS - The KANNAD 406 AS is a aeronautical survival beacon. Thanks to its small size and light weight, the Kannad 406 AS fits easily inside a liferaft. It is supplied with a floating collar. Features: * Battery replacement is only every 6 years. * Precise pinpointing (<1NM) due to the unparalleled frequency accuracy of the 406 transmitter. * Three frequency transmitter (121.5 / 243 / 406 MHz) * Weight (including battery, auxiliary antenna and floating collar) 2.53 lbs (1150 g)..... P/N 11-05787



KANNAD 406 SURVIVAL - Fitted with a water switch sensor. It is automatically activated when in contact with water. Emergency locator transmitter of type (S), the survival is supplied with a floating collar. Features: * Six year lithium battery. * Includes water sensor switch and is automatically activated when in water. * Three frequency transmitter (121.5 / 243 / 406 MHz) * Weight: (including battery, auxiliary antenna and floating collar) 3.031 lbs (1375 g)..... P/N 11-06287



KANNAD 406 AP - Installed near the tail and connected to an outside antenna. A sophisticated "shock sensor" system will activate the ELT automatically in the event of a crash. When removed from the bracket and connected to the auxiliary antenna, the Kannad 406 AP becomes an autonomous survival beacon operating on 3 frequencies (121.5/243/406 MHz). Features: Operates without aircraft power and incorporates an internal alarm/buzzer * Six year lithium manganese battery. * Three frequency transmitter (121.5 / 243 / 406 MHz) * Weight: (With battery, bracket, and auxiliary antenna) 2.84 lbs (1290 g)..... P/N 11-06284

406 AP ELT International..... P/N 11-07558



KANNAD 406 AP-H - Installed on board helicopter in a flat position. When removed from its bracket and connected to the auxiliary antenna, the Kannad 406 AP-H becomes an autonomous survival beacon operating on 3 frequencies. (121.5/243.0/406 MHz). The "Mounting Bracket, 1 Strap" is not included. Features: * Ultra small size and light weight ideal for any helicopter installation. * Optional Navigation Interface transmits GPS coordinates. * Operates without aircraft power and incorporates an internal alarm/buzzer. * Six year lithium manganese battery. * Three frequency transmitter (121.5 / 243 / 406 MHz) * Weight: (With battery, bracket, and auxiliary antenna) 2.84 lbs (1290 g)..... P/N 11-05788

406 AP-H ELT International..... P/N 11-07557



KANNAD 406 AF-COMPACT ELT KIT - Designed for all light aircraft requiring a very compact automatic fixed ELT that is fully FAA TSO-C126 approved. The robust and reliable shock sensor will automatically activate the ELT in the event of a crash, the pilot can also manually activate the ELT in case of emergency. Features: * Ultra small size and light weight ideal for any general aviation aircraft. * Six year lithium manganese battery. * Complete kit with install manual. * Two frequency transmitter (121.5 / 406 MHz) * Weight (Including batteries): 1.87 lbs (850 g) / max 1.92 lbs (875 g)..... P/N 11-05786

406 AF-Compact, International..... P/N 11-0631



KANNAD 406 XS-3 GPS

A personal COSPAS-SARSAT beacon with built-in-GPS. Complies with class 2 of the Cospas-Sarsat global system. Programmed with a unique serialised code that must be registered with national authorities. This enables the identification of the beacon owner as well as the environment where the beacon is used (land, air, marine). This information is vital for search and rescue operations to gain precious time. Comes with a very resistant pouch for multi-environmental use. The beacon is buoyant, watertight and remains attached to its pouch. Lies naturally flat on the ground for optimum use in hostile conditions. The antenna is easily unfolded when the beacon is used. An advantage is that the antenna folds back into place around the housing for protection P/N 11-06295

406 XS-3 International..... P/N 11-06620

KANNAD ANTENNAS

ANT300 - ROD ANTENNA - Small whip for radiation on the COSPAS-SARSAT 3 frequencies (121.5 / 243/406 MHz). Speed rating up to 300 - 350 kts. Metallic base plate with 3 fixing holes. BNC connector (female out). Impedance: 50 ohms. VSWR (relative to 50 ohms):<1.7:1. Weight: 0.33 lb (150 g). Antenna height: 15.56 in (395 mm) **Applications:** * AF-Compact, AF, AF-H, AS, AS-H P/N 11-06292

ANT 110 - AUXILIARY ANTENNA (TNC) - Turns Kannad ELT (AF & AF-H) into a portable survival unit. Stores under the velcro strap of the mounting tray. **Applications:** KANNAD 406 AS (TNC) and SURVIVAL model **Caution:** A KANNAD 406 AF associated with an ANT10 cannot be used as an KANNAD 406 AP even if it may look identical P/N 11-06289

ANT100 - AUXILIARY ANTENNA (BNC) - Auxiliary Whip antenna. Turns any Kannad ELT into a portable survival unit. Stores under the velcro strap of the mounting tray. P/N 11-06288

ANT200 - WHIP ANTENNA - Dual frequency antenna (121.5 / 406 MHz) Speed rating up to 250 kts. Can easily be installed through a single hole (Ø 13 mm, 0.515 in.) in the aircraft skin. BNC connector (female out). Impedance 50 ohms Antenna Height: 24 in (609.6 mm) **Applications:** AF-Compact P/N 11-06290

ANT650 - BLADE ANTENNA - Developed by RAYAN. Three frequency antenna (121.5 / 243 / 406 MHz) High performance low profile outside antenna designed for Corporate jets and airliners **Applications:** AF, AF-H, AS, AS-H "High Speed" Aircraft * JTSO and TSO P/N 11-06294

KANNAD ACCESSORIES

RC200 - REMOTE CONTROL - Outline Dimensions: 1.3 x 1.97 x 1.69 in (33 x 50 x 43 mm). 3-position red switch (ON, ARMED, TEST/RESET). D-SUB 9 pin connector with threaded locking device (UNC 4-40) .The Kit includes mating SUB-D9 connector for easier installation. **Applications:** AF-Compact, AF, AF-H, AP, AP-H **Switch is not waterproof. Cannot be installed flat.** P/N 11-06302

BAT300 - BATTERY REPLACEMENT KIT - **Application:** AF, AF-H, AP, AP-H, AS, Survival Comes with 3 cell battery pack, replacement o-ring, desiccant pack and replacement self locking nuts. P/N 11-06296

MOUNTING BRACKET 1 STRAP - Designed to fix the ELT with a retaining strap for quick removal in an emergency Qualified to maintain the ELT into place during 500 G shocks for 4 ms. **Applications:** AF, AF-H, AP, AP-H P/N 11-06301

PROGRAMMING DONGLE, ASSY - Din 12 connector with serial memory module (SMM) for programming operations. Fitted with a female DIN12 connector on RCP side instead of 19 Pts Jaeger connector. Contains the aircraft identification data Avoids the use of specific programming equipment such as PR600 + Computer in case of ELT replacement. **Compatible** with all KANNAD 406 ELTs P/N 11-06304

DIN12 CONNECTOR - For connection to Remote Control Panel, CSI44 interface module, dongle or programming equipment. **Compatible** with all KANNAD 406 ELTs P/N 11-06303

KANNAD PROGRAMMING DONGLE - A smart connector identical to the DIN12 that is used to store aircraft programming information. Once attached to the ELT wire harness it allows fleet operators to move any ELT to any other aircraft. The stored aircraft data will be automatically downloaded into the ELT. This connector is used in place of the DIN12 connector. Required for Navigation Interface connection. P/N 11-07088

KANNAD PROGRAMMING DONGLE INT - Can be use with the following Kannad ELT models: (AF-COMPACT, AF, AF-H, AP, AP-H, AS, SURVIVAL) P/N 11-06990

KANNAD 406 PR600 ELT PROGRAMMING TRAINER - Replaces the former PR550 Programming Equipment kit. P/N 11-07102

KANNAD 406 AS CARRY OFF BAG - P/N 11-07716

KANNAD 406 AS CARRY OFF BAG SHORT - P/N 11-07717

KANNAD 406 AS MOUNTING BRACKET - P/N 11-07718

KANNAD 406 AS LOCKING PIN - P/N 11-07719



ARTEX ME406 ELT

The Artex ME-406 is a single output ELT. Two emergency frequencies (121.5 and 406.028 MHz) utilize the same RF output, requiring only one coax cable to connect to the new series of Artex single input antennas.

The ELT automatically activates during a crash and transmits the standard swept tone on 121.5 MHz. Every 50 seconds for 440 milliseconds the 406 MHz transmitter turns on and transmits an encoded digital message to the Cospas/Sarsat satellite system. The mounting hardware for the ME-406 Series is compatible with all previous models of Artex 406 MHz, as well as the ELT200 Series, ACK, Pointer Model 3000 ELT and Narco ELT's. Current owners of Artex 2-frequency ELT can re-use the remote switch in the cockpit as well as the wiring harness from the cockpit to the ELT thus greatly reducing installation costs.

| USA PROGRAMMED ELTS | | | |
|---|----------|---|-------|
| Artex No. | Part No. | Description | Price |
| ME406 | 11-03492 | Artex ME406 ELT w/ whip antenna. | . |
| ME406 | 11-03493 | Artex ME406 ELT w/ rod antenna. | . |
| INTERNATIONAL PROGRAMMED ELTS | | | |
| Artex No. | Part No. | Description | Price |
| ME406 | 11-04652 | Artex ME406 ELT w/ whip antenna. Can be programmed for international registered aircraft (Specify when ordering). | . |
| ME406 | 11-06370 | Artex ME406 ELT w/ rod antenna. Can be programmed for international registered aircraft (Specify when ordering). | . |
| ACCESSORIES | | | |
| Description | Part No. | Price | |
| Artex ME406 whip antenna | 11-06978 | . | |
| 5-Conductor AWG 22 Shielded Wiring for ELT to Remote Switch Installation. Recommended by Artex. | 11-06580 | . | |
| Artex ME406 Replacement Battery Kit | 11-05277 | . | |
| Artex ME406 Mounting Tray | 11-07191 | . | |

ARTEX ME406 HM ELT



The Artex ME-406 HM is a single output ELT. Two emergency frequencies (121.5 and 406.028 MHz) utilize the same RF output, requiring only one coax cable to connect to the new series of Artex single input antennas.

The ELT automatically activates during a crash and transmits the standard swept tone on 121.5 MHz. Every 50 seconds for 440 milliseconds the 406 MHz transmitter turns on and transmits an encoded digital message to the Cospas/Sarsat satellite system. The mounting hardware for the ME-406 Series is compatible with all previous models of Artex 406 MHz, as well as the ELT200 Series, ACK, Pointer Model 3000 ELT and Narco ELT's. Current owners of Artex 2-frequency ELT can re-use the remote switch in the cockpit as well as the wiring harness from the cockpit to the ELT thus greatly reducing installation costs.

| USA PROGRAMMED ELTS | | | |
|---|----------|---|-------|
| Artex No. | Part No. | Description | Price |
| ME406 HM | 11-04966 | Artex ME406 HM ELT w/ rod antenna. | . |
| INTERNATIONAL PROGRAMMED ELTS | | | |
| Artex No. | Part No. | Description | Price |
| ME406 HM | 11-05670 | Artex MA406 HM ELT w/ rod antenna. Can be programmed for international registered aircraft (specify when ordering). | . |
| ACCESSORIES | | | |
| Description | Part No. | Price | |
| 5-Conductor AWG 22 Shielded Wiring for ELT to Remote Switch Installation. Recommended by Artex. | 11-06580 | . | |
| Artex ME406 replacement battery kit | 11-05277 | . | |

ARTEX C406 ELT



This system operates on the latest Search & Rescue (SAR) frequency of 406.025 MHz in addition to 121.5 243 MHz. Comes ready to connect to the Artex ELT NAV interface, which enables the ELT to transmit Latitude and Longitude data (P/N 455-6500). Includes ELT transmitter, LiMnO2 5-year battery pack, mounting bracket, remote switch, horn/buzzer, coax cables, high speed blade antenna, installation hardware, and installation and operation manual. The C406- antenna system is approved for aircraft operating speeds up to Mach 1, and C406-2 is approved for speeds up to 350 knots. The C406-1 uses a single connector antenna and a single coax feed cable to accommodate all 3 frequencies. COSPAS/SARSAT, FAA TSO C126 & JTSO-2C126 Approved. C406-1 ELT with 110-340 Blade Antenna ...P/N 11-02984 C406-2 ELT with Rod AntennaP/N 11-02985

ARTEX 2-WIRE REMOTE INTERFACE SYSTEM



This product allows an upgrade to an Artex 5-Wire 406 MHz ELT using an existing 2-wire configuration. The 2-Wire Remote Interface allows two wires from the existing wiring harness to connect the cockpit remote switch to the ELT for simplified, cost-efficient installation.

P/N 11-07776



ARTEX C406-N ELT

The Artex C406N is a single output ELT that incorporates latitude/longitude information from the aircraft navigation system. By use of an optional programming adapter, the ELT can also be programmed with the aircraft's 24-Bit

address for fleet operators as well as other custom programming. All 3 emergency frequencies (121.5/243.0 and 406.028 MHz) utilize the same RF output, which requires only 1 coax cable to connect to the new series of Artex single input antennas.

The ELT automatically activates during a crash and transmits the standard swept tone on 121.5 and 243.0 MHz. Every 50 seconds for 520 milliseconds (long message protocol) the 406.028 MHz transmitter turns on and transmits an encoded digital message to the Cospas/Sarsat satellite system. Also available is the Artex C406-N HM, which is equipped with a 6 axis "G" switch for helicopter installations.

| Artex No. | Part No. | Description | Price |
|---------------------------|----------|--|-------|
| C406-N | 11-02973 | Artex ELT 100 HM - Helicopter version of the basic ELT 110-4 System. | . |
| C406-N ELT KIT | 11-02983 | C406-N Kit- Includes Transmitter, 5-year Battery Pack, High Speed Rod Antenna (350 knots), Remote switch, Horn/Buzzer, Mounting Bracket, Coax Cable, Install Hardware and Manual | . |
| C406-N with Blade Antenna | 11-06503 | C406-N ELT with HSB Antenna (110-340) | . |

Artex ELT/Remote Switch Wire.....P/N 11-06580

ARTEX G SERIES EMERGENCY LOCATOR TRANSMITTER



The Artex G406-4 transmits on all 3 emergency frequencies (121.5/243.0 and 406 MHz). The ELT automatically activates during a crash and transmits the standard swept tone on 121.5 and 243.0 MHz. The G406-4 also transmits a 406.025 MHz encoded digital message to the Cospas/Sarsat satellite system, which allows for rapid identification and reduces Search and Rescue response time. The G406-4 has been tested to meet the rigorous requirements of TSO C126 including 500 G shock, 1000 pound crush as well as flame and vibration tests.

The G406-4 is available for use with Artex's low cost whip antennas or a sturdy fiberglass rod antenna. The G406-4 also may be interfaced with the Artex ELT/NAV Interface which enables latitude and longitude data to be transmitted as part of the 406.025 MHz message. The G406-4 is value priced to meet your ELT needs.

| USA PROGRAMMED ELTS | | | |
|---|----------|--|-------|
| Artex No. | Part No. | Description | Price |
| G406-4 | 11-01165 | Artex G406-4 ELT w/ whip antenna. | . |
| G406-4 | 11-01166 | Artex G406-4 ELT w/ rod antenna. | . |
| INTERNATIONAL PROGRAMMED ELTS | | | |
| G406-4 | 11-02991 | Artex G406-4 ELT w/ whip antenna. Can be programmed for international use. | . |
| G406-4 | 11-02992 | Artex G406-4 ELT w/ rod antenna. Can be programmed for international use. | . |
| ACCESSORIES | | | |
| Description | Part No. | Price | |
| Artex ELT/NAV interface | 11-05270 | . | |
| Artex G406-4 replacement battery | 11-02946 | . | |
| 5-Conductor AWG 22 Shielded Wiring for ELT to Remote Switch Installation. Recommended by Artex. | 11-06580 | . | |

ARTEX ME406/P ELT



The ME406/P (automatic, portable) is using the proven technology of the ME406 and attaching a removable wrap-around auxiliary flex antenna. It allows the disconnection of the ELT from the installed aerial antenna, removal of

the transmitter from a downed aircraft and after attaching the flexible antenna the distress call is again transmitted with full signal strength to reach the COSPAS-SARSAT satellites. Although Search and Rescue authorities recommend to remain in close proximity to the aircraft, using the ME406/P in it's portable version enables to wait for the Search and Rescue crews in areas sheltered better from the environment.

USA ProgrammedP/N 11-05671
International Programmed.....P/N 11-06985

ARTEX ELT NAV INTERFACE WITH 24 BIT



The Artex "ELT to NAV Interface" is designed to be connected between the aircraft's Flight Management Computer (FMC) or GPS receiver and the Artex 406 MHz series of ELT's. Receives continuous position updates from the aircraft's navigation system and translates it for use by the ELT. Upon activation, the ELT transmits digitally the Latitude and Longitude of the aircraft to the COSPAS/SARSAT satellite system. Allows SAR forces to launch an immediate mission to the last known position of the aircraft. P/N 11-05270

PERSONAL LOCATOR BEACONS



MICROFIX 406 GPS PERSONAL LOCATOR BEACON

In an emergency, the MicroFix™ transmits on 406 MHz via the COSPAS-SARSAT satellite system with the sender's unique registered, digitally coded distress signal. Once activated by a single button, the MicroFix's built-in 12 channel parallel GPS acquires then transmits LAT/LON message to reach local rescue centers with exact coordinates to within 110 yards (100 meters). Simultaneously transmits a signal on the 121.5 MHz (SAR homing frequency) to assist rescuers home in once in the general area. Additional unique MicroFix™ features include: Full functional self-test of internal circuitry, battery voltage and power, 406 MHz transmission and GPS acquisition—an ACR exclusive. 1.4 x 5.85 x 2.21 (35.5 x 149 x 56 cm), 10 oz (285 g). Typical operating life: 40 hrs at -4°F (-20°C) and 8 hrs at -40°F (-40°C). Two Class II lithium battery packs. Five-year replacement cycle (11-year storage). Waterproof up to 16 ft (5 m) at one hour and 33 ft (10 m) at ten minutes. A flat, stainless steel antenna wraps compactly around the unit for easy stowage, and is ready for rapid deployment. 406 GPS Beacon P/N 11-05531.....
406 GPS Canada..... P/N 11-05898.....

ACR 406 PERSONAL LOCATOR BEACON



TerraFix™ 406 GPS I and TerraFix™ 406 GPS I/O Personal Locator Beacons. The same quality that's made ACR the world leader in safety and survival technologies will be available to protect you outdoors. When you activate the TerraFix™ 406 GPS Personal Locator Beacon, it sends your signal to one of seven satellites that continually circle the globe. This signal is then relayed to a ground station so search and rescue personnel can be notified. In less than an hour, aid can be on its way. After several passes, the satellite pinpoints the PLB's location to within a 2.5 miles. Interface a GPS receiver or utilize the onboard GPS (P/N 2798.4 only), and your precise position is sent immediately. 406 Locator Beacon with out GPS..... P/N 11-04759.....
406 GPS PLB N/H Canada..... P/N 11-07176.....
406 GPS PLB Canada..... P/N 11-07177.....
Aerofix Mounting Holster..... P/N 11-07175.....

ACR AEROFIX / ONBOARD GPS 2799.4NH BEACON



Internal GPS, FastACQ GPS technology and an external GPS optical interface. The LAT/LON are transmitted, providing rescue agencies the exact position to within 110 yards. At a mere 3.03"L, 1.74"W, 5.71"H and weight of only 12 oz., this is the smallest and lightest P-ELT around! Full functional self test of internal circuitry, battery power, 406 MHz transmission, and GPS acquisition (P/N 2799.4 only). Floats to avoid loss if dropped in water, exceeds 1 meter (3.3ft) requirement, tested to 5 meters (16.5ft) Size: 1.74 x 5.71 x 3.03 in (4.4 x 14.5 x 7.7cm) Weight: 12 oz. (343 g) w/o holster; 13.3 oz. (378 g). Waterproof: 5m (16ft) @ 1 hour, 10m (33ft) @ 10 min. Deployment: Manual Operation: Deploy antenna, press both test buttons simultaneously Certification: FCC Approved (Model :PLB-200/201) Limited Warranty: 5 years P/N 11-07709.....
Aerofix Mounting Holster..... P/N 11-07175.....

FASTFIND PLUS 406 PLB WITH BUILT-IN GPS



In the event of an emergency, an alert signal is transmitted to COSPAS-SARSAT satellites and forwarded to a rescue coordination center within typically 3 minutes. The built-in GPS receiver will provide latitude and longitude coordinates to give a position to within typically 98 feet anywhere in the world. The Fastfind Max-G comes complete with lanyard and designer splashproof carry case to enable users to keep the PLB safely attached at all times. Features * 48-hour effective transmit time * Built-in GPS * Weighs just 9 oz. * Global alert to Cospas-Sarsat satellites * 406MHz transmitter * Frequency: 406.037MHz * 121.5MHz homing frequency * Positional accuracy to within 10 feet * Floats * Waterproof to 38 feet * Complete with lanyard and designer carry case * User replaceable battery packs (-4°C°F / -20°C) Specifications * Message Formats: PLB National, Standard and User Location Protocol as applicable. * Programming: Via RS232 light pen and windows based PC. * Temperature: Storage: -67°C°F to + 158°C°F (Class 1). * Operating: -4°C°F to + 131°C°F (Class 1) with class 1 battery pack. * Storage: -22°C°F to + 158°C°F (Class 2) Operating: -4°C°F to + 131°C°F (Class 2) with class 2 battery pack. * Battery life: 5 years storage then 48 hours operating * Sealing: BSEN 60945 temporary immersion MIL-STD-810F method 500.4 15000 feet altitude. * Weight: Approx. 10 oz. with -20 battery pack. * Approvals: R & TTE Approved, International Approvals to follow, and 0.75Cd Xenon discharge light. P/N 11-02256.....
Fastfind Max 6 406 PLB without GPS..... P/N 11-07470.....

SPOT SATELLITE PERSONAL TRACKER



The World's First Satellite Messenger. Whether you're just checking in, allowing others to track your progress, or calling for help - SPOT gives you a vital line of communication with friends and family when you want it, and emergency assistance when and where you need it. And since it utilizes 100% satellite technology, SPOT works around the world - even where cell phones don't. Message Export: You can now download your messages to 3 different formats: * KML (xml format compatible with Google Earth) 8 GPX - the GPS exchange format. Compatible with many different applications * CSV (comma separated ascii file) Functional Specifications: SPOT features four key functions that enable users to send messages to friends, family or emergency responders, based upon varying levels of need: * Alert 9-1-1 * Ask for Help - Request help from friends and family in your exact location. * Check In - Let contacts know where you are and that you're okay. * Track Progress - Send and save your location and allow contacts to track your progress using Google Maps™. Annual Service fee required. Please call or email for current rates, P/N 11-05829.....

SPOT CARRYING CASES - Carrying cases feature: * Ballistic nylon construction is rugged, yet lightweight * High Quality Heavy-duty rotating Nitelze™ clip for comfortable positioning * Designed for carrying on a belt when not in use, or shoulder strap while in use

Blue P/N 11-07216.....
Orange..... P/N 11-07217.....
Camo..... P/N 11-07218.....



XCOM GME MT410G PERSONAL LOCATOR BEACON WITH GPS

GME MT410G Accusat PLB (Personal Locator Beacon) 406 Mhz EPIRB with GPS. Features: *High location accuracy - MT410 within 5km, MT410G (with GPS) <45m. * Instantaneous 406MHz transmission - unique to GME. Less than 1 minute acquisition time (GPS version only). Unique digitally coded message enables Rescue authorities to confirm owners identity within minutes. * LED strobe light. * 7 year battery replacement period. Duration: in excess of 24 hours at -20C, longer at higher ambient temperatures. * Floats in water. * Supplied with Wrist/Neck strap, Carry Pouch with belt loops. * Meets UN requirements for transport as Non-hazardous cargo on board passenger aircraft P/N 11-05665.....

MCMURDO FASTFIND PLB WITH GPS



Get Found FAST with a PLB as small as a mobile telephone. Fits easily into backpacks, on lifejackets...put it just about anywhere, and get found anywhere in the world! No subscription fees are required, and weighs just 5.3 oz. Features: * Fastfind 210: Category 2, will not float * Programming: Optical infra-red link * Operation: Three-stage manual operation * Temperature : Class 2, -20°C to +55°C, (-4°F to +131°F) * Battery type and life: 9V Lithium; 5 years storage, then 24 hours operating * Sealing: Temporary immersion to 10m (30ft) for 5 mins. (IP 58, IPX7) * Weight: 150g (5.3 oz) * Altitude* MIL-STD-810E (10,000 feet) * Antenna: Deployable flexible vertical blade * 406MHz Transmitter * Frequency : 406.037MHz * Output power: 5 Watts, +/- 2dB 121.5 MHz Transmitter * Frequency : 121.5 MHz +/-3kHz * Output power: 50mW, +/-3dB PERP * Homer sweep direction: UP or DOWN * Applied Standards: COSPAS-SARSAT, T.001/T.007 class2, RTCM SC110 STD 11010.2, ETSI EN 302-152-1, AS/NZS 4280.2, NSS-PLB06 * SOS Flash: Morse code SOS pattern (30 operations allowed) * Haz-Mat: Non-hazardous Shipping: Air or ground..... P/N 11-07323.....

MCMURDO SMARTFIND EPIRB



Meeting the demands of both commercial mariners and recreational boaters, the new McMurdo SMARTFIND heralds the arrival of the next generation in EPIRB technology. This compact and stylish unit is available as a standard 406 MHz EPIRB. Features: * Stylish and compact * GMDSS compliant * Non-hazardous battery for safe and easy transportation * Available in manual or automatic housing * High brightness LED flashing locator lights * Comprehensive diagnostic and self-test facilities * 5 year warranty * 5 year battery life **Specifications:** * EPIRB temperature range: Operating -4°F to +131°F (Class 2), Storage -22°F to +149°F (Class 2) * EPIRB sealing depth: Waterproof to 32.8 ft. * EPIRB weight: 1.5 lbs. (657g) * Float-Free Housing & EPIRB: 4.7 lbs. (2,130 g) * Frequency: 406.028 MHz +/-3kHz * Output Power: 5W +/-2dB * Frequency: 121.5 MHz +/-3kHz * Output Power: 50mW +/- 3dB PERP * Sweep Direction: Programmable UP or DOWN * Temperature range Operating -4°F to +131°F, Storage -22°F to +158°F * Operational life: 48 hours minimum at -4°F * Battery Replacement: 5 Years from date of purchase Smartfind E5 406 EPIRB CAT I..... P/N 11-07382.....
Smartfind E5 406 EPIRB CAT II..... P/N 11-07383.....
Smartfind Plus GPS G5 EPIRB CAT I..... P/N 11-07384.....
Smartfind Plus GPS G5 EPIRB CAT II..... P/N 11-07385.....

ACCESSORIES FOR MCMURDO PLBS

FastFind 20 degree C Battery P/N 10-02817.....
FastFind 40 degree C Battery P/N 10-02816.....

CAMERA SYSTEMS - STRIKEFINDER®

SHADIN AMS 2000 ALTITUDE MANAGEMENT AND ALERT SYSTEM



With a range of feature previously unavailable in general aviation, the Shadin Avionics AMS-2000 Altitude Management and Alert System brings advanced instrumentation to new levels of function and affordability. The Shadin Avionics AMS-2000 uses information from Mode-C altitude encoder to deliver:

- Time-based Altitude Alerting, rather than fixed altitude buffers.
- Automatic calculation and display of Density Altitude.
- Real-time display of IVS without the inherent lag of your aircraft's static system.
- Calculation and display of Aircraft and Engine Performance • Percentage, at your demand.

These are but a few of the Standard features that are make the AMS-2000 the best value in advanced altitude monitoring instrumentation: 8 FAA approved. TSO C88a, DO-160B. • An appropriate audio and visual warning broadcast upon deviation outside a user-selected envelope surrounding your assigned altitude. • Smooth capture of your cruise altitude is facilitated by a level-off warning sounded and displayed at a user-defined distance from target altitude. • Alerts you just above your pre-selected Decision Height or MDA. • Gear-down reminder. • Displays density altitude and aircraft/engine performance percentage. • Digital display of altitude from -1000 to +62,000 feet in 100 foot increments. • Adjustable audio alert tone and level. • Compatible with most Mode-C transponders in current production. • Standard rectangular 1/2 ATI configuration. • Made in the U.S.A., the AMS-2000 features a 12-month warranty.

The AMS-2000 coupled with the Falcon Altitude Encoder provides all advanced altitude alert functions previously noted, plus the following high-resolution altitude management functions:

- Time-based level-off warning sounded and displayed 15 seconds from target altitude—smooth capture is assured regardless of climb or descent rate.
- Digital display of altitude from -1000 to +62,000 feet in high resolution, 10-foot increments.
- Digital reading of Instantaneous Vertical Speed (IVS).
- Deviation envelope is adjustable in 10 foot increments P/N 10-03711
- Falcon Altitude Encoder P/N 11-12035

STRIKE FINDER® DIGITAL WEATHER AVOIDANCE SYSTEM



The STRIKE FINDER® Digital Weather Avoidance System detects and analyzes the electrical activity emanating from thunderstorms within a 200 nautical mile (nm) radius of the aircraft. A unique graphic display plots an accurate, reliable and easily-interpreted picture of electrical activity, that you can use to circumnavigate the hazards associated with thunderstorms.

The STRIKE FINDER® System analyzes the individual strike signal properties to determine the bearing, range and severity of the activity. Strike data is plotted on the display as single orange dots by range and azimuth, in relation to the aircraft symbol ("heads up"). As the number of lightning strikes increase, so does the number of plotted strike dots. Cells start to form indicating increased lightning activity.

Must be installed by Advantage Avionics or another approved StrikeFinder dealer except for experimental aircraft.

- Strike Finder SF200011-20200
- Strike Finder with Ultra Bright Display11-00348
- Strike Finder Lightning Detector w/ Gyro11-04722
- Strike Finder Lightning Detector w/o Gyro ..11-04733
- Strike Finder Upgrade11-00349
- R.B.S. Module for Strike Finder11-00350

INSIGHT TAS 1000 AIR DATA COMPUTER WITH WINDICATOR



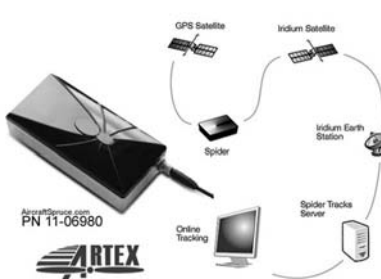
Today's modern avionics integrate many functions with your GPS, but standard installations leave many important features untapped. The TAS 1000 Multi-Function Data Source was specifically designed to supply all the information needed to fill in the missing pieces of your GPS or MFD display in real-time. TAS 1000

provides the pilot with a wealth of useful information all based on real time measurements of airspeed, altitude, temperature, fuel flow, heading, ground speed and track. Designed to interface with many brands of GPS, TAS 1000 unlock many previously hidden data pages in most GPS navigators. In addition to TAS 1000s in flight advisory function, TAS 1000 can also serve as a backup altimeter, airspeed indicator or fuel flow meter. The TAS 1000 is designed for use in any piston, turboprop, or jet aircraft and provides a full compliment of features when interfaced to a slaved compass system or HSI, fuel transducers, and compatible GPS system. TAS 1000 will deliver a useful subset of features even if all the interfaces are not available.

The Windicator is an integral part of the TAS1000 system. It presents a previously unavailable graphical display of the winds aloft in real time. The Windicator information alone is so useful that it makes the TAS 1000 installation worthwhile. TAS 1000 system options include an altitude encoder to provide altitude information to a transponder or GPS unit as well as alerting the pilot with overspeed, altitude, approach & altitude difference alerts.

MUST BE DEALER INSTALLED.

| Part No. | Insight No. | Description | Price |
|----------|-------------|---|-------|
| 11-00626 | 1000-001-P | TAS1000 Sys. for Piston Engine Aircraft (Incl. 1 Windicator) 18,000ft. Alt- 250kt max. | . |
| 11-00627 | 1000-001-T | TAS1000 for turbo-charged Piston & Turboprop aircraft (Incl. 1 Windicator) 55,000ft. Alt-500kt max. | . |
| 11-00628 | 1000-002 | Windicator (replacement) | . |
| 11-00629 | 1000-003 | Expansion Module (Alt. encoder, Alt. Serializer, & Overspeed warn.) | . |
| 11-00630 | 1000-004 | Fuel flow smart sensors for Piston Engine aircraft | . |



SPIDERTRACKS Spidertracks (A Portable Real-Time Flight Tracking Solution)

Portable global tracking solution using GPS and Iridium satellite network * Antennas integrated in spidertracks unit * Cost effective through portability (no installation certification required) * Simple to install and use * Iridium satellite

network - real time, gap free, guaranteed reliability * Can save money through flight-following and better planning/logistic management Track any mobile asset anywhere in the world. * Easy to use on completely secure web-interface, accessible from anywhere in the world * Simple data update configuration based on user definition * Reporting location based on distance, time or combination of both * Commercial configuration allows tracking of all units in a fleet with one log-in on website * Two-way communication between pilot and the operations based with the optional keypad P/N 11-06980



FLYCAM 1000 VIDEO MONITOR SYSTEM

Fuselage or wing mountable waterproof Day/Night • Color CCD camera coupled with a multi-purpose • 6.8 Inch LCD Video Monitor and complete cable assemblies. • Rugged design made to commercial aircraft quality and performance standards at a low price point • This high-resolution 6.8 Inch LCD Video Monitor delivers picture clarity and color reproduction to view clear detail and waypoints. • Robust Video Input processor rejects video noise and can operate with any +14V or +28V DC electrical system. **Features:** * Use to monitor forward and under views of aircraft that may be blocked during taxiing, take off, landing, or while in flight. Also useful for waypoint verification or landing gear monitoring. * Use in Day or Night with very low light CCD camera. * Ideal for all small aircraft particularly tail dragger type aircraft. *Multi-function LCD Video Monitor will work all NTSC sources so it can be used as a high quality monitor for additional video cameras, DVD players or moving map sources when not being used for the FlyCam. May be used with a simple low cost video input switch. * Simple Interface requires a single external momentary switch for Dimming controls of the LCD Monitor for Day or Night time operation. Three dimming modes: High, Medium, and Low Level (Night Mode). On Screen Display feedback shows the operational mode. * Shock and water resistant LCD Monitor and Camera components. High strength aluminum construction.

P/N 11-02889

AV

FLIGHT OP EFIS



FLIGHT OP EFIS

The Flight Op EFIS features advanced functionality including WAAS/GPS, 3D synthetic vision with integrated terrain warning and traffic, highway-in-the-sky (HITS), a full color moving map, flight planning and engine monitoring all displayed on large, sunlight-readable screens. The display units are available in either portrait or landscape orientation to accommodate a variety of instrument panels. With a Dual screen package, the second display unit can operate as either a second EFIS or a powerful MFD, capable of displaying a full-color moving map with traffic, terrain and weather overlays, a full-screen engine monitoring page, or an approach view showing both lateral and vertical approach views. All Sport EFIS and Flight Op EFIS packages include an AHRS, a WAAS/GPS receiver and an air data computer. Display Units can be upgraded to add an external video interface to support a FLIR camera or other video input. Contact us for ordering instructions for the FLIR/Video interface.



Landscape EFIS

Portrait MFD Approach View

Portrait MFD Engine Monitor

- Sport EFIS Single (8.4" Portrait) P/N YENS00-122000
- Sport EFIS Single (8.4" Landscape) P/N YENS00-124000
- Sport EFIS Dual (8.4" Portraits) P/N YENS00-222320
- Sport EFIS Dual (8.4" Landscapes) P/N YENS00-224340
- Flight Op Single (10.4" Portrait) P/N YENT00-121000
- Flight Op Single (10.4" Landscape) P/N YENT00-123000
- Flight Op Dual (10.4" Portraits) P/N YENT00-221310
- Flight Op Dual (10.4" Landscapes) P/N YENT00-223330

CALL FOR PRICING ON ALL PACKAGES

Engine interface unit and engine/fuel probes are ordered separately as a package depending upon the engine that is installed in your aircraft. Contact us for ordering instructions.

FLIGHT OP INTEGRATED

Flight Op Integrated is the evolution of experimental avionics. The normal cluster of radios, GPS receiver, and transponder are removed and replaced with remotely mounted components. Radio frequencies are tuned and transponder codes are set in the Integrated EFIS and MFD display units. Flight Op Integrated is offered in eight standard packages or custom packages may be specified by choosing individual components to suit specific needs. Integrated packages feature display units with additional communications channels to support more devices than the standard Flight Op packages. "Single" packages include a single display unit while "Dual" packages include two display units. All packages include an AHRS, a WAAS capable GPS receiver, an air data computer, a Mode C transponder, dual Comm radios, a VOR/LOC/GS receiver, an audio panel with marker beacon and a wiring harness¹ to support all of these components. Additional display units can be added to a package for an additional price. The Integrated packages can support up to 4 display units. Display Units can also be upgraded to add an external video interface to support a FLIR camera or other video input. Contact us for ordering instructions for the FLIR/Video interface.

- Sport IFR Single (8.4" Portrait) P/N YERS10-162000
- Sport IFR Single (8.4" Landscape) P/N YERS10-164000
- Sport IFR Dual (8.4" Portraits) P/N YERS10-262720
- Sport IFR Dual (8.4" Landscapes) P/N YERS10-264740
- IFR Single (10.4" Portrait) P/N YERT10-161000
- IFR Single (10.4" Landscape) P/N YERT10-163000
- IFR Dual (10.4" Portraits) P/N YERT10-261710
- IFR Dual (10.4" Landscapes) P/N YERT10-263730

1 – Customer specifies cable lengths for wiring harness only - no other modifications are provided

CALL FOR PRICING ON ALL PACKAGES

Engine interface unit and engine/fuel probes are ordered separately as a package depending upon the engine that is installed in your aircraft. Contact us for ordering instructions.

AV

MODE CONTROL PANEL



Aerosonic is the only experimental EFIS manufacturer to offer a Mode Control Panel (MCP) commonly found on commercial jet flight decks. The MCP reduces pilot workload by allowing the flight control mode or baro setting to be adjusted with the push of a button or turn of a single knob.

Mode Control Panel P/N M1000-10000

CALL FOR PRICING

RADIO CONTROL PANEL



The RCP reduces workload by allowing the pilot to set radio frequencies without the use of the OP Integrated soft keys. The RCP is available in a portrait (vertical) or landscape (horizontal) orientation to allow for a variety of mounting locations in the instrument panel or anywhere it is convenient.

Landscape RCP P/N RC10L-10000

Portrait RCP P/N RC10P-10000

CALL FOR PRICING

INTEGRATED AVIONICS SYSTEM (IAS)

Complete Instrumentation, Communication and Navigation Solution
FLIR/VIDEO INTERFACE INCLUDED



The Integrated Avionics System (IAS) represents the state-of-the art in EFIS for the experimental market. This is the only truly integrated glass panel system available that includes WAAS/GPS, all radios and transponder, synthetic vision and HITS and a FLIR/Video interface in a single package. The IAS-E features two (2) 10.4" landscape display units with integrated controls for controlling remotely mounted communication and navigation radios.

IAS-E P/N YEAT10-243530

CALL FOR PRICING

Engine interface unit and engine/fuel probes are ordered separately as a package depending upon the engine that is installed in your aircraft. Contact us for ordering instructions.

DYNON

DYNON EFIS-D10A



Dynon's EFIS-D10A is the most popular Electronic Flight Information System on the market today. This instrument fits into a standard 3-1/8" panel hole, making it an ideal candidate for replacing vacuum and electric attitude indicators. This innovative design consolidates all your flight instruments into a sunlight-readable, 4" diagonal, color LCD. Key safety features include Dynon's optional Angle-of Attack/ Pitot design that alerts pilots of potential stall conditions and an optional Li-ion backup battery which will keep the instrument running for 2 hours in the event of a power bus failure.

Instruments included: • Attitude Indicator • Airspeed Indicator • Altimeter • Vertical Speed Indicator • Gyro-Stabilized Compass • Heading • Turn Coordinator/Ball • Turn Rate • Clock/Timer • G-Meter/Voltmeter • Angel-of-Attach(w/ optional Dynon AOA pitot) • HSI • Serial altitude encoder output to your transponder ALL SENSORS INSIDE -Includes 15 solid-state sensors all inside the instrument housing eliminating any complicated installation problems. If desired, an optional external compass/magnetometer and outside air temperature probe may be added to your system. Not for certified aircraft.

EFIS-D10A Instrument (with out battery) P/N 10-00844.....

EFIS-D10A OPTIONS

| Description | Part No. | Price | Description | Part No. | Price |
|--------------------------------|----------|-------|---|----------|-------|
| Internal Li-Ion Backup Battery | 10-00755 | . | AOA/Pitot Probe (unheated) | 10-01157 | . |
| Remote Compass (EDC-D10A) | 10-01046 | . | Wiring Harness | 10-01158 | . |
| OAT Probe (requires EDC-D10A) | 10-01823 | . | Encoder Converter Module (serial to parallel con- verter for gray code transponders) | 10-01159 | . |
| D10 Flush Mount Bracket | 10-00757 | . | USB-Serial Converter | 10-01824 | . |
| Optional AP74 Vertical | 10-03565 | . | | | |
| Optional AP74 Horizontal | 10-03566 | . | | | |

DYNON EFIS-D100



Dynon's EFIS-D100 is the most affordable large screen Electronic Flight Information System on the market today. Based on the best-selling EFIS-D10A, the 7" wide-screen display features large, easy to read text and graphics and is capable of displaying multiple pages side by side in a split-screen format. Includes all of the instruments and features of the EFIS-D10A.

EFIS-D100 System

(includes remote compass, mounting tray & USB-serial converter).....P/N 10-01705\$2,339.00

EFIS-D100 System with Super Bright ScreenP/N 10-02155\$2,539.00

EFIS-D100 OPTIONS

| Description | Part No. | Price | Description | Part No. | Price |
|--------------------------------|----------|-------|---|----------|-------|
| Internal Li-Ion Backup Battery | 10-00755 | . | Wiring Harness | 10-01158 | . |
| OAT Probe | 10-01823 | . | Encoder Converter Module (serial to parallel con- verter for gray code transponders) | 10-01159 | . |
| AOA/Pitot Probe (unheated) | 10-01157 | . | | | |

DYNON EMS-D10 ENGINE MONITORING SYSTEM

Ergonomically engineered engine monitor that blends traditional analog gauges with newer digital technologies to provide a user-friendly instrument that enhances safety and peace of mind. With up to 27 separate inputs available, the pilot's workload is significantly reduced as the EMS-D10 continuously monitors all sensor inputs for the powerplant, fuel and other miscellaneous systems and immediately annunciates any abnormality requiring attention. A multi-page display environment provides pilots with an excellent systems overview coupled with the added capability of presenting additional detail upon demand to optimize overall management of the various systems. Color graphic screen presentations promotes easy visual scanning for interpretation of the current measurements relative to their normal/abnormal operational limits. When connected via the Dynon bus, the EMS-D10 can display data from any Dynon EFIS.. To keep the look and feel of the EFIS series, the EMS-D10 utilizes the identical sunlight visible, color display, keypad and bezel that preserves the look and feel while additionally allowing greater panel uniformity. Once past the common user interface, the electronics support are very different between the EFIS series and EMS-D10 engine monitoring system. EMS-D10 Instrument only P/N 10-01160.....

COMPLETE ENGINE PACKAGES

(EMS-D10 Engine Monitor, engine sensors and 2 wiring harnesses)

| Description | Part No. | Price | Description | Part No. | Price |
|---|----------|-------|-------------------------------|----------|-------|
| EMSKIT-L4C. 4Cyl Lycoming/Continental Package (Carbureted) | 10-01161 | . | Capacitance to Volt Converter | 10-02159 | . |
| EMSKIT-L4F. 4Cyl Lycoming/Continental Package (Fuel Injected) | 10-01162 | . | Fuel Flow Sensor | 10-01165 | . |
| EMSKIT-L6C. 6Cyl Lycoming/Continental Package (Carbureted) | 10-01163 | . | USB-Serial Converter | 10-01824 | . |
| EMSKIT-L6F. 6Cyl Lycoming/Continental Package (Fuel Injected) | 10-01164 | . | D10 Flush Mount Bracket | 10-00757 | . |
| EMSKIT-RTX. 4Cyl Rotax 912/914 Package | 10-01830 | . | EGT Thermcouple Ext Wire | 10-01167 | . |
| EMSKIT-J22. 4Cyl Jabiru 2200 Package | 10-01832 | . | CHT Thermcouple Ext Wire | 10-01168 | . |
| EMSKIT-J33. 6Cyl Jabiru 3300 Package | 10-01834 | . | | | |

EMS OPTIONS

DYNON HS34 HSI EXPANSION MODEL



Optional expansion module that extends the HSI function already built into and displayed on Dynon's EFISs. This panel-mounted device not only expands the HSI functionality but also enables several new features for any Dynon EFIS, EMS or FlightDEK instrument to which it is networked. Offers greater flexibility when configuring new aircraft panel systems and facilitates future expansion if so desired. Available in the horizontal and vertical mount configurations. Allows Dynon

products to be interfaced to multiple radios and GPS devices at the same time. Includes multiple interfaces to accommodate analog, ARINC-429 and RS-232 inputs plus signals from marker beacon receivers and DME devices. Superior User Interface. Backlit to facilitate night flight conditions. Separate knobs are used for setting the Heading, the Course (OBS) or entering general purpose Values. NAV and Bearing Source buttons that facilitate independent selection over each input. Pilots receive feedback of the currently selected navigation source type from separate GPS and NAV indicator lights. Network connected to Dynon's line of avionics via the Dynon Smart Avionics Bus (DSAB). This two-wire connection not only simplifies wiring but extends individual module benefits to multiple interconnected Dynon instruments. Dimensions: 1.639" wide x 4.903" high x 4.951" deep. Panel Cutout: 1.50" wide x 4.75" tall (3.81 x 12.07 cm). Dynon HS34 HSI Expansion Model - VerticalP/N 10-02590 Dynon HS34 HSI Expansion Model - Horizontal..... P/N 10-02773.....

DYNON AP 74 AUTOPILOT SERVOS



Your Dynon EFIS-D10A, EFIS-D100, or FlightDEK-D180 is your autopilot! Just add servos! For added ease-of-use, the optional AP74 Dedicated Autopilot Interface Module adds panel-mounted controls and LED status lights to your autopilot. It allows you to choose (pre-arm) which of magnetic heading hold, track hold, NAV mode, and altitude hold will be engaged

when you turn on the autopilot. Servo + Mounting Kit Packages:

| Description | Part No. | Price |
|--|----------|-------|
| RV-6 Roll Servo + Mounting Kit (Includes Servo mounting kit RV-6 roll (fuselage):101020-001, pkg SV32L (long output arm): 100854-001 | 10-03555 | . |
| RV-7/8/10 Roll Servo + Mounting Kit (Includes Servo Mounting kit- RV-7/8/10 roll (R wing): 101020-003, pkg SV32 (std. output arm): 100854-000 | 10-03556 | . |
| RV-9 Roll Servo + Mounting Kit (Includes Servo Mounting kit-RV-9 roll (R Wing):101020-004, pkg SV32 (std. output arm): 100854-000 | 10-03557 | . |
| RV-6/7/9 Pitch Servo + Mounting Kit (Includes Servo Mounting Kit- RV-6/7/9 Pitch: 101020-005, pkg SV32 (std. output arm): 100854-000) | 10-03559 | . |
| RV- 4/8 Pitch Servo + Mounting Kit(Includes Servo Mounting kit- RV-4/8 Pitch : 101020-002, pkg SV32 (std. output arm): 100854-000 | 10-03560 | . |



DYNON

DYNON EMS-D120 ENGINE MONITORING SYSTEM



The EMS-D120 is a large screen Engine Monitoring System (EMS) that blends traditional analog gauges with newer digital technologies. The EMS-D120 replaces up to 16 different types of gauges which are displayed on a stunning 7" diagonal color screen. The sunlight readable, color display and softkey menu system result in a user-friendly instrument that enhances overall safety and peace of mind. What makes the EMS-D120 so powerful is its ability to continuously monitor up to 27 available sensor inputs that cover the engine, fuel and other miscellaneous systems and announce any abnormality immediately upon detection. A split-screen display environment provides pilots with an excellent overview of the system coupled with additional pages of auxiliary information all available upon demand. Each of the color graphic pages are designed to promote easy visual scanning for interpretation of the current measurements relative to their normal/abnormal operational limits. The EMS-D120 key features include leaning via EGT peak detection, fuel computer, user-defined alarm limited via EGT peak detection, fuel computer, user-defined alarm limits and ranges, audio & visual alarms, user-configurable pages, simple setup, English or Metric measurement units, system clock, contact inputs, timers and user-friendly soft key menus. The 854 x 480 high resolution LCD affords split-screen partitioning to display two pages simultaneously. Many of the pages provided offer a high degree of user-defined configurability to accommodate different engine types and pilot preferences. Each screen is easily called up via Hotkey buttons that provide quick access. When wired to other Dynon instruments via the Dynon Smart Avionics Bus (DSAB), the EMS-D120 can additionally display their data whenever called for by the pilot. Dynon now offers an 800 unit super-bright screen option for its EFIS-D100, EMS-D120 and FlightDEK-D180. The enhanced sunlight readability, 854 x 480 resolution and night dimming capability deliver an impressive view no matter how you look at it.

SENSOR INPUTS

- 6 - EGT (Type K Thermocouple)
- 6 - CHT (Type J Thermocouple)
- 2 - Fuel Level (Resistive [0-1 K ohm] or Capacitance [0-5 volt])
- 2 - RPM (Frequency) 2 - Contacts
- 1 - Manifold Pressure (Voltage)
- 1 - Oil Temperature (Resistive)
- 1 - Oil Pressure (Resistive)
- 1 - Fuel Pressure (Resistive)
- 1 - Fuel Flow (Frequency)
- 1 - Amps (Shunt)
- 1 - Volts
- 1 - Turbine Inlet Temperature (Type K Thermocouple)
- 3 - General Purpose (Either resistive or voltage for OAT, Fuel Tanks 3 & 4, Coolant Temp/Press, Carb Temp)

EMS OPTIONS

| Description | Part No. | Price |
|----------------------------------|----------|-------|
| Capacitance to Voltage Converter | 10-02159 | . |
| Fuel Flow Sensor | 10-01165 | . |
| USB-Serial Converter | 10-01824 | . |
| D10 Flush Mount Bracket | 10-00757 | . |
| EGT Thermocouple Ext Wire | 10-01167 | . |
| CHT Thermocouple Ext Wire | 10-01168 | . |

- EMS-D120 System (no engine sensors or wiring harnesses) P/N 10-01825
- EMS-D120 w/ Superbright Screen P/N 10-02156

COMPLETE ENGINE PACKAGES

(EMS-D120 Engine Monitor, engine sensors and 2 wiring harnesses)

| Description | Part No. | Price |
|---|----------|-------|
| EMSKIT-L4C. 4Cyl Lycoming/Continental Package (Carbureted) | 10-01826 | . |
| EMSKIT-L4C. with Super Bright Screen | 10-02201 | . |
| EMSKIT-L4F. 4Cyl Lycoming/Continental Package (Fuel Injected) | 10-01827 | . |
| EMSKIT-L4F. with Super Bright Screen | 10-02203 | . |
| EMSKIT-L6C. 6Cyl Lycoming/Continental Package (Carbureted) | 10-01828 | . |
| EMSKIT-L6C. with Super Bright Screen | 10-02197 | . |
| EMSKIT-L6F. 6Cyl Lycoming/Continental Package (Fuel Injected) | 10-01829 | . |
| EMSKIT-L6F. with Super Bright Screen | 10-02196 | . |
| EMSKIT-RTX. 4Cyl Rotax 912/914 Package | 10-01831 | . |
| EMSKIT-RTX. with Super Bright Screen | 10-02166 | . |
| EMSKIT-J22. 4Cyl Jabiru 2200 Package | 10-01833 | . |
| EMSKIT-J22. with Super Bright Screen | 10-02193 | . |
| EMSKIT-J33. 6Cyl Jabiru 3300 Package | 10-01835 | . |
| EMSKIT-J33. with Super Bright Screen | 10-02194 | . |

DYNON FLIGHTDEK-D180



Dynon's FlightDEK-D180 integrates its best-selling EFIS and EMS (Engine Monitor System) electronics with a larger 7" diagonal, sunlight readable, color LCD. This instrument boasts a stunning 854 x 480 pixel display that delivers more than three times the resolution offered by competitive units. FlightDEK-D180 provides all your primary flight instruments in combination with a possible 16 engines gauges. Other key capabilities include a built-in altitude encoder and optional Angle of Attack for added safety. A simple softkey menu system facilitates paging through various screens and activating key functions. Audible and visual alarms are immediately announced anytime user-specified limits are exceeded. The price includes a mounting tray, remote compass module and USB-serial converter. Engine probe packages supporting a variety of engines are available as well as other accessories and options that further extend the D180's capabilities. A key benefit that Dynon offers is free lifetime software updates for all its products. **INSTRUMENTS:** Flight: Attitude, Altimeter, Airspeed, Vertical Speed, Gyro-Stabilized Magnetic Compass, Turn Coordinator/Ball, Turn Rate, Clock, Up/Down Timer, HSI, G-Meter, Voltmeter, Altitude Encoder, Angle of Attack with optional Dynon AOA probe. Engine: EGT(6), CHT(6), Fuel Level(2), Fuel Pressure, RPM (2), Manifold Pressure, Oil Temperature, Oil Pressure, Amps, Volts, General Purpose (3- for either OAT, Fuel Level, Coolant Temperature & Pressure, Carburetor Temperature), Contact Inputs (2).

COMPLETE ENGINE PACKAGES

(FlightDEK-D180, engine sensors and 2 wiring harnesses)

| Description | Part No. | Price |
|---|----------|-------|
| EMSKIT-L4C. 4Cyl Lycoming/Continental Package (Carbureted) | 10-01837 | . |
| EMSKIT-L4C. with Super Bright Screen | 10-02198 | . |
| EMSKIT-L4F. 4Cyl Lycoming/Continental Package (Fuel Injected) | 10-01838 | . |
| EMSKIT-L4F. with Super Bright Screen | 10-02199 | . |
| EMSKIT-L6C. 6Cyl Lycoming/Continental Package (Carbureted) | 10-01839 | . |
| EMSKIT-L6C. with Super Bright Screen | 10-02190 | . |
| EMSKIT-L6F. 6Cyl Lycoming/Continental Package (Fuel Injected) | 10-01840 | . |
| EMSKIT-L6F. with Super Bright Screen | 10-02191 | . |
| EMSKIT-RTX. 4Cyl Rotax 912/914 Package | 10-01841 | . |
| EMSKIT-RTX. with Super Bright Screen | 10-02168 | . |
| EMSKIT-J22. 4Cyl Jabiru 2200 Package | 10-01842 | . |
| EMSKIT-J22. with Super Bright Screen | 10-02192 | . |
| EMSKIT-J33. 6Cyl Jabiru 3300 Package | 10-01843 | . |
| EMSKIT-J33. with Super Bright Screen | 10-02195 | . |

| Description | Part No. | Price |
|---------------------------------|----------|-------|
| Battery | 10-00755 | . |
| OAT Probe | 10-01823 | . |
| AOA/Pitot Probe (unheated) | 10-01157 | . |
| AOA/Pitot Probe (heated) | 10-02158 | . |
| Encoder Converter Module | 10-01159 | . |
| Fuel Flow Sensor | 10-01165 | . |
| EGT Thermocouple Ext Wire | 10-01167 | . |
| CHT Thermocouple Ext Wire | 10-01168 | . |
| OAT | 10-01176 | . |
| HS34 HSI Expan. Mdl. Vertical | 10-02590 | . |
| HS34 HSI Expan. Mdl. Horizontal | 10-02773 | . |
| Capacitance to Volt Converter | 10-02159 | . |
| Wiring Harness | 10-01158 | . |

FLIGHTDEK OPTIONS

DYNON EFIS D6/D60



The EFIS-D6 and EFIS-D60 are simpler versions of the well-proven 4" EFIS-D10A and 7" EFIS-D100. The primary functions duplicate a traditional six-pack: airspeed, attitude, altitude, turn coordinator, gyro stabilized heading (DG), and vertical speed, while also adding a voltmeter and altitude encoder. Angle of Attack (AoA) and a battery backup may be added as options. Both products include a remote compass, and the D60 includes Dynon's high brightness screen.

- EFIS-D6 P/N 10-03865
- EFIS-D60 With Super Bright Screen P/N 10-03866

DYNON HEATED AOA PITOT



Most pilots are introduced to the concept of angle of attack during their initial flight training. However, as most GA aircraft do not provide a way to directly measure this critical flight parameter, angle of attack usually becomes an academic notion which is not thought about while flying. Dynon Avionics was the first EFIS manufacturer to realize the importance of angle of attack and offer an affordable, accurate, and useful way to monitor it.

- Standard L-Sharp P/N 10-02158
- Boom style Probe P/N 10-02789

ADVANCED FLIGHT SYSTEMS - GRAND RAPIDS

ADVANCED FLIGHT SYSTEMS AF3400



The AF-3400 can be configured as an EFIS, Engine Monitor, or Combination of both. Both the AF-3400 and AF-3500 systems utilize our Advanced Avionics Bus allowing the pilot and copilot displays to exchange screens. It features a 6.5" (AF-3400) and 8.4"(AF-3500) sunlight readable color LCD display that is 50% brighter than any competitor.

EFIS — Our horizon display is generated from an internal AHRS that is based on certified boards and software. Display features a clear and easy to read airspeed indication with user adjustable color ranges, the altimeter is set using a familiar and convenient adjustment knob, and our heading display is generated from a remote mounted magnetometer. The heading can be displayed on a tape across the top or with our new EFIS DG.

Aircraft Monitoring and Data Acquisition System — Developed from our successful AF-2500 monitor, the system continuously monitors and displays not only all aircraft engine data but several other aircraft functions as well. The display can be customized to the user's preference. Any of the standard instruments can be eliminated or added to the screen.

AOA — Fly safe with AOA! Our patented AOA module can be purchased to drive the display on the AF-3400/3500 screen.

Check the functionality our systems provide, you'll eliminate a surprising number of conventional instruments. Choose one, two, or three AF-3400/3500 displays and configure the system right for you.

| Description | Part No. | Price |
|--|----------|-------|
| EFIS System | | |
| AF-3400EF EFIS System | 11-04636 | . |
| AF-3500EF EFIS System | 11-04637 | . |
| Engine Monitor | | |
| AF-3400EM Engine Monitor | 11-04633 | . |
| AF-3500EM Engine Monitor | 11-04954 | . |
| Combo System | | |
| AF-3400EE Combo System | 11-04638 | . |
| AF-3500EE Combo System | 11-04640 | . |
| OPTIONAL FEATURES | | |
| 4 Cycle Sensor Pack - For use with the AF-3400EF/AF-3500EF EFIS Systems, the AF-3400EM/AF-3500EM Engine Monitors and the AF-3400EE/AF3500EE Combo Systems | 11-04952 | . |
| 6 Cycle Sensor Pack - For use with the AF-3400EF/AF-3500EF EFIS Systems, the AF-3400EM/AF-3500EM Engine Monitors and the AF-3400EE/AF3500EE Combo Systems | 11-04953 | . |
| Advanced Flight Map Software - An optional feature, your AF-3400/3500 can now be configured with onboard mapping. Position is derived from an outboard GPS signal and displayed on the screen. <u>Sever can be selected.</u> | 11-05963 | . |
| Advanced Flight ARINC Adapter - The ARINC 429 module gives you full HSI compatibility with the Garmin 430W, 530W, and 480 radios. Vertical and Horizontal guidance is provided from the new WAAS enabled navigators. | 11-05964 | . |
| Advanced Flight Battery Pack - This Lithium Battery Pack is used for the Advanced Flight EFIS Systems and EFIS/Engine Combos. | 11-05624 | . |
| Advanced Flight Systems AOA Option - Can drive the display on the AF-3400/3500 screen. | 11-07181 | . |

GRAND RAPIDS EFIS S200 SPORT



Far beyond a replacement for the traditional six-pack gyro panel, the Sport S200 is the basis for a low-cost, glass-panel cockpit, with features usually found only in the high-end EFIS. Interfaces included in the Sport allow seamless integration with most of the other aircraft's systems, including GPS, NAV radio, autopilot, transponder, EIS engine monitor, and more. Configurable as a single or dual-screens, the Sport S200 is an uncompromising design with the integrity and reliability necessary for it to be primary instrumentation for VFR or IFR flight. Functionality - While other entry level EFIS products provide little more than a replacement of the traditional

six-pack, the Sport S200 starts with attitude, gyro-heading, airspeed, altitude, vertical speed, but includes features such as: * Seamlessly Interfaces to any GPS - Displays flight plan and steering info * Coupling of autopilot to GPS, Synthetic Approach or Heading Select Bug * Complete navigation radio interface and HSI for SL30 Nav/Com * TIS Traffic Display from Garmin GTX330 * Synthetic Approach provides highway-in-the-sky guidance to any runway. * Synthetic view - Display shows runways and obstacles on wide-screen attitude display * Flight path marker - Shows direction of flight relative to runways and obstacles * Continuously computed wind speed/direction * G-Meter * Options for internal GPS, moving map with terrain, graphical engine monitoring. * Slaved directional gyro - never requires setting * Record and Playback function standing tolerance of gyro drift.

P/N 11-05149.....

GRAND RAPIDS EFIS HORIZON



The centerpiece of the EFIS Horizon is its primary flight display. Combined into 1 intuitive display is attitude, navigation and the aircraft's current state. The EFIS Horizon includes a moving map displaying all US airports and nav aids, plus user created waypoints. Engine data is provided to the Horizon EFIS via the proven and well known Engine Information System products. Features include split screens, convenient controls, integrated navigation and attitude, active redundancy, continuous self-testing and a dedicated AHRS processor. All versions of the EFIS Horizon Series I, and EFIS Series I Display unit require a GPS to display GPS related data, and/or an EIS Model 4000 / 6000 / 9000 to display engine data. These items are not included, and must be purchased separately unless otherwise indicated.

EFIS Horizon Series I - The "Horizon" includes both a multi-function display unit, and an AHRS/Air Data Computer, providing primary flight data, with external magnetometer, and cable assembly. Moving map, wind, and GPS related navigation functions require a connection to an external GPS (not included). A cost-effective and superior alternative to traditional instrumentation. For graphical engine data add an optional EIS.

P/N 11-02135.....

EFIS Series I Multi-Function Display - Provides the identical capability of the EFIS Horizon Series I, except it does not include the AHRS/Air Data Computer. Capable of displaying primary flight data (with a connection to an EFIS Horizon Series I, or by adding an AHRS/Air Data Computer), graphical engine monitoring (when connected to an EIS Model 4000/6000/9000 - not included), and moving map (when connected to a GPS - not included). Can be upgraded to a Horizon Series I for the price difference.

P/N 11-02136.....

EFIS Series I Dedicated Display - The low-cost way to add flat panel technology to your airplane. This display unit provides only the primary flight display, OR the graphical engine display, OR the moving map. An excellent way to add one of the three main functions to your airplane, at minimum cost. Flexible upgrade options allow you to add additional functions, without removing the instrument from the airplane. Can be upgraded to include a Horizon Series I for the price difference.

P/N 11-02137.....

Graphical Engine Monitor/Moving Map Package - Same as Graphical Engine Monitor Package above, but also functions as a moving map when connected to your GPS. Includes full and split screen versions of engine monitor and moving map.

P/N 11-02139.....

Dual EFIS Horizon Series I with EIS Model 4000 - Maximum flexibility and redundancy - The dual EFIS Horizon Series I installation performs automatic cross-checks of roll, pitch, heading, airspeed and altitude data. Package price includes 2 display units, 2 AHRS/Air Data Computers with magnetometers, and the EIS Model 4000 Package.

P/N 11-02140.....

Dual Display Package - EFIS Horizon Series I, EFIS Series I Multi-Function Display, and EIS Model 4000 Package. Dual displays allow any data to be displayed on either display. A single AHRS/Air Data Computer drives both displays. The included EFIS also drives both display units. Connect a GPS to both display units, and enjoy the benefits of 2 screens of data. Price includes Model 4000 package.

P/N 11-02141.....

EFIS SINGLE DISPLAY PACKAGE



EFIS is an acronym for "Electronic Flight Information System". The EFIS Horizon. Series I provides primary flight data (attitude, altitude, airspeed, vertical speed, steering), graphical engine data, and a moving map. It is designed as a cost-effective replacement of traditional vacuum-powered mechanical gyros. Unlike mechanical gyros, no maintenance is required, and installation is much quicker, easier, and lighter. Aerobatics, vibration, and temperature do not affect the life of the EFIS, as it is completely electronic. In addition to these benefits, the EFIS Horizon Series I provides data not available with mechanical gyros, such as navigation steering data integrated with the attitude display, an artificial view of the world

showing airports and obstacles just the way they appear out the window, continuously computed winds, and much, much more. Its easy to get excited about the functionality of the Horizon EFIS, but it's more than just features. The Horizon EFIS is engineered from the ground up without compromises. Small details, like a sunlight readable display, wide -15 to +160 deg F operating temperature range, and an attitude/heading reference system (AHRS) that is built to aerospace standards could easily go unnoticed...and that is exactly the idea.

P/N 11-05198.....

| Description | Part No. | Price |
|--|----------|-------|
| CARB-01 Carburetor Air Temperature Probe | 11-06273 | . |
| MAP-01 Manifold Pressure Sensor 0-31 IN HG | 11-06274 | . |
| OAT-01 Outside-Air Temperature Probe | 11-06275 | . |
| CS-01 Current Sensor +/- 100 AMP | 11-06276 | . |

| Description | Part No. | Price |
|---|----------|-------|
| OPT-INTALT Altimeter/ASI Option | 11-06277 | . |
| OPT-AS Airspeed Option | 11-06278 | . |
| HPS-02 0-80 PSI oil/coolant pressure sender | 11-06423 | . |
| CS-02 current sensor +/- 50 AMP | 11-07224 | . |



TRUE FLIGHT DISPLAY - EFIS INTEGRA



LS800 TABLET PC

Measures just 8.94" by 6.69" by 0.87" , and it weighs only 2.2 pounds. It's easier to use, stow or transport than any Table PC available today and will easily fit in a lab coat pocket or purse. **Genuine Window® XP Tablet PC Edition Intel® Centrino® Mobile Technology**

• Intel Pentium® M Processor ULV 753 (1.20GHz) • Integrated Intel PRO/Wireless 2200BB • 1GB RAM • 30GB HDD • 8.4" SVGA TFT LCD View Anywhere Display • Integrated Bluetooth® • Ethernet LAN Controller (RJ-45 connector) • Secure Digital (SD) Slot • Integrated Fingerprint Reader • Speak Anywhere® Audio Technology • Ambient Light Sensor View Anywhere display uses a proprietary optical enhancement process based on technology initially developed for high-end military aviation and marine applications.

Compared with Motion's standard display, the View Anywhere display technology enhances indoor viewing - while substantially improving outdoor viewing.

• 10:1 reduction in unwanted reflectance and glare • 15% improvement in "light pass-through" efficiency • 225% increase in sunlight contrast ratio over the standard display • Better view-ability at wide viewing angles The View Anywhere display technology also restrains the traditional feel of pen on paper that has become a hallmark of Motion's ink-enabled Tablet PCs, and the solution is also stronger, more durable, and scratch resistant. Finally, Motion accomplishes this solution without compromises, complexity, or high cost.

LS800 VFR Package..... P/N 11-05090
 LS800 VFR Premium Package P/N 11-05089
 RAM Cooling Fan Motion P/N 11-05059

TRUE FLIGHT CHEETAH FL190 DISPLAY



The Flight Cheetah FL 190 has all the capabilities and ability to upgrade of the Flight Cheetah line at a price that is affordable. Runs on a combination of hard keys and touch screen access (stylus not required) **Package includes:**•Flight Cheetah FL 190 display. •TrueMap software with capabilities listed below. •GPS antenna receiver. •AC power supply. •DC Power Supply. **Features:** •Intel Celeron M ULV (900MHZ). •7" diagonal High Contrast LCD. •40 GB hard drive. •10/100 Ethernet, 802.11 b/g, Blue tooth

2.0. •2 USB 2.0, 1 Type II CF Card, H/P jack, VGA, DC in. •Dimensions 9.0" H x 5.5" W x 1.0" D. •Weight 1.7 lbs. •Rechargeable Internal battery (2 hours) P/N 11-04828

ACCESSORIES

WXWORX Receiver P/N 11-04830
 WXWORK Software P/N 11-04831
 XRX Traffic Software..... P/N 11-04832
 Electric Altitude Indicator..... P/N 11-04834

TRUE FLIGHT CHEETAH FL210 DISPLAY



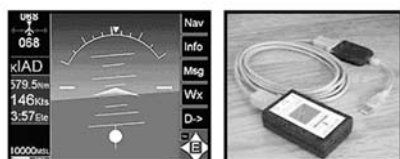
With the FL 210 you get the an optimal combination of affordability, incredibly high quality bright display, and a range of capabilities unequaled by anything else you will see out there in the industry. The FL 210 is most comparable to the certified panel install MFD's in the \$10,000-\$20,000 range but with far more capabilities, and a far more affordable upgrade path for the future. **Features:** •Display

Resolution: 640 (H) x 480 (V) •Display Brightness: 1,000 Nits (7-10 times brighter than typical lap top displays) •Processor Speed: 833Mhz Celeron. •Ram: 512 meg •Storage Capacity: 20 Gig hard drive or optional 4 Gig solid state hard drive. •Overall Dimensions: 7 3/4" x 5 3/8" x 2 1/4" •Weight: 2.75 Lbs •Operating Voltage: DC 12V -28V •Ports: 2 USB, 1 Serial, 1 VGA, Audio In /Out. Supports Bluetooth Wireless. P/N 11-04829

ACCESSORIES

WXWORX Receiver P/N 11-04830
 WXWORK Software P/N 11-04831
 XRX Traffic Software..... P/N 11-04832
 Electric Altitude Indicator..... P/N 11-04834

TRUE FLIGHT ELECTRIC ATTITUDE INDICATOR



True Flight's Electronic Attitude Indicator option automatically monitors your pitch and roll. If you exceed certain parameters that would not be expected in IFR flight you automatically receive an

alert on your display with the EAI in the corner of your screen. Provides you with plenty of time to recover, before it develops into a serious situation. It is a solid state device that uses accelerometers on 3 separate axis to measure pitch, roll and yaw. Power and data are through the USB cable shown above. Although for supplemental use only, the electronic attitude indicator adds an invaluable layer of safety should your primary attitude indicator fail. P/N 11-04834

EFIS INTEGRA TL-6524



EFIS Integra TL-6524 is a multifunctional flight monitoring system integrating all primary flight instruments (Altimeter, Vertical Speed Indicator, Air Speed Indicator, Compass, Accelerometer, Chronometers, Turn & Bank Indicators, Angle Of Attack Indicators, IAT, OAT etc.). The EFIS Integra also combines navigation (HSI, CDI with connection to the popular Garmin SL-30) and 3-D terrain for use worldwide. The wide viewing angles, brilliant colour and direct sunlight readability of the display will give you a new dimension in EFIS instrumentation. Proven, state of the art technology and components will provide you with comfortable, user-friendly control. The Integra controls are fully ambidextrous and provide functions that have previously only been dreamt of - listening to your favourite music after inserting your flash drive into the front panel USB port, 3-D visualization of terrain, integrated 3-axis autopilot, direct voice warnings into your headphones, etc.

Features:

- * Voltage: 10.0 to 32.0 Volts
- * Backlights internal or external: 5V, 12V or 24V
- * Current consumption: 500 to 750 mA @ 14 Volts
- * Maximal voltage and signal current: 30 Volts, 1 Ampere
- * Measurement: +/-1%
- * Operating: -20°C to 70°C (-4°F to 158°F) temperature range
- * Relative humidity: 95% without condensation
- * Load: +/-20 g
- * Vibration: 1 to 200 Hz
- * Weight: 750 grams (0.55 lbs)
- * Dimensions: 192x149x90 mm (7.550x5.860x3.540 inch)

Benefits:

- * Option to select required language - English by default
- * Option to simply update firmware by inserting a Flash drive containing the newest firmware version
- * Option of pre-setup of glass cockpit according to the particular aircraft type saved in a Flash drive
- * Shows a graphical previous flight directly on the glass cockpit display
- * Shows a checklist including the voice output
- * Shows a flight logbook including name of pilot (student and instructor), date, time and position of take-off and landing
- * Download the history of previous flights to a Flash drive or directly to a PC

| Description | Part No. | Price |
|----------------------------------|----------|-------|
| Integra TL-6524 System | 10-03469 | . |
| ACCESSORIES | | |
| Description | Part No. | Price |
| TL-6524 Backup Battery | 10-03470 | . |
| TL-6524 Remote Compass | 10-03471 | . |
| TL-6524 Premium Autopilot Key | 10-03472 | . |
| TL-6524 Silver Autopilot Key | 10-03473 | . |
| TL-6524 Gold AutoPilot Key | 10-03474 | . |
| TL-6524 Servo W/ Magnetic Clutch | 10-03475 | . |
| TL-6524 Terrain of Europe | 10-03476 | . |
| TL-6524 Terrain of Asia | 10-03477 | . |
| TL-6524 Terrain of Africa | 10-03478 | . |
| TL-6524 Terrain of North America | 10-03479 | . |
| TL-6524 Terrain of South America | 10-03480 | . |
| TL-6524 Terrain of South Pacific | 10-03481 | . |

LANDING GEAR ALERTS – MGL AVIONICS

INTERCOM GEAR WARN DEVICE II



With the increasing use of headphones and in particular Electronic Noise Canceling headphones, it has become more difficult to hear warning horns in the cockpit. Because of this problem, the Intercom Gear Warning Device or IGWD was developed and introduced several years ago. After receiving input from customers, the new IGWD II is now available.

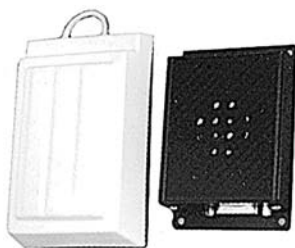
The IGWD II is a small electronic device that can be connected to either the landing gear throttle warning switch or the Flap UP Light or Switch and the Landing Gear Down Light or Switch. The pilots headphones are connected to the audio circuit in the IGWD II and should an unsafe condition occur, a loud pulsing tone is heard in the pilots headphones. In the single input mode, Throttle gear safety switch, if the throttle is reduced and the gear is Up, the IGWD II will sound. The two input mode with the flap UP light and the landing gear down light connected to the sensing inputs, provide added safety by ensuring that the landing gear is down before the flaps are lowered. Should the flap UP light go out before the landing gear Down light is on, the warning tone will be enabled.

In addition to the warning tone, a warning light output is available for a panel mounted light as well as a Test Switch input.

The IGWD II not only provides a second warning tone to the gear horn, it will still function should the gear horn fail, providing an added safety feature.

Features: •Small size: 3.2"L x 2.3"W x 1.0"H •Adjustable Tone Level •Input triggering for Throttle switch or Landing Gear and Flap Lights or Switches •Remote Test Switch Option •Remote Warning Light •DC voltage range 12 to 28 VDC •Weight, 10 oz •Two Year Warranty •Not Approved for Certified Aircraft. P/N 11-01943.....

GEAR ALERT



The Gear Alert uses an electronic sensor to detect the presence of the ground during landing. If the wheels are up, it instantly sounds a voice warning directly into your headset. It is a full time positive warning system and does not depend on throttle position or airspeed for operation. Gear Alert is supplied as a complete kit with all mounting hardware, doubler plates, connectors, and a pre-wired and tested cable assembly for fast and easy installation. 1 yr warranty. FAA Approved. STC's for most single and twin engine aircraft including Cessna up through the 400 series, Beech up through King Air series, Piper up through the Chieftain, Mooney and others. P/N 11-21135.....

MGL AVIONICS V10 VHF AVIATION RADIO TRANSCEIVER



MGL's air band VHF transceiver is the first commercial product of its kind to utilize modern receiver and transmitter technology. All audio processing and much of the receiver and transmitter circuitry is fully digital resulting in an outstanding quality experience unavailable with traditional technology. VHF Airband transceiver based on modern digital signal processing technology with built in multi-mode dual circuit intercom system. Small Size: Fits in a round 3 1/8" instrument hole, but has a mounting depth of only 2.2" + connectors! Light Weight: Approximately 8.8 oz (about 0.5 lb). One of the lightest out there! Powerful: 6 full Watts of transmit power. Digital Interface: Set frequency on the radio from an MGL Avionics EFIS or any equipment capable of setting frequency on the SL40 radio. Built-in VOX / VOGAD Intercom: A high quality intercom system (not a 'hot mic' - this intercom is really usable as your primary intercom). The intercom has 2 channels, but can be used in 4-place aircraft by connecting multiple headsets to the passenger channel. There are several modes of operation for the intercom, including VOX options and MGL Avionics' proprietary VOGAD system. VOGAD (or voice-operated gain-adjusting device) works by adjusting the gain of the microphone as your speak based on the level of your voice. It doesn't 'break squelch' like a VOX intercom - it is activated by your voice and is constantly adjusting to your voice level.

Transceiver..... P/N 11-07817
 Harness P/N 11-07818

MGL AVIONICS VOYAGER EFIS/EMS/NAVIGATOR



8.4" Perfect Fit

The Voyager is IDENTICAL in PRICE and FUNCTION to the Odyssey. The only difference is the size.

The Voyager is a comprehensive flight, engine and navigation instrument designed for Experimental and Light Sport aircraft. Like the Enigma, the Odyssey/Voyager is a hardware and software concept that promotes a flexible, powerful EFIS platform together with a software application system that is highly user-modifiable.

As an EFIS hardware platform, the Voyager provides state of the art multi-processor based processing utilizing components chosen for absolute robustness in radiation intense environments such as found at high altitudes. This is coupled with intense low power design methods to further maximize overall system application and reliability.

The large amount of flexibility built into the base system allows the adaptation of the Voyager to almost any mission and aircraft. Due to low system cost, the Voyager is equally suited to very light aircraft, gliders and rotorcraft, while providing enough flexibility to be utilized by even turbine- or twin-engine aircraft with full dual engine monitoring.

The Voyager shares all software features with the Enigma, but differs in the following ways:

- Larger screen (8.4" diagonal)
- High resolution full VGA active TFT display - one of the best we have found!
- Faster processor for future functionality
- 2 user-configurable rotary knobs and 7 function keys
- ARINC 429 interface for communication with traffic alert systems (TIS and ZAON XRX) and for communicating with high-end digital autopilots (GPS Steer and Vertical Nav)
- CAN (automotive bus) for reading the ECU of automotive engine conversions
- Analog +/- 150mA NAV inputs to display CDI/LOC/GS when connected to older analog Nav radios

Low...

- Weight: Under 4 lbs
- Current Draw: Only 1.5 Amps @ 12 Volts
- Cost: Typical packages complete with attitude and heading sensors around \$6,000

High...

- Screen brightness (800-1000 nits)
- Reliability
- Flexibility (any screen layout you want!)
- Feature count (more instrument options available than most EFISs)

Please note: Select RDAC model and engine senders for engine functions, and select Attitude/Heading sensors (SP-4 and SP-2) for AHRS functions.

Warranty: The Voyager comes with a 3-year limited Warranty from MGL Avionics US and a 30-day Total Satisfaction Guarantee

P/N 11-06963



MGL AVIONICS

STRATOMASTER ENIGMA EFIS WITH GPS AND ANTENNA

The Enigma is a comprehensive flight, engine and navigation instrument designed for Experimental and Light Sport aircraft. The Enigma is a hardware and software concept that promotes a flexible, powerful EFIS platform together with a software application system that is highly user-modifiable. As an EFIS hardware platform, the Enigma provides state of the art multi-processor based processing utilizing components chosen for absolute robustness in radiation intense environments such as found at high altitudes. This is coupled with intense low power design methods to further maximize overall system application and reliability. The large amount of flexibility built into the base system allows the adaptation of the Enigma to almost any mission and aircraft. Due to low system cost, Enigma is equally suited to very light aircraft, gliders and rotorcraft, while providing enough flexibility to be utilized by even twin-engine aircraft with full dual engine monitoring. **Please note: Select RDAC model and engine senders for engine functions, and select Attitude/Heading sensors (SP-4 and SP-2) for AHRS functions.**



LOW...

- Weight: Under 3 lbs
- Current Draw: Less than 1 Amp @ 12V
- Cost: Typical packages complete with attitude and heading sensors less than most other systems

HIGH...

- Screen brightness (1600 nits)
- Reliability
- Flexibility (any screen layout you want!)
- Feature count (more instrument options available than most EFISs)

P/N 11-05555



MGL AVIONICS ODYSSEY - EFIS/EMS/NAVIGATOR

The Odyssey is a comprehensive flight, engine and navigation instrument designed for Experimental and Light Sport aircraft. Like the Enigma, the Odyssey is a hardware and software concept that promotes a flexible, powerful EFIS platform together with a software application system that is highly user-modifiable. As an EFIS hardware platform, the Odyssey provides state of the art multi-processor based processing utilizing components chosen for absolute robustness in radiation intense environments such as found at high altitudes. This is coupled with intense low power design methods to further maximize overall system application and reliability. The large amount of flexibility built into the base system allows the adaptation of the Odyssey to almost any mission and aircraft. Due to low system cost, the Odyssey is equally suited to very light aircraft, gliders and rotorcraft, while providing enough flexibility to be utilized by even twin-engine aircraft with full dual engine monitoring. **Please note: Select RDAC model and engine senders for engine functions, and select Attitude/Heading sensors (SP-4 and SP-2) for AHRS functions.**

P/N 11-05835

STRATOMASTER ULTRA HORIZON XL



• Altitude to 40 000 ft (12 195 m) calibrated, 1ft dynamic resolution • Airspeed ASI analog and digital, TAS digital • Stopwatch • Glide and climb ratio to 1/99 • QNH 960 to 1 060 mb (28.3 - 31.3 Inch of Hg) • QNE 1013 mb quick select (29.9 Inch of Hg) • Time of day, Date for flight log entries • Air time since take-off (or lesson time) • Ambient temperature using external sensor • Up to two Fuel level using flow sender or optional level sender • Fuel flow using optional flow sender • Current range estimate (range at current speed and fuel burn) • Fuel bingo estimate (time until tank empty) • Range calculator using manually entered ground speed • Air distance made good • Voltage. Supply to unit. Usually 12V battery. • VSI +/- 9 990 ft/minute (50.7 meters per second) range • Flight log storing up to 200 entries • Hobbs meter, presetable to current engine time • Density altimeter • Barometer for ambient pressure • Aircraft registration number display • Maintenance timer • Warnings for engine temperature, speed high, speed low, maximum altitude, low fuel level, etc • Alarm output to switch a warning lamp • Audio alarm output to drive a panel speaker or low level output for alarm tone injection into a suitably equipped headset or intercom system. • Master and slave modes for dual instrument setup • Measuring take-off run to 50 ft (15.24 m) above ground level • Artificial horizon (requires SP-4) • Slip indicator (requires SP-4) • Rate of turn indicator (requires SP-4) • Compass (requires SP-2) • Air talk link for connection to; - PC's and Laptops using optional cable • Stratomaster "Black Box" flight recorder - Stratomaster Ultra secondary instrument - Key ring flight log download device - Compass and AHRS sensor packages.

P/N 11-05550

MGL AVIONICS ATTITUDE/HEADING



Completely solid-state, this unit does not rely on traditional mechanical gyro systems. This means no limitation during usage, full 360 degrees operability in both pitch and bank. This unit represents the future of aircraft horizon systems at a price that is making everything else obsolete. NOTE: Sensors are required AV-1 (2.25")..... P/N 11-05706..... . AV-2 (3.125").....P/N 11-05690..... .

SENSORS

SP-2 Magnetometer Sensor..... P/N 11-05557..... .
SP-4 AHRS Sensor Pack..... P/N 11-05558..... .

AV

STRATOMASTER 3.125" VELOCITY SERIES

| Model | Description | Part No. | Price |
|----------|--|----------|-------|
| ALT-3 | Altimeter | 11-05572 | . |
| ALT-4 | Altimeter (Encoding - Gillman) | 11-05684 | . |
| ASI-3 | Airspeed Indicator | 11-05573 | . |
| ASX-2 | Airspeed / Altimeter Combo | 11-05687 | . |
| AV-2 | Attitude / Heading Display (Requires AHRS sensor) | 11-05690 | . |
| E1-EMS | Engine Monitor for 4-Stroke and 2-Stroke Engines | 11-05578 | . |
| FF-3 | Advanced Fuel Level / Fuel Flow (1-2 Levels and 1-2 Flows) | 11-05576 | . |
| Flight-2 | EFIS / Fuel Level / Fuel Flow | 11-05575 | . |
| GF-2 | G-Meter | 11-05693 | . |
| GPS-1 | GPS Navigator MAXI Single (octagonal front-mount) | 11-05694 | . |
| RTC-1 | Real Time Clock | 11-05696 | . |
| RV-3 | Rev Counter (Universal) | 11-05697 | . |
| TC-2 | Thermocouple Indicator (4-Channel) | 11-05698 | . |
| TC-3 | Thermocouple Indicator (12-Channel) | 11-05699 | . |
| TP-2 | Temperature/Pressure Indicator | 11-05701 | . |
| MAP-2 | Universal Pressure and RPM indicator | 11-05695 | . |
| ROTOR-1 | Dual Rotor / Engine Tachometer | 11-07812 | . |

SENDERS

| | | | |
|--------------|---|----------|---|
| CHT10 | Type-K CHT Thermocouple, 10mm Spark Plug | 11-05561 | . |
| CHT12 | Type-K CHT Thermocouple, 12mm Spark Plug | 11-05562 | . |
| CHT14 | Type-K CHT Thermocouple, 14mm Spark Plug | 11-05563 | . |
| CHT18 | Type-K CHT Thermocouple, 18mm Spark Plug | 11-05564 | . |
| CHT Bayo | CHT, Bayonet-Style 3/8" -24, Type K | 11-05565 | . |
| EGT | Type-K EGT Thermocouple, M8 x 1 Thread | 11-05567 | . |
| EGT Clamp | Type-K EGT Therm., Clamp-Type Sm. (>1.5" dia) | 11-07842 | . |
| EGT Clamp | Type-K EGT Therm., Clamp-Type Lg. (<1.5" dia) | 11-05568 | . |
| Water temp. | Water Temperature Sender | 11-05566 | . |
| Prec. Sender | Precision Water/Oil Temperature Probe | 11-05570 | . |
| Flowbend | Fuel Flow Sensor | 11-05559 | . |
| CNV-AT | Serial to Parallel Converter for Ultra | 11-05723 | . |
| GT1 | Gear Tooth Speed Sensor | 11-05725 | . |
| Keyring | Download Keyring Device, Incl. Airtalk PC Cable | 11-05726 | . |
| Transorb | 33V High Speed Transorb | 11-05727 | . |
| CAP | 10,000uF / 25V Electrolytic Capacitor | 11-05724 | . |

STRATOMASTER 2.25" INFINITY SINGLES

| Model | Description | Part No. | Price |
|--------|--|----------|-------|
| ALT-1 | Altimeter | 11-05702 | . |
| ALT-2 | Altimeter (Encoding) | 11-05703 | . |
| ASI-1 | Airspeed Indicator | 11-05704 | . |
| ASX-1 | Airspeed/Altimeter Combo | 11-05705 | . |
| AV-1 | Attitude/Heading Disp. (Sensors are required) | 11-05706 | . |
| FF-1 | Fuel Level / Fuel Flow | 11-05713 | . |
| GF-1 | G-Meter | 11-05715 | . |
| MAP-1 | Manifold Pressure | 11-05716 | . |
| RV-1 | Rev Counter (Universal) | 11-05717 | . |
| RV-2 | Turbine RPM | 11-05718 | . |
| TC-1 | Thermocouple Indicator (4-Channel) | 11-05719 | . |
| TP-1 | Temperature/Pressure Indicator | 11-05720 | . |
| BAT-1 | Battery Voltage/Current Monitor, includes 50 Amp Shunt | 11-05707 | . |
| E3 EMS | Engine Monitoring System | 11-06442 | . |
| RTC-2 | Aviation Real Time Clock | 11-06443 | . |

OTHER MGL PRODUCTS

| | | | |
|----------|--|----------|---|
| RDAC VD | RDAC VD, 4-Channel Thermocouples | 11-05554 | . |
| RDAC VT | RDAC VT, 4-Channel Thermocouples for Turbine Engines | 11-05553 | . |
| RDAC X-B | RDAC X-B, 12 Channel Thermocouples | 11-05552 | . |
| RDAC X-D | RDAC X-B, 12 Channel Thermocouples and MAP | 11-05556 | . |

Attitude/Heading Sensors

| | | | |
|------|---|----------|---|
| SP-2 | SP-2 Advanced Magnetometer Sensor (Compass) | 11-05557 | . |
| SP-4 | SP-4 Attitude Sensor Package (Horizon) | 11-05558 | . |
| SP-5 | SP-5 Advanced ARS, used with the SP-2 the gyro heading can be automatically slaved to the magnetic heading. | 11-06554 | . |

Stratomaster Midsize Displays

| | | | |
|---------|---|----------|---|
| EXTREME | EFIS/Engine Monitor (4 Total EGT/CHT Channels) | 11-05571 | . |
| E2 EMS | Comprehensive Engine Monitor (4 Total EGT/CHT Channels) | 11-05577 | . |

CAMERA SYSTEMS

MOTOCAM CAMERA SYSTEMS

1 CAMERA SHOCKBOX DIGITAL VIDEO RECORDING SYSTEM



- Package Contents:**
- * Sony 550 CCD color camera (1)
 - * 12 foot camera cables (1)
 - * RAM ball and socket camera mounts (1 set)
 - * Stereo audio communication cable (1)
 - * 4Gb SD memory card (1)
 - * Video Editing Software (1)
 - * TV & PC video transfer cables (2)
 - * Charger(1)
- PN 11-07109.....

1 CAMERA SHOCKBOX HELMET CAMERA DIGITAL VIDEO RECORDING SYSTEM



Helmet Not Included

- Package Contents:**
- * Sony 550 CCD color camera (1)
 - * 12 foot camera cables (1)
 - * Urethane helmet mount (1 set)
 - * 4Gb SD memory card (1)
 - * Video Editing Software (1)
 - * TV & PC video transfer cables (2)
 - * Charger(1)
- PN 11-07110.....

2 CAMERA SHOCKBOX DIGITAL VIDEO RECORDING SYSTEM



- Package Contents:**
- * Sony 550 CCD color camera (2)
 - * 12 foot camera cables (2)
 - * RAM ball and socket camera mounts (2 set)
 - * Stereo audio communication cable (1)
 - * 4Gb SD memory card (1)
 - * Video Editing Software (1)
 - * TV & PC video transfer cables (2)
 - * Charger(1)
- PN 11-07111.....

4 CAMERA SHOCKBOX DIGITAL VIDEO RECORDING SYSTEM



- Package Contents:**
- * Sony 550 CCD color camera (4)
 - * 12 foot camera cables (4)
 - * RAM ball and socket camera mounts (4 set)
 - * Stereo audio communication cable (1)
 - * 4Gb SD memory card (1)
 - * Video Editing Software (1)
 - * TV & PC video transfer cables (2)
 - * Charger(1)
- PN 11-07112.....

DATATOYS XM-DVR PRO DIGITAL RECORDING SYSTEMS



The Plus and Plus 2 systems have everything you need to start recording from one or two of the small and light weight bullet cameras.† The Plus system offers the highest quality on the market with a recorder, cameras, and cabling all designed for harsh environments.

The XM-DVR Pro Digital Video Systems are perfect for aviation applications such as flight training, aerobatic, formation flying, and flight tours, featuring better than DVD quality video with the professional standard MPEG2 compression; which records a more vivid and clearer picture than consumer grade MPEG4 technologies. The XM-DVR Pro records in full D1 resolution at up to three time DVD quality** The XM-DVR Pro accommodates up to two compact flash cards which can then be removed and transferred to your PC; making it not only the highest quality solid state digital recorder on the market but the easiest to use.

The XM-DVR Pro records 2 full channels of audio and video. This means you can have two cameras recording simultaneously, creating two separate video files on your compact flash card. It's like buying two recorders for the price of one!

Housed in an anodized aluminum enclosure less than 2 inches high and weighing only 13 ounces, the XM-DVR Pro is compact, durable, and lightweight. The slim size of the XM-DVR Pro also makes it one of the smallest digital recorders on the market. The XM-DVR Pro can be wired directly into the aircraft and can run on a wide range of 10-32VDC.

Includes: * XM-DVR Pro Recorder with 2xCF module * IR Remote Control * Main Harness: 2 Video Inputs (4-Pin female), 2 Audio Inputs (4-Pin male), 1 AV Out (4-Pin male), 1 Wired Remote Input (4-Pin male) * DC power supply (10-32VDC IN – 5VDC/12VDC OUT) Locking Binder 712 Connector * Bench Top Power Supply AC to 5VDC * USB 2.0 Cable * 1 or 2* 580 Line Sony EXView HAD Bullet Cameras * 1 or 2* Amplified Omni-directional Microphones * 1 or 2* Super Clamps or Suction Mounts * 1 or 2* 2 meter extension cables * 1 or 2* Universal Mounts * 1 or 2* Click Mount Adapters * Software and Documentation * Durable Plastic Case

*SINGLE CAMERA QTY 1, DUAL CAMERA QTY 2

† Just add compact flash card

** With firmware upgrade to 16Mbps (DVD = ~5Mbps)

Features: * Highest quality digital video recorder on the market * Easy Installation – Plug, Record, and Play! * Highest Bit Rate on the Market at 10 Mbps(16Mbps w/ firmware upgrade) * 2-3 times DVD and Broadcast Quality * Professional grade MPEG2 compression * Optimized 580 Line Sony EXView HAD CCD Bullet Cameras provide a clean, vivid picture * Records two full channels * Powered from the aircraft's electrical system or external battery packs * Durable and lightweight * Waterproof IP68 connections * Made in the USA **Specifications:** * Inputs: 2 Video, 2 Audio, 1 Wired Remote, 1 IR Remote * Outputs: 1 AV Out * Resolution: Full D1 720x480 30fps NTSC, 720x576 25fps PAL * Bit Rate: User Selectable .5-10mbps per channel, (firmware upgrade to 16mbps per channel) * Compression: MPEG2 Video, MPEG1 Audio * File Type: MPEG2 * Memory Type: 2 x Compact Flash (default), Hard Drive and SSD (optional) * Software: DVR to PC, DVR (PC Based) * Weight: 13oz (358g) * Dimensions: 4.52" x 3.85" x 1.85" (115mm x 98mm x 47mm) * Construction: Aluminum * Aspect Ratio: 4:3 or 16:9 (Input Dependant) * SDK Available for custom large quantity applications

| Description | Part No. | Price |
|---------------------------------|----------|----------|
| Single Camara Recording System | 11-07201 | . |
| Dual Camara Recording System | 11-07202 | . |
| Accessories | | Part No. |
| Airborne wired recording switch | 11-07203 | . |



REMOTE CAMERA SYSTEM



- Mounts a traditional camcorder (i.e. Sony)
- 360 degrees of rotation
- 50 degrees of tilting ability
- Optional stick grip with built in hat switch
- Remote switch control
- Weight - 7lbs
- Dash mounted LCD screed to see what the camera is seeing
- Vibration dampening built into mounting bracket.

| Description | Part No. | Price |
|--|----------|-------|
| Basic Kit - Includes camera mount system with remote switch | 11-04318 | . |
| Deluxe Kit - Includes camera mount system with remote switch and LCD screen | 11-04319 | . |
| Super Deluxe Kit - Includes camera mount system, built in grip switch, & LCD screen | 11-04320 | . |

ANTENNAS

ADVANCED AIRCRAFT ELECTRONICS HIGH GAIN AIRCRAFT ANTENNA SYSTEMS



Here is a new series of aircraft antennas specifically designed to be used without a ground plane. This means that composite aircraft and fabric covered aircraft can now have their antennas mounted totally within the structure. These antennas are designed using the latest engineering technology. Laboratory measurements show them to have better electrical characteristics than currently available products. The unanimous reports from pilots who have been using them confirm that they out perform everything now available on the market. One antenna model works for communication, navigation, and for ELT (Three antennas in the aircraft, but all the same design), and this design is tolerant to installation errors. They will work in metal airframes when a plastic or fiberglass wing tip or similar plastic component is available to provide the mounting structure. The VHF antennas, 5T and 5I, differ only in the location of the BNC connection. The

5T is configured to allow the coax cable to be routed flat along the mounting surface of the airframe. This antenna model would be appropriate for a composite aircraft where the antenna would be mounted in the fuselage or fin and the coax would be close to the skin and be attached periodically for strain relief. In either case, the antenna can be used as a retrofit on in service aircraft or in new installations. The 5I series has the BNC connection positioned so that the coax cable would route out and away from the antenna mounting surface. This configuration is offered for antenna installations such as wing tips of fabric aircraft. If the antenna is mounted on the inside of the tip, the coax route is directly inward toward the wing root and the BNC connection is located near the spar to provide support for the cable. Both antennas are identical in their electrical performance.

Features: Inside mounting. Use with composite skins. Use with fabric covered airframes. Glue or bond to the airframe. Light weight. Wide service temperature. No ground plane corrosion. Mount anywhere inside. Maximum range with low VSWR. Model VHF series designed for comm or nav or ELT. Guaranteed against failure for the life of the airframe. Adapts to existing airframes or to in process construction.

NAV/COM Antenna P/N 11-04261
 NAV/COMM Antenna P/N 11-04262
 Transponder Antenna..... P/N 11-04212



COMANT GPS ANTENNAS

GPS antenna kits from Comant enable you to install a low profile aerodynamic GPS antenna to the exterior of your aircraft. These antennas are all FAA approved under TSO C129, provide superior GPS signal acquisition, and are resistant to ice build-up in flight. All kits come complete with 10' of coax cable. Call with Comant Part No. for pricing on the Comant C1401, C1405, C1-406, OR CI4510 series antenna you require.

CI 401 ANTENNAS

These antennas are designed for aircraft up to 600 knots and feature a rectangular footprint. Available in active or passive models. Height: 0.75". 50 ohms.

| CI 401 ACTIVE ANTENNAS | | |
|---|--------------|-------|
| APPLICATION | P/N | PRICE |
| II Morrow, Precedus, 920 | CI-401-3K1C | . |
| Magellan w/detachable antennas except 5000A, Garmin 55, 89, 90, 95, 100, 150, 155, 165, 250, Skyforce, and panel GPS requiring 26 dB gain | | |
| Antenna Only | CI-401-8C | . |
| Trimble/Terra all panel GPS 40 dB | CI-401-15C | . |
| CI 401 Passive Antennas (limited to 10' run of RG142 or 6' of RG58) | | |
| Magellan w/detachable antennas incl. 5000A, Garmin 55, 89, 90, 95, 100, 150, 155, 165, 250, Micrologic Super Sport & all other GPS receivers requiring a passive antenna. | | |
| Antenna Only | CI401-30C | . |
| Bendix King KLX100 (only) | CI401-32GK2C | . |

CI 405 ANTENNAS

These antennas are similar to the CI 401 antenna series but are designed to fit most existing VHF bent whip and stick type antenna mounting holes and most existing Loran antenna mounting holes. Footprint is same as Cessna type Com antennas. These antennas are great when converting from Loran to GPS.

| CI 405 ACTIVE ANTENNAS | | |
|---|--------------|-------|
| APPLICATION | P/N | PRICE |
| Garmin III, 195, 295, 196 | CI-405-26 | . |
| Trimble Pro, Pro SE, Scout | CI405-3K 0C | . |
| Magellan w/detachable antennas except 5000A, Garmin 55, 89, 90, 95, 100, 150, 155,165, 250, Skyforce, and panel GPS requiring 26 dB gain | | |
| Active Antenna Kit | CI405-8KC | . |
| CI 405 PASSIVE ANTENNAS | | |
| Magellan w/detachable antennas incl. 5000A, Garmin 55, 89, 90, 95, 100, 150, 155, 165, 250, Micrologic Super Sport & all other GPS receivers requiring a passive antenna. | | |
| Lowrance Eagle, Sport, Airmap | CI405-31KC | . |
| Bendix King KLX100 (only) | CI405-32GK2C | . |

AV

COMANT CI 4510 GPS/COM ANTENNAS

The Comant CI-4510 antennas are ideal for use on any GPS/COM dual application and feature upper hemispheric, right hand circular polarized sense pattern (1575 MHz).

| CI 4510 ACTIVE ANTENNAS | | |
|---|----------------------------|-------|
| APPLICATION | P/N | PRICE |
| II Morrow, Precedus, 920/+ | CI4510-3K1C | . |
| Magellan w/detachable antennas except 5000A, Garmin 55, 89, 90, 95, 100, 150, 155, 165, 250, Skyforce, and panel GPS requiring 26 dB gain | | |
| | CI4510-6KC | . |
| w/pass thru holes | CI4510-7KC | . |
| Bendix King KLX100 | CI4510-6K2C or CI4510-7K2C | . |
| CI 4510 PASSIVE ANTENNAS (COMES W/10' COAX.) | | |
| Magellan w/detachable antennas incl. 5000A, Garmin 55, 89, 90, 95, 100, 150, 155, 165, 250, Micrologic Super Sport & all other GPS receivers requiring a passive antenna. | | |
| | CI4510-32KC | . |
| Lowrance Eagle, Sport, Airmap | CI4510-32K3C | . |
| Bendix King KLX100 (only) | CI4510-32GK2C | . |

CI 406 ANTENNAS

Internal mount type for installation under composite materials (except graphite). Footprint is an inverted ARINC rectangular shape. Can be used in pressurized and non-pressurized applications.

| CI 406 ACTIVE ANTENNAS | | |
|---|--------------|-------|
| APPLICATION | P/N | PRICE |
| Trimble Flightmate Pro, Pro SE, Scout | CI406-3KC | . |
| II Morrow, Precedus, 920 | CI406-3K1C | . |
| Magellan w/detachable antennas except 5000A, Garmin 55, 89, 90, 95,100, 150, 155,165, 250, Skyforce, and panel GPS requiring 26 dB gain | | |
| Active Antenna Kit | CI406-8KC | . |
| Antenna Only | CI406-8C | . |
| CI 406 PASSIVE ANTENNAS | | |
| Magellan w/detachable antennas incl. 5000A, Garmin 55, 89, 90, 95, 100, 150, 155, 165, 250, Micrologic Super Sport & all other GPS receivers requiring a passive antenna. | | |
| Passive Antenna Kit | CI406-30KC | . |
| Antenna Only | CI406-30C | . |
| Lowrance Eagle, Sport, Airmap | CI406-30K3C | . |
| Bendix King KLX100 (only) | CI406-32GK2C | . |

COMANT ANTENNAS

COMANT DME/TRANSPONDER ANTENNAS



COMANT DME/TRANSPONDER (CI 100 SERIES) - All Metal Blade DME/Transponder antenna designed and developed for Mach 2 military aircraft. Design is unique in the blade and mounting base are die-cast as one piece with no dielectric material in the airstream. Standard six-hole mounting configuration. See Order Options for available connectors

| ORDER OPTIONS | | | |
|---------------|----------|----------|-------|
| Connector | Model | Part No. | Price |
| BNC | CI 100 | 11-06812 | . |
| TNC | CI 100-2 | 11-06813 | . |
| C | CI 100-3 | 11-06814 | . |
| HN | CI 100-4 | 11-06815 | . |
| N | CI 100-5 | 11-06816 | . |

CI-101 TRANSPONDER ANTENNA - Frequencies Covered 1030-1090 MHz. Transponder antenna with top loaded stub monopole. Contact points are made from beryllium copper. Mounts through a single 0.600" diameter mounting hole.
P/N 11-17970

CI-105 TRANSPONDER/DME ANTENNA - A very broadband and rugged antenna which is encased in glass reinforced molded shell. Rated to 400 kts. TAS. Height. 3.25"; Wt. 0.2 lb. Does not include BNC or hardware. P/N 11-17965

COMANT DME/ TRANSPONDER (CI -105-3) - Frequencies Covered 75 MHz. Antenna configuration specifically designed for external applications using a three hole flange mounting. BNC female connector. P/N 11-06810

COMANT DME/XPDR (CI -105-6 & 105-7) - Frequency • 960-1220 MHz. Comant CI 105-3 DME/Transponder antenna. Ant signed for external applications using a three hole flange mounting. BNC female connector.
CI 105-6 connector - BNC P/N 11-06811

CI 105-7 connector - C P/N 11-06817

COMANT DME/ TRANSPONDER (CI-105-9) - Frequency • 960-1220 MHz. Antenna assembly encased in a glass reinforced polyester molded shell. Comes standard with a 6" extension coax cable and BNC connector. This model offers standard two stud mounting, where the studs are extended to 1 inch in length.
P/N 11-06818

COMANT DME/ TRANSPONDER (CI -105-16) - Frequency • 960-1220 MHz. Was designed specifically for the Honeywell Bendix- King™ KA60. This unit offers the extended length two-stud mounting found on the KA60. Tested to the tougher DO-160D environmental requirements, this antenna offers the best in ruggedness and performance. P/N 11-06819

COMANT DME/ XPDR (CI-110-40-30) - Frequency • 960-1220 MHz & 1030-1090 MHz. All metal, low profile antenna is designed for business jet and commercial high speed aircraft. With a popular four hole mount and connector with open path to ground, this antenna is ideally suited for those aircraft equipped with standard and Mode S transponders. Tough one piece construction provides 175 lbs. side load capability. Moisture failure is prevented with completely sealed construction. P/N 11-06820

COMANT DME/ TRANSPONDER (CI-110-41-30) - Frequencies Covered 960 -1220 MHz. All metal, low profile antenna is designed for business jet and commercial high speed aircraft. With a popular four hole mount and connector with short path to ground, this antenna is ideally suited for those aircraft equipped with standard and Mode S transponders. Tough one-piece construction provides 175 lbs. side load capability. Moisture failure is prevented with completely sealed construction. P/N 11-06821

COMANT DME/XPDR (CI -110-60-30) - Frequency • 960-1220 MHz & 1030-1090 MHz. All metal, low profile antenna is designed for business jet and commercial high speed aircraft. Six hole mount and connector with open path to ground. Suited for aircraft equipped with standard and Mode S transponders. Provides 175 lbs. side load capability. Moisture failure is prevented with completely sealed construction. P/N 11-06822

COMANT DME/ XPDR (CI-110-61-30) - Frequency • 960 -1220 MHz. All metal, low profile antenna is designed for business jet and commercial high speed aircraft. Six hole mount and connector with short path to ground. Suited for those aircraft equipped with standard and Mode S transponders. Tough one-piece construction provides 175 lbs. side load capability. Moisture failure is prevented with completely sealed construction. P/N 11-06823

COMANT DME/ TRANSPONDER (CI-305) - Frequency • 960-1220. Miniature high speed DME/Transponder - one of the smallest DME/Transponder antennas available from Comant. Less than 2.75 inches high, featuring a very low-drag frontal profile. Strong, lightweight and easy to mount using four external mounting holes through base. P/N 11-06824

COMANT FM BAND & AM/FM ANTENNAS



COMANT AM/ FM RECIEVER (CI-222) - Frequency 88-108 MHz 550-1600 KHz. Offers a unique low profile design using standard 4 hole mounting used on many VHF type antennas. Bent whip configuration is ideally suited for underbelly and helicopter installations. P/N 11-00412

COMANT MARKER BEACON ANTENNAS



CI-102 MARKER BEACON - Frequency 75 MHz. For use with the modern, high sensitivity marker beacon receivers. Featuring 4-hole internal mounting for simple installation. Enclosed in an injection molded radome which is impervious to the tough environments typical of the underside of an aircraft. Skydrol and rain erosion resistant. DC grounded to minimize accumulation of precipitation static. P/N 11-17931



CI-118 MARKER BEACON - Frequency 75 MHz. Designed specifically for high-performance aircraft applications. Features aerodynamic design in a lightweight package. Antenna is a low profile blade-type encased in a molded polyurethane shell. Skydrol and rain erosion resistant. P/N 11-17932



COMANT MARKER BEACON (CI-118-1) - Frequency • 75 MHz. Low-drag, lower profile alternative to the popular CI 102 "boat style" marker beacon antenna. Approved for medium to high performance single, turbo-prop or jet aircraft and provides simple external mounting. Skydrol and rain erosion resistant. DC grounded to minimize accumulation of precipitation static. P/N 11-06847



COMANT MARKER BEACON (CI-118-9) - Frequency 75 MHz. Identical to the CI 118 except the mounting configuration allows for "drop-in" replacement to the Honeywell Bendix-King KA 26 Marker Beacon. This Comant design has been tested to the tough DO-160D environmental standards. Skydrol and rain erosion resistant. DC grounded to minimize accumulation of precipitation static. P/N 11-06989



COMANT MARKER BEACON (CI-118-10) - Frequency 75 MHz. This Comant marker beacon is identical to the CI 118 except with a 4-hole through mount configuration. This model has been tested to the tough DO-160D environmental standards. Skydrol and rain erosion resistant. DC grounded to minimize accumulation of precipitation static. P/N 11-06848



COMANT MARKER BEACON (CI-164) - Frequency • 75 MHz. Lightweight flush mount provides for dual marker beacon signal outputs at the antenna, eliminating the need for a separate marker beacon splitter. Antenna is housed in a aluminum enclosure with a glass laminate cover. Internal components are potted in place for mechanical integrity. The CI 164 is designed for curved "crown" surface mounting as is currently used on the Cessna Citation I and II. P/N 11-06850



COMANT MARKER BEACON (CI-165) - Frequency • 75 MHz. Lightweight flush mount antenna, provides for dual marker beacon signal outputs at the antenna, eliminating the need for a separate marker beacon splitter. Antenna is housed in a aluminum enclosure with a glass laminate cover. Internal components are potted in place for mechanical integrity. The CI 164 is designed for curved "crown" surface mounting as is currently used on the Cessna Citation I and II. P/N 11-06851

COMANT DATALINK & SATCOM ANTENNAS



COMANT VHF/DATA LINK (CI-248-30) - Dual function single engine aircraft antenna for VHF and Narrow Cast datalink from Avidyne. Both normal VHF communication as well as use of Narrowcast datalink. For dual use order Avidyne's DC50 coupler switch. VHF: 118-137 MHz / Orbcomm: 137-150.5 MHz P/N 11-07074



COMANT FIS/DATA LINK (CI 248-180) - 136.450 - 136.475 MHz. Assures positive FIS performance with the new CI 248-180 FIS Data Link antenna. Designed specifically to bring NEXRAD, METAR, and TAF frequencies to the cockpit. P/N 11-07077



COMANT IRIDIUM (CI-490-1) - Dual-band passive antenna operates at Iridium™ frequencies, with continuous transmit and receive coverage from 1616 to 1626.5 MHz. Can also operate separately as a passive GPS antenna. Iridium™ delivers essential communications services to and from areas where terrestrial communication are not available. P/N 11-07078

COMANT RADIOPHONE / DME ANTENNAS





COMANT DME/ TRANSPONDER (CI-105-20) - Wide band vertically polarized/omnidirectional antenna designed for high performance aircraft over the UHF/L Band of frequencies from 806 to 960 MHz. 894-896 MHz Transmit 849-851 MHz Receive 960-1220 MHz P/N 11-07081

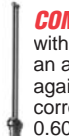
AV

COMANT ANTENNAS

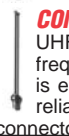
COMANT RADIOPHONE / DME ANTENNAS

 **COMANT UHF (CI-177-20)** - 450-470 MHz. A rugged monopole antenna particularly well-suited to the harsh environments experienced on the underside of an aircraft. Features standard 4-hole mounting, diecast metal base and radiator encased in glass laminate housing. P/N 11-06836.....


 **COMANT UHF (CI-200)** - 450-470 MHz. Rugged monopole antenna particularly well-suited to the harsh environments experienced on the underside of an aircraft. Features a very compact 3-hole mounted die-cast aluminum base with the radiator encased in a glass laminate housing. P/N 11-06837.....


 **COMANT UHF (CI-271)** - 403-512 MHz. Stub antenna designed to withstand the harsh environments associated with the underside of an aircraft. Antenna radiator is mechanically captivated and is sealed against leakage. All exposed metal surfaces are nickel-plated for corrosion resistance and long service. Mounts through a single 0.600" hole. BNC connector is standard. P/N 11-06838.....

 **COMANT UHF (CI-273)** - 403-512 MHz. Stub antenna designed to withstand the harsh environments associated with the underside of an aircraft. Antenna radiator is mechanically captivated and is sealed against leakage. All exposed metal surfaces are nickel-plated for corrosion resistance and long service. Mounts through a single 0.600" hole. BNC connector is standard. P/N 11-06839.....


 **COMANT UHF (CI-275)** - Frequency 406-512 MHz. Wide band UHF antenna designed for high-performance aircraft over the full frequency range of 406-512 MHz. Low profile, blade-type antenna is encased in a low drag, low weight molded body to ensure high reliability. The CI 275 comes standard with a BNC connector. Other connectors available. See order option chart.

| Connector | Model | Part No. | Price |
|-----------|----------|----------|-------|
| BNC | CI 275 | 11-06840 | . |
| TNC | CI 275-2 | 11-06841 | . |
| N | CI 275-5 | 11-06842 | . |


 **COMANT UHF (CI-285)** - Frequency • 400-960 MHz UHF blade antenna design for high performance aircraft over the full range of 400-960 MHz. Features vertically polarized/omni-directional pattern, extremely wide band/high efficiency electrical performance. DC grounding for lightning protection, 6 hole mounting. P/N 11-06843.....

 **COMANT UHF (CI-306)** - Frequency • 800-870 MHz. Stub-type antenna tuned for the 800- 870 MHz radio telephone band. Intended for use on low-flying aircraft and helicopters. CI 306 available with BNC connector and mounts through a single 0.600" inch diameter hole. P/N 11-06844.....


 **COMANT CI 310-20 RADIOPHONE** - Frequencies Covered 806-960 & 1030-1090 MHz L Band / UHF blade antenna designed for high performance aircraft. Features vertical/ omnidirectional pattern, wide band/high efficiency electrical performance and DC grounding for lightning protection. P/N 11-06845.....

 **COMANT CI 310-22 RADIOPHONE ANTENNA** - Frequencies Covered 806-960 & 1030-1090 MHz L Band / UHF blade antenna designed for high performance aircraft. Low profile, light weight antenna and is packaged in a molded body with metal mounting base to ensure stable environmental performance and resistance to vibration, rain erosion and cleaning solvents. Features vertical/omnidirectional pattern, wide band/high efficiency electrical performance and DC grounding for lightning protection. P/N 11-06846.....

COMANT RADIOPHONE / DME ANTENNAS


 **COMANT VHF COMMUNICATION (CI-121)** - Frequencies Covered 118-137 MHz. Similar to the CI 109, the CI 121 is smaller in diameter and lighter at only 0.5 pounds. Upgraded to the new RTCA DO-160D environmental requirements and offers the 118 to 137 MHz frequency associated with DO-186A MOPS. P/N 11-17921.....

 **COMANT VHF COMMUNICATIONS (CI-122)** - Frequencies Covered 118-137 MHz. Designed specifically for mounting to the underside of an aircraft providing excellent radiation coverage for air-to-ground VHF communications. Bent configuration makes it ideally suited for helicopters and low wing aircraft. Upgraded to the new RTCA DO-160D environmental requirements and offers 118 to 137 MHz frequency associated with the DO-186A MOPS. P/N 11-17922.....


 **COMANT VHF COMM (CI-211)** - Frequencies Covered 118-137 MHz. For large twins and medium jet aircraft. Only 8.25 inches high. Upgraded to the new RTCA DO-160D environmental requirements and offers the 118 to 137 MHz frequency associated with DO-186A MOPS. P/N 11-07082.....


COMANT RADIOPHONE / DME ANTENNAS

 **COMANT VHF COMMUNICATIONS (CI-291)** - Frequencies Covered 118-137 MHz Upgraded to the new RTCA DO-160D environmental requirements and offers the 118 to 137 MHz frequency associated with DO 186A MOPS. P/N 11-17991.....


 **COMANT VHF COMMUNICATIONS (CI-292-1)** - Frequencies Covered 118-137 MHz. Designed specifically for top mounting on an aircraft. Upgraded to the new RTCA DO-160D environmental requirements and offers the 118 to 137 MHz frequency associated with DO-186A MOPS. P/N 11-05093.....

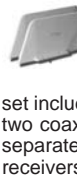
 **COMANT VHF COMMUNICATIONS (CI-292-2)** - Upgraded to the new RTCA DO-160D environmental requirements and offers the 118 to 137 MHz frequency associated with DO 186A MOPS. P/N 11-29202.....

 **COMANT VHF COMMUNICATION (CI-248-5)** - Frequencies Covered 118-137 MHz. Developed for Cessna 182 and 182T aircraft. The only VHF antenna with a built-in notch filter, that allows installation in close proximity to GPS antennas without co-sight interference. P/N 11-05585.....


 **COMANT VHF COMMUNICATIONS (CI-108)** - Frequencies Covered 450-470 MHz Suitable for either top or bottom mounting. Upgraded to the RTCA DO-160D environmental requirements with DO-186A MOPS. Optional leading edge protection - CI 108-L. CI-108 P/N 11-07079..... CI-108L P/N 11-07080.....


COMANT VOR / LOC / GS ANTENNAS


 **COMANT VOR/ GS (CI-120G-S)** - Frequency • 108-118 MHz (VOR/LOC) 329-335 MHz (GS) Antenna system qualified for use on single engine, twin, jet, and helicopter aircraft. Provides glideslope reception capability. Complete set includes a pair (2) of blades, each with single BNC connector output, two coax interconnect cables and a signal combiner output providing for a single cable run to the avionics installation. P/N 11-06801.....


 **COMANT VOR/LOC/GS (CI-120-200G/S)** - Frequency • 108-118 MHz (VOR/LOC) 329-335 MHz (GS) Antenna system qualified for use on single engine, twin, jet, and helicopter aircraft. Provides glideslope reception capability. Complete set includes a pair (2) of blades, each with single BNC connector output, two coax interconnect cables. Dual output signal combiner providing for separate RF cable runs to the avionics installation for NAV1 and NAV 2 receivers, is included. P/N 11-06802.....


CI-120-200G/S-L - Blades have leading edge protection and come with rubber gasket enabling mounting on curved vertical stabilizers. P/N 11-06803.....


 **COMANT VOR/LOC/GS (CI-120-400)** - Frequency • 108-118 MHz (VOR/LOC) 329-335 MHz (GS) Designed for the Cessna 182 Series. Complete kit includes a pair (2) of blades, each with a single BNC output, and two coax interconnect cables. Single BNC output phasing combiner providing for a single RF cable run to the avionics installation. P/N 11-06804.....

 **COMANT VOR/LOC/GS (CI-157P)** - Frequency 108-118 MHz (VOR/LOC) 329-335 MHz (Glide Slope) "V" dipole VOR/ Glide Slope antenna with fixed elements designed specifically for compatibility with the Piper Aircraft mounting. Radiating elements are not removable. Not approved for helicopter installations. P/N 11-15700.....

 **COMANT VOR/LOC/GS (CI-185C)** - Frequency • 108-118 MHz (VOR/LOC) 329-335 MHz (GS) "V" Dipole VOR/LOC/ GS antenna with detachable elements mounts on top of the vertical fin stabilizer for most single engine general aviation aircraft. RF design similar to the CI 157P. Integral ferrite balun provides for higher radiation efficiency. Detachable elements result in a significantly smaller shipping and storage carton than fixed element versions. Not approved for helicopter installations. P/N 11-17923.....






 **COMANT VOR/LOC/GS (CI-158C-2)** - Frequency • 108-118 MHz (VOR/LOC) 329-335 MHz (GS) Detachable elements mounts on top of the vertical fin stabilizer offering the four-hole mounting configuration found on many beech aircraft. Detachable elements result in a significantly smaller shipping and storage carton than fixed element versions. Not approved for helicopter installations. P/N 11-06806.....

 **COMANT VOR/LOC/GS (CI-158C-3)** - Frequency 108-118 MHz (VOR / LOC) 329-335 MHz (Glide Slope) "V" Dipole VOR/ Glide Slope Antenna with detachable elements was developed specifically for Beech Bonanza aircraft and encompasses reduced static capability with the use of P-Stat Paint and bleeder resistors. Not approved for helicopter installations. P/N 11-06807.....






 **COMANT VOR/LOC/GS (CI-159C)** - Frequency 108-118 MHz (VOR / LOC) 329-335 MHz (Glide Slope) Similar to the CI 158C-3 with the exception of offering 2-hole mount instead of a 4-hole mount. Not approved for helicopter installations. P/N 11-17924.....

COMANT ANTENNAS




COMANT VOR / LOC / GS ANTENNAS

-  **COMANT GLIDE SLOPE (CI-193)** - Frequencies Covered 329-335 MHz (GS) For interior mounting for GS reception. P/N 11-05200.....
-  **COMANT VOR/GS (CI-205-3)** - Frequency 108-118 MHz (VOR/ LOC) 329-335 MHz (Glide Slope) Mounting on the aircraft vertical stabilizer or helicopter tail boom. Set includes a pair (2) of "towel bar" sensor elements each with a single BNC output connector and a one-piece dual coax interconnect signal combiner harness with a single BNC connector output. Provides for a single cable routing to the avionics location. P/N 11-17985.....
-  **COMANT GLIDE SLOPE (CI-212-2)** - Frequency • 329-335 MHz (GS) Similar to the CI 212 except provides two output signals for dual glide slope receiver installation without the need for a glide slope coupler. P/N 11-06808.....
-  **COMANT VOR/LOC/GS (CI-215)** - Frequencies Covered 108-118 MHz (VOR/LOC) , 329-335 MHz (GS) Detachable elements featuring two integrally molded mounting legs or "spacers" for increased strength. P/N 11-17926.....
-  **COMANT VOR/LOC/GS (CI-259E)** - Frequencies Covered 108-118 MHz (VOR/LOC), 329-335 MHz (GS) Fixed elements for helicopter aircraft. P/N 11-06809.....



COMANT COMDAT GPS ANTENNAS

-  **COMDAT ANTENNA (CI-401-220)** - Frequency • GPS 1575.42 +/- 3 MHz Contains stable amplifier that offers great performance. Gain performance at 26.5 to 31.5 dB minimum. Presents very low noise levels at 3.8 dB maximum. Built-in voltage regulator. P/N 11-04139.....
-  **COMDAT GPS (CI-401-221)** - GPS antenna with TNC connector. Meets RTCA DO 160-D operating standards including direct effects lightning. Operate with 26.5 dB panel mount GPS receivers. Certified FAA TSO-C144 for GPS and GPS WAAS Class Gamma 1 equ. Not compliant for GPS WAAS Class Gamma 2 and 3 applications. Not compatible with most portable GPS receiver systems. GPS 1575.42 MHz / 26.5 dB Gain P/N 11-06795.....
-  **COMDAT GPS CI 408-20/ ACTIVE** - Designed for airborne applications with aircraft speeds up to 600 KTAS. Drop-in replacement for many popular GPS applications. RTCA DO 160-D operating standards including direct effects lightning. GPS 1575.42 MHz - 28.0 db Gain P/N 11-06796.....
-  **COMDAT ANTENNA (CI-420-220)** - Stand-alone GPS antenna with TNC connector. Meets RTCA DO 160D operating standards including direct effects lightning. Designed to operate with 26.5 dB panel mount GPS receivers. Certified FAA TSO-C144 for GPS and GPS WAAS Class Gamma 1 equipment. Not compliant for GPS WAAS Class Gamma 2 and 3 applications. Not compatible with most portable GPS receiver systems. GPS 1575.42 MHz - 26.5 db Gain P/N 11-05848.....
-  **COMDAT GPS (CI-420-221)** - Stand-alone GPS antenna with TNC connector. Meets RTCA DO 160D operating standards including direct effects lightning. Designed to operate with Garmin 17.0 dB panel mount GPS receivers. Not compatible with most portable GPS receiver systems. GPS 1575.42 MHz - 17.0 db Gain P/N 11-04291.....



COMANT COMDAT GPS/XM ANTENNAS

-  **COMDAT GPS/XM (CI 420-420)** - Frequencies • GPS 1575.42 MHz / 26.5 dB Gain XM 2332.5-2345.0 /30-34 dB Gain. GPS and XM Weather antenna. Designed for compatibility with panel mount 26.5 dB gain GPS receivers. Add XM to an existing GPS antenna location without the need for a completely new installation location. Certified FAA TSO-C144 for GPS and GPS WAAS Class Gamma 1 equipment. Not compliant for GPS WAAS Class Gamma 2 and 3 applications. Not compatible with most portable GPS receiver systems P/N 11-05852.....
-  **COMDAT GPS/XM (CI-401-460)** - GPS and XM Weather antenna. Compatibility with panel mount 26.5 dB gain GPS receivers. Certified FAA TSO C144 for GPS and GPS WAAS Class Gamma 1 equipment. Not compliant for GPS WAAS Class Gamma 2 and 3 applications. The CI 401-460 replaces the CI 401-420. Not compatible with most portable receiver systems. GPS 1575.42 MHz / 26.5 dB Gain. XM 2332.5-2345.0 /26-30 dB Gain. P/N 11-06791.....
-  **COMDAT GPS/XM CI-420-421** - GPS and XM Weather antenna. Designed for compatibility with Garmin panel mount 17.0 dB gain GPS receivers. Add XM to an existing GPS antenna location without the need for a completely new installation location. Not compatible with most portable GPS receiver systems. GPS 1575.42 MHz /17.0 dB Gain. XM 2332.5-2345.0 /30-34 dB Gain P/N 11-06792.....




COMANT COMDAT VHF/GPS ANTENNAS

-  **COMDAT VHF/GPS (CI-2480-200)** - Dual function single engine antenna for VHF/GPS. For popular 26.5 dB gain GPS panel mount systems. Certified FAA TSO-C144 for GPS and GPS WAAS Class Gamma 1 equipment. Not compliant for GPS WAAS Class Gamma 2 and 3 applications. VHF 118-137 MHz GPS 1575.42 MHz / 26.5 dB Gain P/N 11-05850.....
-  **COMDAT ANTENNA (CI-2480-201)** - 1575.42 MHz 17.0dB Gain 118 - 137 MHz VHF. Separate connectors for GPS and VHF, GPS is protected from VHF harmonics. Designed for use with Garmin's™ panel mount GPS systems that require 17dB gain. P/N 11-05849.....



COMANT COMDAT VHF/GPS ANTENNAS

-  **COMDAT VHF/GPS (CI-2680-200)** - Designed for use with Air-cell Broadband Systems (ABS). Single and twin engine piston aircraft for applications of this antenna design. Some light turbine and light jets. Consult your FBO or installation shop for best application information. VHF 118-137 MHz GPS 1575.42 MHz / 26.5 dB Gain P/N 11-06789.....
-  **COMDAT VHF/GPS CI-2680-201** - Dual function high speed antenna for twins and light jets. Featuring VHF and GPS in a single antenna. Designed for use with Garmin GPS panel mount receiver units requiring 17.0 dB gain. Not compatible with most portable GPS receiver systems. VHF 118-137 MHz GPS 1575.42 MHz / 17.0 dB Gain P/N 11-06790.....

COMANT COMDAT VHF/GPS/XM ANTENNAS

-  **COMDAT VHF/GPS/XM (CI 2480-400)** - Frequency • 1575.42 MHz 26.5dB Gain GPS 2332.5 - 2345.0 MHz XM@ WX 118-137 MHz VHF VHF, GPS and XM@ Weather Data in a single, combined antenna. Built-in 80dB low pass filter protects both GPS and XM@ antennas against unwanted VHF interference. 26.5dB GPS amplifier. Helicopter rated. P/N 11-05853.....
-  **COMDAT VHF/GPS/XM (CI-2680-400)** - Triple function VHF/GPS/XM Weather antenna for twin and light jet aircraft. Certified FAA TSO C144 for GPS and GPS WAAS Class Gamma 1 equipment. Not compliant for GPS WAAS Class Gamma 2 and 3 applications. Not compatible with most portable receiver systems. VHF 118-137 MHz GPS 1575.42 MHz / 26.5 dB Gain XM 2332.5 - 2345.0 / 30 dB Gain P/N 11-06786.....
-  **COMDAT ANTENNA (CI 2680-500)** - Frequencies • VHF 118-137 MHz XM 2332.5 - 2345.0 30-34dB Gain. VHF/GPS/XM For twin and light jet aircraft. Provides 80 dB of VHF harmonic suppression. Requires Avidyne's DC50 coupler switch for dual VHF/Data Link functionality. Certified FAA TSO-C144 for GPS and GPS WAAS Class Gamma 1 equipment. Not compliant for GPS WAAS Class Gamma 2 and 3 applications. P/N 11-05855.....

COMANT COMDAT XM ANTENNAS

-  **COMDAT XM (CI-420-10)** - XM 2332.5-2345.0 /25.0 dB Gain. For Garmin GDL 69/69A receivers and Heads Up Technologies (HUT) receivers with short coaxial cable runs. Feature robust TNC female connector. P/N 11-06798.....
-  **COMDAT XM (CI-420-16)** - XM 2332.5-2345.0 /26-30 dB Gain. For Heads Up Technologies (HUT) receivers with longer coaxial cable runs. Features robust TNC female connector. P/N 11-06799.....

COMANT ATTENUATOR, SPLITTERS, COUPLERS, & DUPLEXERS

- COMANT GPS ATTENUATOR (CI-511)** - 1575.42 MHz. Used with 26.5 dB gain ComDat GPS antennas, it allows operation of Garmin GPS systems that require 17 dB gain. P/N 11-06825.....
- COMANT SPLITTER (CI-5120) DUAL VOR/ LOC/ GS** - 108-118 MHz & 329-335 MHz. For use with Garmin GNS 580 and similar systems. Splits single coax antenna input into equally proportioned VOR/ LOC/GS outputs. P/N 11-06826.....
- CI-502 Dual VOR Coupler** - Allows the simultaneous use of two VOR receivers from one VOR antenna. P/N 11-17975.....
- CI-503 Dual GS Diplexer** - Permits operation of two glide slope receivers from one glide slope antenna. P/N 11-17976.....
- CI-505 VOR/GS Triplexer** - Permits operation of two NAV & one glide slope receiver from 1 VOR/LOC antenna. P/N 11-17977.....
- CI-507 Single VOR/GS Diplexer** - Provides the operation of one VOR and one glide slope receiver from one VOR/GS antenna. P/N 11-17980.....
- CI-509 COMANT COUPLER MARKER BEACON** - Permits the use of two marker beacon receivers from one marker beacon antenna. P/N 11-06852.....
- CI-601 COMANT DUPLEXER** - Designed to provide operation between two transceivers and one antenna. P/N 11-06827.....
- CI-1125 VOR/GS Quadraplexer** - Permits operation of two NAV & two glide slope receivers from 1 VOR/LOC antenna. P/N 11-03777.....



DORNE & MARGOLIN ANTENNAS - ANTENNA TEMPLATES

DM C63-1/A ANTENNA

Frequency Range 118-137 MHz The DM C63-Series antennas are VHF communication antennas designed for high mechanical strength with machine tapered aluminum alloy radiating elements. These vertically polarized antennas cover the frequency range of 118-137 MHz for both transmitting and receiving applications. The DM C63-1/A is designed for mounting on top of the fuselage. All DM C63-Series antennas are supplied with a gasket and a doubler plate. P/N 11-02764.....

DM C63-2 ANTENNA

Designed for high mechanical strength with machine tapered aluminum alloy radiating elements. Vertically polarized antennas cover the frequency range of 118-137 MHz for both transmitting and receiving applications. Low profile "bentback" radiating element designed for mounting on the bottom of the fuselage. Supplied with a gasket and a doubler plate. P/N 11-02765.....

DM C63-3/A ANTENNA

VHF communication antenna designed for high mechanical strength with machine tapered aluminum alloy radiating elements. These vertically polarized antennas cover the frequency range of 138-174 MHz for both transmitting and receiving applications. Low profile "bentback" radiating element designed for mounting on the bottom of the fuselage. Supplied with a gasket and a doubler plate. P/N 11-02766.....

DM C70-1/A TRIM LINE ROD ANTENNA

Designed for top or bottom installation on high-performance, single, twin and turbo engine fixed and rotary wing aircraft. These uniquely designed antennas offer mechanical strength and high-electrical efficiency to provide maximum reliability and full 360/720 channel transceiver operation. The lightweight profile is unobtrusive, resists icing and offers low drag. Height: 15" Speed Rating: 400 mph. P/N 11-02768.....

DM C70-3 STRAIGHT ROD ANTENNA

Designed for top or bottom installation on high-performance, single, twin and turbo engine fixed and rotary wing aircraft. These uniquely designed antennas offer mechanical strength and high-electrical efficiency to provide maximum reliability and full 360/720 channel transceiver operation. The lightweight profile is unobtrusive, resists icing and offers low drag. Height: 20.5". Speed Rating: 250 mph. P/N 11-02769.....

DM C70-4 ANTENNA

Designed for top or bottom installation on high-performance, single, twin and turbo engine fixed and rotary wing aircraft. These uniquely designed antennas offer mechanical strength and high-electrical efficiency to provide maximum reliability and full 360/720 channel transceiver operation. The lightweight profile is unobtrusive, resists icing and offers low drag. P/N 11-02770.....

DM N170-2 ANTENNA

L-band metal blades with and extended bandwidth for use with both transponders or distance measuring equipment. Sealed and waterproofed for increased reliability. P/N 11-02767.....

DM N48-1 ANTENNA

Balanced loop design assures an omnidirectional radiation pattern at the horizon to obtain the maximum signal for standard VOR and area navigation systems installed in lightweight aircraft, medium twins, and helicopters operating up to 250 mph. Dual VOR receiver operation is obtained when the antenna is used with the DM H21-1 diplexer. P/N 11-02771.....



DORNE & MARGOLIN ANTENNA COUPLERS

DM H21-2 - Dual Market Beacon or Dual VOR
P/N 11-02772.....

DM H22-1 - Single G/S or Single VOR.
P/N 11-02773.....

DM H23-1 - Triplexer. Dual VOR & Single G/S
P/N 11-02774.....

DM H69-1 - Quadraplexer. Dual VOR & Dual G/S
P/N 11-02775.....



11-02774

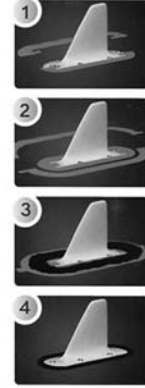
DM H24-1 - Diplexer, Dual G/S P/N 11-02776.....

ANTENNA INSTALLATION TEMPLATES



Image shown for illustrative purposes may not depict specific part number

SealingGuide



Custom designed templates improve the antenna sealing process, making it more precise, efficient and cost-effective.

Each Sealing Guide template is custom designed to correspond to an individual antenna. They consist of 2 pieces, one inner part and one outer part. The inner template adheres to the base of the antenna, the outer template is placed on the body of the aircraft surrounding the antenna. Sealant is applied to the gap between the templates. Sealant is applied to the gap between

the templates. When the templates are removed and discarded, the sealant is left to cure, resulting in a clean, precise and smooth seal.

Each template is custom designed to correspond to an individual antenna. You will no longer need to laboriously cut and paste various lengths of tape, trying to fit them around the irregular antenna shape.

The Sealing Guide template consists of 2 pieces, one inner part and one outer part. Application is simple. The inner template adheres to the base of the antenna, and the outer template is placed on the body of the aircraft surrounding the antenna. Sealant is applied to the gap between the templates. The templates are then removed and discarded. The sealant is left to cure, resulting in a clean, precise and smooth seal.

Incorporating the "Sealing Guide" system into your sealing process will significantly reduce labor time.

| For use with the following antennas: | Part No. | Price |
|--|----------|-------|
| CI-105-9, CI-105, CI-105-16, AV-74 | 11-06653 | . |
| CI-105-3 | 11-06653 | . |
| CI-102 | 11-06655 | . |
| CI-100 Series, CI-105-6, CI-105-7, CI-110-40 Series, CI-110-41 Series, CI-110-60 Series, CI-110-61 Series, S65-5366-850L, S65-5366-890L, S65-5366-2L, S65-5366-3L, S65-5366-7L, S65-5366-8L, S65-5366-10L, S65-5366-10LC, S65-5366-11L, S65-5366-116L, S65-5366-119L, S65-5366-144L, S65-5366-145L, S65-5366-168L, S65-5366-4 Series, AV-741, DM N150 Series, DM N170 Series | 11-06656 | . |
| CI-275-2, CI-275-5, CI-310-20, CI-310-22, CI-310-25 | 11-06658 | . |
| CI-305 | 11-06660 | . |
| CI-105-20, CI-105-22, CI-105-24, CI-105-25, CI-150-250-L | 11-06666 | . |
| CI-118-10, CI-118-1, CI-118-9, CI-118 | 11-06662 | . |
| CI-200, CI-175 | 11-06663 | . |
| CI-285 | 11-06664 | . |
| CI-121, CI-122, CI-177, CI-177-1, CI-177-13, CI-177-3, CI-177-4, CI-177-20, CI-291, CI-292-1, CI-292-2, CI-292-3, CI-292-4, CI-222, CI-222-1, CI-4510, CI-317, CI-317-1, CI-405 Active Series, CI-405-26 Active, AV-10, AV-14, AV-17 | 11-06665 | . |
| CI-248-5, CI-248-30, CI-248-180, CI-2480-100, CI-2480-101, CI-2480-200, CI-2480-201, CI-2480-204, CI-2480-206, CI-2480-300, CI-2480-301, CI-2480-304, CI-2480-400, CI-2480-401, CI-420-10, CI-420-16, CI-420-220, CI-420-221, CI-420-224, CI-420-230, CI-420-420, CI-420-421, 2.70-4.40, 110-338 | 11-06666 | . |
| CI-401 Series ACT, CI-401 Series PAS, S67-1575-16, S67-1575-52, S67-1575-82, S67-1575-132, S67-1575-133, S67-1575-134, S67-1575-135, S67-1575-145, AV-GPS, DM N1021-1 | 11-06667 | . |
| CI-145, CI-2680-500, CI-2680-400, CI-2680-401, CI-119, CI-138, CI-139, CI-196 | 11-06668 | . |
| CI-119, CI-138, CI-139, CI-145, CI-145-1, CI-196, CI-238 | 11-06669 | . |
| CI-211, CI-211-1, CI-211-1-L, CI-211-16, CI-211-L CI-408-20, S67-1575-20, S67-1575-39, S67-1575-49, S67-1575-59, S67-1575-14, S67-1575-76, S67-1575-86, S67-1575-98, S67-1575-96 | 11-06670 | . |
| S67-1575-136, S67-1575-863, S67-1575-109, S67-1575-137 | 11-06671 | . |
| CI-108, CI-108-1, CI-108-1-L, CI-108-L | 11-06672 | . |
| CI-164, CI-165 | 11-06673 | . |

AV

R.A. MILLER ANTENNAS

ALL LISTED ANTENNA SPECIALISTS HAVE 50 OHM IMPEDANCE. FOR SPEEDS TO 250 MPH AND 25,000' ALTITUDE.



VHF COM ANTENNA - Stainless steel bent whip antenna with insulator and mounting hardware. 118-136 MHz. Wt. 3-1/2 oz.

P/N AV-534.....

Same antenna as described above but furnished w/96" lead of RG58 A/U cable with BNC and ground strap with lugs. Wt. 7.5 oz.

P/N AV-534L.....



VHF "BROAD BAND" COM ANTENNA - Blade type-low drag. Aluminum radiator encapsulated in rigid urethane foam with white fiberglass housing. 118-136 MHz. Power capability: 50 watts. 13-1/2" high. Weight: 20 oz./P/N AVT-4.....

VHF "BROAD BAND" ANTENNA - Rod type. Silver plated braid radiator encapsulated in fiberglass tube with white epoxy finish. Die cast aluminum base. 118-136 MHz. Wt: 8 oz. BNC termination. Supplied with weather sealing rubber pad and mounting hardware. P/N AV-529.....



CB ANTENNA - This "general aviation" CB communications antenna is uniquely designed w/ "center loading coil" to permit the antenna to be short for practical operation. Unit is constructed of a fiberglass rod mounted in an aluminum die cast base. BNC connector. Power rating 5W. 27 MHz. Final tuning on airplane. Wt. 10 oz.

P/N AV-568.....



OMNI VOR NAV ANTENNA - This antenna is constructed of taper-ground high-strength stainless steel to withstand the vibration and wind loads with the stability necessary for reliable operation. The insulators are compression molded bakelite with mounting holes provided and weather sealed. The antenna may be mounted with the "V" pointed forward or aft. Impedance is 50 ohms when used with the balun & 30 ft. of RG-58 A/U cable supplied. 108-118 MHz.

P/N AV-532L.....

P/N AV-532 (without Cable).....



TRANSPOUNDER ANTENNA - Chrome plated, phosphor bronze radiating element mounted in Teflon insulator. Ball tip for low-noise static discharge. May be installed from the outside. TSO'd. 1030-1090 MHz. BNC connector. Wt. 1 oz.

P/N AV-22.....



MARKER BEACON ANTENNA - Sled

type. Centerless ground stainless steel, supplied with feed system, low-absorption high-strength standoff insulator, stainless steel mounting hardware. Lead not supplied. 75 MHz. Wt. 7.25 oz.

P/N AV-533.....



MARKER BEACON ANTENNA - Boat Type

P/N AV-569.....



VHF DIPLEXER COUPLER - Splits the signal from a single antenna into two NAV receivers; eliminating the need for a second antenna.

P/N AV-547.....



AV-9 - A broadband DME ("L" band) antenna durably constructed around a Type "N" low-loss connector. The large diameter radiator of polished chrome-plated aluminum gives the broad coverage required with this type of antenna. The antenna is easily installed and operates to speeds of up to 250mph and altitudes up to 50,000 ft.

P/N 11-02344.....



AV-545 - An ADF Sense antenna supplied with "Government Approved" self-gripping jaws and a stainless steel small diameter low drag tension device for reliable installation. The unit is also supplied with 23 ft of

type 6370-2 copperweld polycovered antenna wire for minimum stretching, mounting bracket and hardware, rubber pad and ASA insulator with feed-thru. The antenna operates at speeds of up to 250 mph and altitudes up to 50,000 ft.

P/N 11-02345.....

BASE STATION ANTENNA - Ground Plane 118-136 MHz

P/N AV-5.....



AV-10 COMMUNICATIONS ANTENNA - 4-bolt design. Designed for high-performance aircraft applications. Identical in mounting and appearance to Cessna communications antennas. Rated to 250 knots. Equivalent to Comant CI-121

Antenna. Wt. 8 oz. Ht. 17-1/2" P/N 11-12500.....



AV-14 PUBLIC SERVICE AND BUSINESS BAND ANTENNA - Available in 4-bolt design. Features a tapered glass laminate housing and die-cast aluminum base. Rated to 250 knots. Equivalent to Comant CI-177-1. Wt. 8oz. Ht. 17.5"

P/N 11-12600.....



AV-17 COMMUNICATIONS ANTENNA - 4-bolt design. Designed for mounting to the underside of an aircraft, providing an excellent radiation pattern for air-to-ground communications. Low profile configuration makes it ideal for

helicopters and low-wing aircraft. Equivalent to Comant CI-122 antenna. Wt. 8 oz. Ht. 8-3/4" P/N 11-12700.....



VHF TRIPLEXER SPLITTER - Splits signal from VOR NAV antenna into two NAV receivers and one glide slope receiver. P/N AV-571.....



RA MILLER TRANSPONDER/DME ANTENNA (AV-74) - For transponder or DME application. The antenna housing is constructed of an acrylonitrile-styrene-acrylic (ASA) shell. The white color allows maximum performance without losses due to color pigments or unseen dirt. The antenna is supplied with cellular neoprene mounting pad and hardware. The antenna is designed to operate at speeds up to 350 mph and altitudes up to 50,000 ft. It has a drag force of 0.09 lbs @ 250 mph. This antenna is a direct replacement for Comant's model CI-105.

P/N AV-74.....



VHF DIPLEXER SPLITTER - Splits the signal from a VOR NAV antenna into NAV and glide slope receivers. Construction similar to AV-547. Insertion loss in applicable band - max.1 dB. Separation - min. 38 dB. Filtering - min. 30 dB, average - 40 dB. Connections UG-1094U. Accepts BNC. 108-118 MHz, 329-333 MHz. Wt. 3-1/2 oz.

P/N AV-570.....



AV-1 - is a base station antenna for communications with ground vehicles or aircraft. It has heavy-duty construction with 3/8" diameter aluminum radials, a 1" diameter aluminum tube radiator, and is iridite-treated for durability. It mounts easily to a 1" diameter pipe or a 1-1/4" O.D. tube with locking set screws.

P/N 11-05996.....



AV-2 - is a high performance vehicular antenna for use on all surface vehicles where communication on the aircraft VHF frequency band is required. Heavy duty construction with a tapered 17-7PH stainless steel whip and spring mount.

P/N AV-2.....



AV-3 - is a low profile snap-in mounting quarterwave antenna for use on surface vehicles. It has a solderless cable connection at the antenna and is supplied with 12 feet of cable and PL-529 connector.

P/N AV-3.....



AV-12 - is a VOR receive only antenna which uses a highly efficient technique of molding the elements directly into a high-impact thermo-setting bakelite center insulator. A 25 ft cable with integral balun is also supplied. with the AV-12L

P/N AV-12.....

P/N AV-12L.....



QUICKIE ANTENNA KIT - Simple installation procedure produces excellent communications antenna. Order additional kit for navigation antenna. P/N 11-09800.....

Toroids Only - Used in our quickie antenna kit for composite aircraft. P/N 11-09900..... ea.

ADF ANTENNA KIT - This ADF Antenna Kit is an economical replacement for the Cessna factory style antenna used on all the smaller Cessna aircraft. This antenna will work on most aircraft except those with a moveable tail such as the Mooney.

Replacement Kit..... P/N 11-12300.....

For new installations..... P/N 11-02655.....



DM N4-17/N ANTENNA - VOR/LOC/GS BAL. LOOP SYSTEM (DM N4-17/N) Single Output -- Frequency VOR/LOC 108-118 MHz -- GS 329-335.3 MHz

P/N 11-05859.....



AV-6 CABLE ASSEMBLY - Cable assembly consisting of 50 foot of RG-58/U low loss transmission line, a PL-259 connector at one end and a BNC male connector at the other. Commonly used with the AV-1 and AV-5

P/N 11-06992.....



AV-741 ANTENNA - Designed for use with DME/Transponder sets. Constructed from an aluminum casting which is capable of withstanding particle erosion at high speeds. Designed to operate at speeds up to 350 mph and altitudes of 50,000 ft. It has a drag force of 0.35 lb @ 250 mph.

P/N 11-06995.....



AV-15 ANTENNA - Used with aviation, land mobile radio and flight phone bands. Chrome-plated ball tip provides low noise static discharge. Designed to operate at speeds up to 350 mph and altitudes of 50,000 ft. It has a drag force of 0.75 lb @ 250 mph.

P/N 11-06993.....



AV-64 ANTENNA - Marker beacon antenna designed for very low drag. Supplied with cellular neoprene mounting pad and hardware. Designed to operate at speeds up to 350 mph and altitudes up to 50,000 ft. It has a drag force of 0.22 lbs @ 250 mph.

P/N 11-06994.....



AV-530 ANTENNA - Designed for broadband communications. Has a die-cast aluminum base and a tapered stainless steel whip for less drag at higher airspeeds. Supplied with a weather-sealing gasket and mounting hardware. Designed to operate at speeds up to 350 mph and altitudes up to 50,000 ft. It has a drag force of 1.65 lb @ 250 mph.

P/N 11-06696.....

AV

ANTENNAS

BOB ARCHER AIRCRAFT ANTENNAS

Designed by Bob Archer utilizing concepts common to military aircraft and space vehicles. The antenna performance is superior to most in use today in private aircraft. Antennas must be installed in accordance with the installation instructions. These antennas are designed to be installed inside fiberglass or other non-conductive wing tips or tail caps of metal or other conductive material aircraft.

SPORT AIRCRAFT ANTENNAS



MODEL 1 - This VOR antenna is designed to fit inside larger fiberglass wing tips on metal (conductive that is) airplanes such as T-18's, RV's Bonanzas etc. The wing tips must have internal dimensions of at least 11"x24" and generally fit better on the bottom surface. The VSWR is normally less than 2.0:1 over a frequency band of 108-127 Mhz but could be higher due to installation factors.

Left Side P/N 11-21015-1
Right Side P/N 11-21015-2

MODEL 1A Wing tip Com antenna. looks the same as Model 1 above and fits the same tips as those above but tuned for the Com band. Offered because of pressure from RV builders. Does not perform as well as Model 2 Com antenna but users report good communications at ranges greater than 50 miles. Should be installed so that the maximum height of the tip is utilized to get the most vertical polarization.

Left Side P/N 11-21016-1
Right Side P/N 11-21016-2



MODEL 2 - Tail cap Com antenna for metal conductive airplanes installed inside a tail top fiberglass fairing with inside dimensions of at least 10" high x 12" long. VSWR is normally less than 2.0:1 over a COM frequency band of 118-136 Mhz.

Left Side P/N 11-21020



MODEL 3 - Wing tip VOR antenna of same general design as the Model 1 but of a narrower design to fit Mooney tips with internal dimensions of 8" x 24". VSWR less than 2.0:1 over the frequency band of 108 to 118 Mhz.

Left Side P/N 11-21010-1
Right Side P/N 11-21010-2

MODEL 4 - Wing tip VOR antenna designed for smaller tips than Model 3 and with a 10 degree flare on the top portion and a curled aft portion. VSWR less than 2.0:1 over the frequency band of 108 to 118Mhz.

Right Side P/N 11-21025-1
Left Side P/N 11-21025-2

STYLE 1 OR 2 ANTENNAS

NOTE: Wingtip antennas come in RH and LH types. The -1 suffix indicates the installation of the antenna on the lower inside surface of the left wingtip or the upper inside surface of the right wingtip. The -2 suffix indicates the installation of the antenna on the upper inside surface of the left wingtip or the lower inside surface of the right wingtip.

MIRACLE AIR WHIP ANTENNA

The Miracle Air Whip Antenna features include: • Installs in the nose of you Challenger or similar aircraft in minutes • Groundplane free - a full half-wave dipole so it doesn't need any ground plane or wires • Pre-tuned for the highest effective radiated power from your transeiver • Mainly omni-directional pattern with slight bias towards your heading • Extended frequency response compared to most whips • Highest quality mil-spec connectors, cable and other materials • Available versions for Comms/VOR & ELT

COM/VOR P/N 11-03018
ELT P/N 11-03023

STAINLESS VHF ANTENNAS FOR HOMEBUILTS



These VHF antennas are stainless steel including all hardware. Insulators are made of Delrin, which resists extreme cold or high temperatures and is non-breakable. Antennas are available in straight and 45° or 90° angles. 118-136 mHz range. Weight: 3 oz. Not FAA approved.

Straight P/N 11-04516 45° P/N 11-04517
Transponder ... P/N 11-02759 90° P/N 11-00648

COPPER ANTENNA FOIL TAPE 3/8 INCH

Used as an antenna ground in composite aircraft.
P/N 11-12900.....



TORROIDS (FERRITE BEADS)

Used in our quickie antenna kit for composite aircraft.
P/N 11-09900.....



STAINLESS STEEL ADF ANTENNA KITS

• Replace your rusty antenna • Will never rust • Fits most high/low wing light aircraft • The safest! Ceramic safety insulator • Easy to install • The finest stainless ADF antenna you can buy **Note: Not for Mooney aircraft or any aircraft with a movable empennage.**

Economy stainless ADF ANT.kit..... P/N 11-12300
ADF stainless ANTENNA kit..... P/N 11-02655

ANTENNAS FOR COMPOSITE AIRCRAFT



MODEL 5 - This transponder/DME antenna is an etched copper clad epoxy circuit board dipole that is designed to be installed inside non-conductive aircraft without need for the additional installation of a ground plane. The dimensions are 6" x 7" and it can be installed in the aft fuselage or the wings with the 6" dimension vertical. VSWR is less than 1.2:1 over bands of 1032 to 1090 Mhz.

P/N 11-21005



MODEL 6 - This com antenna is designed to be installed on the inside surface of the aft fuselage of composite and wood aircraft. It is a dipole that is folded up to minimize the vertical dimension and requires 12" of fore and aft space and 26.5" vertically. It is designed with flexibility so it can match the internal curvature of the fuselage. The VSWR is less than

2:1 across the com frequency band..... P/N 11-21000



MODELS 7 & 8 - These antennas are essentially the same with the exception of the overall length and the matching devices with the com antenna being installed vertically and the nav antenna being installed horizontally. VSWR is less than 2:1 over their respective frequency bands. The outer ends of these antennas may be swept to +/-30° to facilitate installation in various aircraft types.

NAV Antenna Model 7..... P/N 11-21030
COM Antenna Model 8..... P/N 11-21035

AV-GPS ACTIVE GPS ANTENNA



The RAMI model AV-GPS is a permanently mounted external aircraft antenna designed for use with GPS receivers which provide +5VDC on their antenna connector. Most handheld GPS receivers have this provision. It is an active (amplified) antenna providing an average 26 dB gain over a passive (non-amplified) antenna.

P/N 11-17990.....

ANTENNA COVER PLATE

For those of you who have been removing Loran-C antennas, here is your answer, the Antenna cover plate. It was designed to fit the same footprint as the CI-121SP or similar series antennas. Machined from white acrylic.

P/N 11-17984..... ea.

ANTENNA WIRE

FLEXIBLE ANTENNA WIRE - Cotton thread core. 6x7 silicon bronze wire. Per Spec. NAF29720-2. P/N 11-04239 /ft /100ft.
COAXIAL CABLE - RG-58U - Tinned copper conductor, solid polyethylene dielectric. Standard cable for radio installations. For experimental aircraft only. P/N 11-04258..... ft..... /100ft.

TYPE RG-400U - Tinned copper conductor, PVC Type IIA jacket. FAA approved for certificated aircraft. P/N 11-09202. /ft /100ft.

BNC COAXIAL ANTENNA CONNECTORS FOR RG-58U CABLE



Male P/N 11-03992.....
Female P/N 11-03993.....

BNC COAXIAL ANTENNA CONNECTORS FOR RG-400U CABLE

Male..... P/N 11-01802..... Female P/N 11-01803

ANTENNA INSULATORS

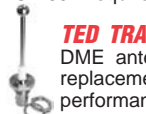


(1) Feed-Thru Insulator for lead-in wire from fixed antenna. Type 4125. 10-32 threads, 3" length tip to tip, 1-9/16" casing. P/N 11-10500

(2) Strain Insulator for receiver antenna. P/N 463



WSI WEATHER/SIRIUS RADIO ANTENNA - Operates with all new WSI InFlight® capable receivers. The antenna receives Sirius Satellite Radio broadcasts to enable the WSI weather service. It was designed specifically to suppress interference from ground based signals. Its proprietary design allows for optimum performance while the aircraft is turning. The antenna has been thoroughly tested and meets all of the RTCA DO-160E requirements. P/N 11-05937



TED TRANSPONDER ANTENNA - This monopole transponder/DME antenna meets the same specifications and is a direct replacement for the CI-101 and AV-22 antennas. Exceptional performance and value. P/N 11-17995

AV

INTERCOMS

DAVID CLARK DC-COM INTERCOMS



DC-500 is a compact panel mount voice activated intercom. Features include two radio transmit, independent VOX circuit for each station, pilot, co-pilot, passenger isolation, select switch for ATC priority, individual volume and squelch controls, input for aux, radio, tape, or CD players, true stereo system with dual channels, VOX override option, solid state electronics, and five year warranty. Includes horizontal or vertical mounting options. Accommodates up to six headset stations. Made in U.S.A. P/N 11-90000.....



DAVID CLARK ISOCOM VOICE ACTIVATED INTERCOM

Superior squelch circuit that eliminates syllable "clipping" Pilot-Copilot priority override during transmission Provides constant monitoring of Air Traffic Control Headset side tone if not supplied through radio control

Internally lighted ISOCOM assures clear identification of the volume and squelch controls and on/off switch Transmit indicator light (located between the volume and squelch knobs) is illuminated when a P-T-T switch is activated for external transmission Universal voltage capability (11-32V) that makes it compatible with either 14 or 28 volt electrical systems **Specifications:** • Weight: 0.7lbs • Dimensions: 2.562" x 2.562" x 6.125" with rear connector • Power Requirements: 11-32 VDC, 250 ma. max. • Temperature Range: -15° F to + 150° F • Total Headsets: 6 @ 600 ohms nominal • Total Output Power: 90mw • Lamp Current: 14V @ 120ma., or 28V @60ma. P/N 11-06002.....

AVCOMM AC-2EX PORTABLE INTERCOM



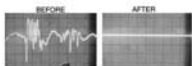
Expandable, stereo and portable AvComm's new AC-2EX may possibly be the only intercom you will ever need! Measuring a mere 5.1" by 2.85", the AC-2EX is designed to produce powerful communications you can depend on. The compact design makes it easy to carry in your flight bag, a feature pilots who rent aircraft will especially appreciate. Need 4 positions? Simply add the AC-2XM module to accommodate additional passengers. FEATURES: • AVCOMM's Expandable Portable: 2 to 4 place • Rugged compact design • Two 9V batteries with quick access or 12-28V DC power • Stuck mic' indicator & Power-transmit LED • For use with mono or stereo headsets • Pilot priority PTT • Fail safe feature • Wt: 14.1 oz. • Full 3 year factory warranty. AC-2EX intercom.....P/N 11-02264.....

MULTICOMM AIRCRAFT INTERCOM



MultiComm is the first complete, fully-integrated multi-function intercom, radio-interface and power supply system for ultralights and light-sport aircraft. With it's unparalleled low-noise operation, rich sound quality and unique operating features, you now - finally - have the cabin sound you always wanted. Includes everything you need to get up-and-running, prewired and plug-and-play. MultiComm has multi-pass active and passive filters in the intercom and power supply to take all the noise out, while optimising the voice band-pass for maximum speech intelligibility. MultiComm is unique in providing four distinct operating modes to give you independent control over each individual mic's activation for both intercom and radio in a variety of combinations. Radio sidetone feeds your transmitted audio back to your headphones, confirming that you are transmitting as expected and allowing you to adjust your speech for maximum effectiveness. P/N 11-05791.....

SMOOTHIE BRICKWALL NOISE FILTER



• Powers radios, intercoms, music players, and all digital gear • Eliminates all the electrical noise from your system • Provides fully-regulated power at your choice of voltage (adjustable) • Protects gear from all forms of power spikes, noise and over-voltage • Prevents in-flight problems including flaky operation and failures • Replaces most outboard power adaptors from other manufacturers • May be used in multi-unit installations

Specs: • Voltage out - 9.6-15.3V (adjustable, regulated within 1%) • Voltage in - 12-16V • Current out - 1.0A continuous, 3.0A intermittent • Size - 3.6 x 2.6 x 1.1 inches • Weight - 4.4 oz

***Note: Smoothie is a sophisticated noise filter and secondary voltage regulator - it does not replace the primary regulator used to power mechanical systems and charge the aircraft battery.**

P/N 11-05792.....

FLIGHT DATA SYSTEMS AP-60 AUDIO MIXER



An Audio Mixer is Required any time there is more than one Audio Source. This unit mixes and amplifies six audio inputs. Mounts behind the instrument panel. **For Example:** • Communications Radio Audio • Navigation Radio Audio • EFIS Warning Audio • Music Player Audio • Traffic Warning Audio **Specifications** • Aux. Audio Input • Compact (2.5" X 3.4 X .6"), Lightweight (2.1 oz) • 12-28 Volt Compatible • No Special Tools Required For Installation P/N 10-03427.....

AIRCRAFT SPRUCE

SKYCOM 2 & 4 PLACE INTERCOMS



Skycom 200 Portable Intercoms - measure just 2.25"x1.38"x 2.75". Features adjustable volume and squelch, y-adapter for 2 PTT switches & uses 9V battery power. SkyCom 200 2-PlaceP/N 11-11860..... SkyCom 200 4-PlaceP/N 11-11865.....

SKYCOM 400 PORTABLE INTERCOMS - features dual volume controls, pilot/crew/pass, pilot/co-pilot isolate, auxiliary music input & 9V battery or cigarette lighter operation. SkyCom 400 4-Place P/N 11-11875.....

AIRCRAFT SPRUCE ACS-400 4 PLACE PANEL MOUNT INTERCOM

Our own ACS-400 4-pl. panel mount intercom is voice activated and features music input and pilot isolate feature. The ACS-400 can be mounted in horizontal or vertical configuration. A top quality panel mount intercom at a very economical price. P/N 11-11880.....



PS ENGINEERING PM1000 PANEL MOUNT INTERCOMS

Eliminates clipped words and shouting. Includes individual volume and squelch controls for the pilot and copilot. Independent microphone circuits allow individuals who are speaking to be heard, and keep background noises shut out. Music can be added to the intercom for in-flight entertainment. Automatic muting when the intercom is active, or intercom and radio (PM1000II-series) ensures uninterrupted communications.



PS Engineering's "SoftMute" gradually returns the music to the original level when conversation stops. Although monaural, the music fidelity is still excellent. In most airplanes, you won't notice the lack of stereo separation. The PM1000 is an effective 2-place intercom, with individual volume and squelch controls, while the 4-place PM1000II adds a transmit indicator lamp, and music muting during radio traffic. The PM1000II, 11-11922, has pilot isolate mode that allows the pilot to concentrate on flying, while the passengers enjoy music and conversation. The PM1000II with CREW mode (P/N 11-11920) allows for separate intercom for the pilot and copilot positions, as well as separate music sources for front and back. The PM1000-series can be expanded using additional units (11-11918) for up to 8 places. A version with a digital recorder will store up to a minute of incoming radio traffic for instantaneous playback. The P/N 11-11909 is specifically designed for ultra-high noise environments, such as open cockpit aircraft. A round mounting plate allows installation in a 2.25" instrument mounting hole. The standard metal faceplate will accommodate horizontal and mounting configurations. Power:14 or 28 VDC; Size: 1.3"x 3"x 5.5"; Wt: 10.5 oz. 1-yr warranty if installed by authorized PS Engineering Dealer. Custom wiring harnesses available.

- PM1000II 4-Place Intercom P/N 11-11922.....
- PM1000II-w/ Internal Crew P/N 11-11920.....
- PM1000II-w/Digital Recorder P/N 11-11906.....
- PM1000II-w/Crew & Recorder P/N 11-11908.....
- PM1000 2-pl. for dual audio panels..... P/N 11-02553.....
- 6-pl. for expansion module..... P/N 11-02555.....
- Jack Kit (4-Place)..... P/N 11-11910.....

NAV-DATA 4 PLACE INTERCOM



Our Four place intercom is packed with features only found in much more expensive units.

- * Failsafe feature for pilot in the event of power loss
- * Pilot isolate switch
- * Operates on one 9 volt battery
- * Adjustable squelch (mute)
- * Voice activated (VOX)
- * Built in push to talk switch
- * Music in / Record out jacks

P/N 13-06088.....

AV

INTERCOMS

PS ENGINEERING AEROCOM III



The Aerocom III is a 2-place stereo portable intercom with IntelliVox™, a completely automatic VOX squelch. Each microphone computes the difference between speech and cabin noise. It opens instantly when somebody talks and only the microphone spoken into is active. This prevents unwanted background noise from entering the audio system. Powered by a 9V battery (10 hrs of use) or aircraft power. Features low battery alert. By using external push-

to-talk buttons (not included), both the pilot and copilot positions have the ability to transmit over the aircraft radio. The aerocom III will route stereo music to the headsets through the optional music cable. The music automatically mutes when there is intercom activity or radio traffic. There are two modes controlled by a top-mounted switch. In "ALL" mode, both positions hear radio communications, music, and have intercom capability. In the "ISO" mode, only the pilot side is connected to the aircraft radios, without intercom or music distractions. The copilot position continues to have music, and intercom communications with an expansion unit if installed. The aerocom III is expandable to 4-places with the Aerocom EX expansion unit available by special order. This contains separate music input and dedicated IntelliVox™ processors. Specifications: Size: 4.375"l x 3.250"w x 1.500"h; Wt: 10 Oz.; Power: 9V batt. or 12/24V aircraft power Battery Life: Approx. 10 hrs.; Headphone output: 40m w/channel into 150Ω, < 1% THD; ±3dB mic frequency range: 350 Hz to 4500 (to reduce noise); ±3 dB music frequency range: 180Hz-15,000Hz P/N 11-00427..... Expansion Unit (adds 2-places) P/N 11-01108.....

PM 3000 PANEL MOUNT STEREO INTERCOM



The world's first stereo intercom to be FAA-TSO approved. Available in 4- & 6-place versions. The 4-pl. PM3000 (P/N 11-11931) features pilot isolate and "All" reception modes. The PM 3000 6-place (P/N 11-00851) intercom includes a "CREW" mode. In CREW mode, the pilot & copilot are on one intercom channel, while passengers have conversation on another. Constant squelch adjustments are eliminated with the PM3000. A single squelch knob controls multiple circuits making the intercom one of the quietest to use, even in the noisiest airplanes. The 6-place PM3000 provides for two independent stereo entertainment inputs. This gives the passengers and the crew each the option to listen to their music device. The PM3000 has an automatic fail-safe interconnect to the aircraft systems. If power to the intercom is disrupted, the pilot's headset is automatically connected to the aircraft radio. With the PM3000 installed, both pilot and copilot have transmit capability over the aircraft radio. A 2-color LED shows green when power is on, and red during radio transmissions. This feature acts as a stuck microphone indication.

PM3000 4-Pl. Stereo Intercom (w/o digital recorder) – FAA-TSO; 4-pl. panel mount intercom, single music input. Installation hardware includes 4 sets of headset jacks, a music jack and reversible (horizontal and vertical) metal mounting plate. P/N 11-04843
2-1/4" Mounting plate (w/o crew)..... P/N 11-00394
PM3000 6-Pl. Stereo Intercom (w/o digital recorder) – FAA-TSO; 6-place panel mount intercom, dual music input. Installation hardware includes 6 sets of headset jacks, 2 music jacks and reversible (horizontal and vertical) metal mounting plate. P/N 11-00851
2-1/4" Mounting plate (w/crew)..... P/N 11-00393
PM3000 4-Pl. Stereo Intercom (w/digital rec.) P/N 11-02556
PM3000 4-Pl. Stereo Intercom (w/digital rec.) P/N 11-02557

PM501 PANEL MOUNT INTERCOM



Provides the pilot with standard features along with a few features found in more expensive systems. Features individual power output amplifiers for each headset, true pilot isolate for uninterrupted radio communications, music input with unprecedented high monaural music input, music muting during ICS communications with "soft mute" for easy listening entertainment, and PS Engineering's top quality squelch circuit. **PM501 Specifications** – Input power: 11-30VDC; Current Drain: <70mA Audio Output Power: 75m w into 150Ω load per channel. Total 225 m w available! Audio Distortion: <1% at 25 m w into 150Ω load <10% at 75m w into a 150Ω load 3dB Mic Frequency Response: 350Hz-6000Hz 3dB Music Frequency Response: 200Hz-15Hz Dims: 0.90"H x 2.60"W x 4.85"D Weight: 8.5 oz. P/N 11-11800

PMA4000 PANEL MOUNTED AUDIO PANEL/INTERCOM



Offers the simplicity of IntelliVox™ automatic intercom squelch. Designed with the kit and homebuilt in mind, the PMA4000 has 2 Com and 2 Nav inputs, along with 4 additional unswitched inputs. The PMA4000 is a monaural 4-place intercom. A speaker amplifier is included. The copilot volume control can also be remote controlled, for tandem aircraft.

PMA4000 w/Recorder P/N 11-11941
PMA4000 w/o Recorder P/N 11-01634
2-1/4" Mounting plate P/N 11-00395

PM1200 WITH AMP



The PM1200 is a 2-place panel mount intercom designed for the loudest of aircraft. If you fly Warbirds or other extremely noisy aircraft, PM1200 is perfect. Incorporating IntelliVox with our new Active Mic Processor (AMP), the PM1200 dynamically reduces noise inadvertently picked up by the Mic. It also supplies up to 120mW of headset audio.

P/N 11-01671

SIGTRONICS SCI-4 INTERCOM



The SCI-4 from Sigtronics features dual squelch indicator lights and dual volume and squelch controls to control volume and squelch independently for front and back seats, crew/pilot isolate and pre-wired harness for easy installation. The SCI-4 is RFI and EMI immune and measures

only 1"x 2.5". Includes all hardware and jacks needed for installation. SCI-S4/S6 Intercoms have the same features as SCI-4/6 Intercoms plus music inputs. 5-yr warranty. Made in USA.

SCI-4 4-place..... P/N 11-00027
SCI-6 6-place..... P/N 11-00028
SCI-S6 Stereo 6-place..... P/N 11-00425
SCI-S4 Stereo 4-place..... P/N 11-00424

SIGTRONICS BATTERY POWERED PORTABLE INTERCOMS

5-year warranty and a sure-fit for all students, instructors and aircraft renters. All have a music input and Aux output for recording lessons and radio communications. Both pilot and co-pilot positions have PTT jacks. Powered by an internal 9V battery (included), good for 40 hours of operation in airplanes lacking a cigarette lighter socket. A 4' Aux power adapter is included. When using the power cord, the battery is by-passed, preserving the life of the battery. The 2-place SPO-22, 4-place SPO-42 and 6-place SPO-62 are compatible with all standard aircraft headsets. The 4-place and 6-place models have a satellite box for rear seat positions to keep unwanted headset cords out of the pilot's way. A special HIGH-NOISE model, perfect for Ultra-lights and Kit aircraft, is available in all configurations. It filters out background noise, lowers the input level at mic amp, increases output signal, and mic interface can be modified to interface with Icom radios. Also features a sidetone modification. Made in USA.



For 2 People (Standard) P/N 11-02794
For 2 People (High Noise) P/N 11-02793
For Up To 4 People P/N 10-19115
For Up To 4 People (High Noise) P/N 11-01799
For Up To 6 People P/N 11-02798

SIGTRONICS SPORT 200/200S INTERCOM



Optimized for the High Noise Environment. Sigtronics 2-place Sport 200 & Sport 200S Intercoms are designed specifically for Light-Sport and Ultralight aircraft. Tested at ambient noise levels of up to 120dB, their Sport series intercoms will outperform all other intercoms

on the market. modes of operation, voice activated squelch and push to intercom — perfect for open cockpit aircraft, give the Sport 200 intercoms maximum flexibility and performance. To this they added special internal circuitry to optimize the intercoms for the most demanding high noise environments. Use Satellite Radio, MP3 or CD players as your audio source with stereo headsets for true stereo sound. With full or partial music muting for intercom and full mute for radio reception and transmission, you will be able to enjoy your music and never miss a radio call. Size: 1" x 2.5" x 4" deep. For even more convenience you can mount the intercoms horizontally or vertically. All hardware including headphone and microphone jacks are included with these easy to install intercoms. Weight: 4.5 oz., Jacks & wiring harness: 5.5 oz.; Input power: 11VDC - 32VDC; Current: 0.06 am

SPORT 200S Stereo panel mount int. P/N 11-02885
SPORT 200 Intercom P/N 11-02884

SIGTRONICS FACE-PLATE OPTION FOR INTERCOMS



This new faceplate fits the Sigtronics SPA-400, SPA-600 and SBD-800 voice-activated panel mount intercoms. Designed to adapt these compact units to the standard 2-1/4" instrument hole, the new printed bezel increases mounting flexibility and customer convenience. Made of durable and lightweight ABS plastic.

P/N 11-08500..... Ea.

INTERCOMS

SIGTRONICS MINIATURE PANEL-MOUNTED INTERCOMS



Measuring only 1" x 2-1/2" x 4" deep, only 4.5 oz, the SPA-400 and 6-place SPA-600 are FAA TSO'd and can be mounted either horizontally or vertically. Also available in special "HIGH-NOISE" model SPA-400N for Ultra-lights, and open cockpit aircraft, kit aircraft and warbirds. The se intercoms

allow you to put "push-to-intercom" buttons in the aircraft to eliminate VOX mode when desired. This is especially good for open-cockpits where wind noise can be a problem. The SPA-400N simulates side-tone because some radios that are currently used in these markets do not have it. The SAS-440 and SAS-640 intercoms feature Sigtronics' exclusive "Auto-Squelch". One touch of the squelch button and the intercom perfectly sets the squelch level to your headsets and the aircraft noise level. All Sigtronics intercoms are voice activated with a 5-year warranty and operate on any voltage from 12V to 24V. Made in USA.

- 2 Thru 4 Way (Standard SPA-400.....P/N 11-02791
- 6 Way (Standard) SPA-600P/N 11-02801
- 4 Way (High Noise) SPA-400N.....P/N 11-02792
- 2 Thru 4 Way (Auto Squelch) SAS-440.P/N 11-02804
- 6 Way (Auto Squelch) SAS-640P/N 11-02816
- Retrofit stereo switcher-use with previously installed SPA-400 intercom - RES-401P/N 11-02796

SIGTRONICS SPA-4S STEREO INTERCOM



The SPA-4S is a 2 or 4 place voice activated intercom with inputs for stereo music. It is a small, compact system that allows it to fit in space critical panels. The SPA-4S uses the industry standard Sigtronics squelch, fast on

slow off for hands free communication. The music will full mute during ATC communication and partial mute during intercom communication. Each intercom comes complete with all necessary mounting hardware, jacks, and two 4-foot pre-wired harnesses. The SPA-4S only requires 1" X 2.5" of panel space, mounts horizontal or vertically, is 4" deep, and weights 5.5 oz. The SPA-4S intercom can easily upgrade the SPA-400. The SPA-4S uses the same panel hole pattern and interface cable as the SPA-400. A second cable is provided for the music inputs and headphone outputs. The SPA-4SN is available for the high noise amateur built aircraft. As with all of Sigtronics products, the SPA-4S is RFI and EMI immune. Power: 11-32 VDC.

- Standard SPA-4S P/N 11-00567
- High Noise SPA-4SN P/N 11-00568

PILOT USA PA200 SERIES INTERCOM

PA200 World's Smallest Portable Intercom. A solid VOX intercom offering clear communications. Adjustable volume control and squelch control allows for easy adjustment for all ambient noise levels. 2 push-to-talk switches can be used with the intercom allowing transmission through the radio. Unit is ideal for rental aircraft. PA 200R is also available for motor-sports. FEATURES: •On/Off volume control •Adjustable squelch circuitry •Fail-safe capability •Y-adapter for 2 push-to-talk switches •Powered by one 9V battery (24 hours) •Size: 2.25" x 1.38" x 2.75" •3-yr unconditional warranty •Wt: 8 oz. (227 grams)



- PA-200T 11-02712 PA-200IK.....11-11530
- PA-200ET..... 11-11525 PA-200IC.....11-03544
- PA exp box... 11-03541 PA-200V.....11-03545
- PA-200TA24. 11-03542 PA-200JD.....11-03546
- PA-200TA23. 11-03543 PA-200R.....11-03547

PILOT USA PA400 SERIES INTERCOM

The stereo version PA-400ST intercom is a portable design that has been used successfully in general aviation for over 18 years. No other intercom on the market has the features and capabilities of the PA-400ST intercom.

This particular series has been recently modified to include a cell phone jack for your safety and convenience. Before using in an aircraft we recommend that you take a check-ride in your living room and become familiar with all the features of your new intercom. A hook-up diagram is included in this guide along with brief description of each function and each control setting.

- PA400ST P/N 11-03548



FLIGHTCOM IISX PORTABLE INTERCOM



The IISX is the world's most popular 2-place, portable intercom. The modular design offers expansion capability to the backseat if needed. * Expandable to 4-place portable with optional SR-4 expansion module * Auxiliary inputs and outputs for music or recording flight information * Low-battery indicator and pilot isolate * Uses aircraft power or 9-volt battery Flightcom IISX 2 place

includes: • IISX Intercom • Cigarette lighter adapter • Co-pilot transmit cable Flightcom IISX 4 place includes: • All parts in the 2 place • SR-4 expansion module

- Flightcom IISX 2 Place.....P/N 11-08700
- Flightcom IISX 4 Place.....P/N 11-08710
- SR-4 Remote Expansion module.....P/N 11-04260



FLIGHTCOM 403D PANEL MOUNT STEREO INTERCOM



Stereo intercom features include 6-place capability, instant music muting, and pilot isolate so you could focus on your flight and eliminate backseat chatter.

* 3-place transmit capability * Easy to adjust squelch and volume controls * Instant music muting, pilot isolate Specifications: * Weight: 5 oz * Length: 5" * Width: 2.4" * Height: 1.2 in * Not TSO'D * Two-year warranty Flightcom 403 intercom includes * 403 Intercom * Connector kit * 6 place stereo jack kit * 2-1/4" hole face plate & vertical/horizontal face plates

Switches are provided in installation kit to allow individual headphone positions to select either stereo or mono mode, allowing the use of monaural headsets

- 403 w/o recorder w/ jack kitP/N 11-17605
- Stereo input and output jack kit.....P/N 11-18755

FLIGHTCOM 403MC PANEL MOUNT INTERCOM



The 403 is a 6-place panel mount, voice-activated stereo intercom. This easy to use intercom is

designed to fit almost anywhere in the panel. Includes: * 403MC Intercom * Connector kit * 4 place mono jack kit. Features: * 3-position transmit capability * Selectable muting and pilot isolate * Auxiliary input for music or alerts * Rectangular faceplate can be mounted horizontally or vertically Specifications: * Weight: 3.6 oz * Length: 2.62 in * Width: 2.37 in * Height: 1 in * Not TSO'D * Power requirement: 12-28 VDC * Two-year warranty P/N 11-08755

XCOM INTERCOM



The XCOM Intercom is a state-of-the-art, digitally controlled, intercom system suitable for nearly every 2 or 4 place aircraft. The XCOM Intercom features a full VOX (Voice Activated) intercom with second com ability, music input with muting and the ability to use different branded headsets without compatibility issues. The XCOM Intercom was originally

designed for the Microair, Filser, Dittel and Becker aircraft radios but it has now been successfully mated to the leading handhelds as well as panel-mounted Icom, Narco, King and the like. Measuring only 2-1/8 x 1 x 3-7/8" or (53 x 24 x 100mm) and with a panel size of only 1 x 2 1/8 (53 x 24mm), it's one of the smallest and lightest intercoms in the world and only draws 60 ma (at 14 V) during operation. Mount horizontally or vertically. The XCOM Intercom has no voice clipping; it's truly instant on / slow off. Nothing is lost in conversation between the pilot and passengers and the digital voice control provides clear and crisp communication at all times. The XCOM Intercom monitors and reduces background noise when the voice circuit is open and the noise in the cockpit is greatly reduced during conversation or transmission. One simple DB15 connector is all that's needed to control the XCOM Intercom, on top of the Intercom is the RS-232 port for future software updates. 2 com inputs cater for a primary airband com and a secondary VHF, UHF or Marine band transceiver. Additional input for CD player, FM Radio or MP3 player is available with auto muting to enable seamless communication in the cockpit. Selecting the Pilot Isolate feature allows the pilot to only hear his com radio and the co-pilot & passengers can continue talking and listening to the CD music without being interrupted by airways chatter. Landing gear, stall and GPS warnings can all be configured for input to the intercom unit so that they are audible through the headsets. Voltage: 10-30 VDC. 2 yr warranty. P/N 11-02207

FLIGHTTECH ITC-2004 ENRI 4-PLACE INTERCOM



4 place portable intercom with pilot isolate capability. Features: Exclusive Electronic Noise Reduction circuits. Up to 110db of Noise Reduction. Continuous Audio, No missed Syllables or Words. Built-in Cellular Phone Interface, includes patch cable. Pilot/ All Switch. 9 Volt Battery or External DC Operation, Cigarette Lighter Adaptor included. Auxiliary Stereo Audio Input with Radio Mute and Intercom Audio Mute. Light weight, 10 oz. Push-to-Talk Button for Keying the Comm Radio. Pilot and CoPilot Radio PTT Jacks. Small Size: 5.5" x 1.5" x 3.2" Three Year Warranty....P/N 11-17669

AV

INTERCOMS



FLIGHTTECH ITC-401-ENRI PORTABLE INTERCOM

The ITC-401-ENRI 2-place intercom features the Enhanced Noise Reduction Intercoms circuit in a basic, small package. With ENRI, the problems common with voice activated intercoms are eliminated. There are no squelch controls to adjust, no automatic squelch circuits that keep changing levels, only one single volume control. ENRI continuously monitors background noise picked up by the headset microphone and eliminates it, even while talking. Excellent for open cockpit aircraft. 9V Battery Operation • Pilot/All Switch • Available with cable and standard plugs or ICOM A-22, A3 and A4 Cable & Plug • 3 year warranty • 4"L x 2.5"W x 1.5"D.

ITC-401-23 - Plugs directly into Icom A5 & 23 with out the need for additional cables P/N 11-01005

ITC-401/1-ENRI - Plugs into Icom A22, A3, A4 with out need for additional cables P/N 11-00825



FLIGHTTECH ITC-2003-ENRI REMOTE PANEL MOUNT INTERCOM

The ITC-2003-ENRI features ENRI technology, a unique design, a small panel control unit and a remote intercom unit. The small control panel consisting of a Volume control and a Pilot/All switch measures only 1" w x 1.3" d x 1" h. The second part, the intercom unit is only 4.6" x 3.1" x 1.7" and included mounting tabs. Because of D.C. switching and control between the panel control and the intercom, the mounting location is not critical. Simply mount the intercom unit in an easy to reach location, run cables to the headphone jacks, power and a small six conductor cable to the panel control unit. The Electronic Noise Reduction feature is exclusive to FlightTech Intercoms and allows for quiet communications without the background noise common to Voice Operated Squelch controlled intercom. With ENRI, the microphones are active at all times, ENRI monitors the background noise and eliminates it allowing only the headset user's voice to pass.

Power: 12V or 24V P/N 11-00172
With preassembled 2-place cable P/N 11-00822

FLIGHTTECH MINIVOX PORTABLE INTERCOM

The MiniVOX two place portable intercom is designed for the student pilot and renter pilot requiring a basic low cost voice operated intercom. Measuring 4" x 2.5" x 1.5", the MiniVOX features adjustable Squelch and Volume controls, on-board Push-To-Talk button and up to 25 hours of operation from a 9V battery. Ease of operation, long battery life and a small size make the the new MiniVOX an ideal entry level intercom. Weighs less than 10 oz. Made in the USA.

P/N 11-02126

FLIGHTTECH ITC-401TC INTERCOM

ITC-401TC is different from the rest of the ITC-401 series in that the "Noise Reduction" control is located on the front of the intercom, rather than an internal "Set and Forget" adjustment. The ITC-401TC is available in versions with cables and plugs for panel mount jacks as well as handheld radios and they include the following: ITC-401TC, Standard cable and plugs for panel jacks P/N 11-03201

ITC-401TC-1, Cable and plugs for the ICOM, A22, A3, A24, & A P/N 11-03202

ITC-401TC-23, Cable & plug for the ICOM A23 & A5 P/N 11-03203



FLIGHTTECH ITC-2001-ENRI 2PLACE PORTABLE STEREO INTERCOM

Ideal for the renter pilot or as a permanent intercom without the installations concerns associated with a panel mount intercom. Features: Exclusive Electronic Noise Reduction circuits. Up to 110db of Noise Reduction. Continues Audio, No missed Syllables or Words. Built-in Cellular Phone Interface, includes patch cable. Pilot/All Switch. Specifications: 9 Volt Battery or External DC Operation, Cigarette Lighter Adaptor included. Auxiliary Stereo Audio Input with Radio Mute and Intercom Audio Mute. Light weight, 10 oz. Push-to-Talk Button for Keying the Comm Radio. Pilot and CoPilot Radio PTT Jacks. Small Size: 5.5" x 1.5" x 3.2" Three Year Warranty.

| Model | Description | Part No. | Price |
|---|---|----------|-------|
| Electronic Noise Reduction Intercoms | | | |
| ITC-2001-ENRI | 2-place portable intercom w/ENRI | 11-17668 | . |
| ITC-402P-ENRI | Same as above but w/ cables and jacks | 11-00926 | . |
| ITC-404SP-ENRI | 4-place stereo intercom panel mount | 11-01354 | . |
| ITC-2001-1 | 2 Place Intercom for use with (ICOM A22, A24 AND A6 Radios) | 11-07010 | . |
| Model | Description | Part No. | Price |
| Pre-Assembled Cables | | | |
| ITC-404S-P | 2-place Cable | 11-01377 | . |
| ITC-404S-P | 4-place Cable | 11-01378 | . |
| ITC-2003 | 2-place Cable | 11-01379 | . |
| ITC-2003 | 4-place Cable | 11-01380 | . |
| ITC-404S-P | Interface Cable | 11-01381 | . |

SOFTCOMM PANEL MOUNT INTERCOMS



ATC-2P (2-passenger), ATC-4P (4-passenger) & ATC-6P (6-passenger) panel-mounted intercoms are so compact that they fit most anywhere in the aircraft's panel. Designed to mount either horizontally or vertically, these panel-mounted intercoms will fit in any homebuilt, business aircraft, or general aviation aircraft in production today, and offer stereo or mono sound. The panel-mounted intercom has an exclusive Softcomm feature of a back-up battery (9V) that affords power to the Intercom when the aircraft's master power is shut off or fails in flight. The battery is automatically switched off when aircraft power is present and on when absent. The panel-mounted intercom offers SoftComm's features of Recorder-In and Recorder-Out. A miniature remote audio panel houses this feature and can be located anywhere the pilot prefers. This allows recording of clearances, flight lessons, enroute weather and flight events. The ATC-2P, ATC-4P, & ATC-6P panel-mounted intercoms come complete with mounting instructions, wiring diagrams, all required microphone and headphone jacks, audio recorder jacks, and bi-directional mounted nomenclature plates. These intercoms are supplied with pre-tested 8 ft. cable assembly terminated into a DB25 pin connector. Size: 1"hx2.5"wx6"d. Power 12Vdc. Wt:6.25oz., 3yr warranty.

| | | | |
|---------|---------------------------|--------------|-------|
| ATC-2P | 2-Place Intercom (mono) | P/N 11-11812 | ..... |
| ATC-2PS | 2-Place Intercom (stereo) | P/N 11-02216 | ..... |
| ATC-4P | 4-Place Intercom (mono) | P/N 11-11822 | ..... |
| ATC-4PS | 4-Place Intercom (stereo) | P/N 11-11824 | ..... |
| ATC-6P | 6-Place Intercom (mono) | P/N 11-11824 | ..... |
| ATC-6PS | 6-Place Intercom (stereo) | P/N 11-11805 | ..... |
| ATC-4PS | 4-Place Intercom (stereo) | P/N 11-11805 | ..... |
| ATC-6PS | 6-Place Intercom (stereo) | P/N 11-11807 | ..... |



ITC-402P/404S-P PANEL MOUNT INTERCOMS WITH ENRI

The ITC-402P Enhanced Noise Reduction Intercom is a small, easy to install intercom designed for the pilot who flies a two or four place aircraft. Featuring single control volume control operation, the pilot and passenger can enjoy quiet communications on those long cross country trips. The ITC-402P includes a stereo auxiliary audio input. To prevent missing ATC communications, the music is muted when either audio from the communication radio is present or there is intercom audio. The new ITC-404S-P has full auxiliary Stereo in and Stereo out, with dual function muting. Features: • Enhanced Noise Reduction Technology • No Squelch circuits or controls • Size: 2.1" w x 1.2" h x 3.1" l • Single Volume Control Operation • Pilot/All Isolation Switch • Pilot and Copilot Push-to-Talk Switch Inputs • Stereo Music Input w/Muting • 12 to 28VDC operation. • Cellular Phone interface, include phone cable.

| Model | Description | Part No. | Price |
|---|--|----------|-------|
| Electronic Noise Reduction Intercoms | | | |
| ITC-404SP | 2-place portable intercom w/ENRI w/ cables and jacks | 11-00926 | . |
| ITC-404SP | 4-place stereo intercom panel mount Note: Will not work w/ the unamplified dynamic mic. | 11-01354 | . |

SOFTCOMM PORTABLE INTERCOMS



These top quality, economical intercom systems are perfect for any type aircraft and are compatible with any standard headset. Features include automatic on/off power, panel controls for volume and gain and a pilot isolate switch (ATC-4 only). The intercoms are 9V DC portable or panel mountable with pilot and copilot transmit as a standard feature. These intercoms can be used with other equipment to record instructions or play cassette music. The new model of the ATC-2 has reduced size and weight, and a front-panel mounted PTT switch. The improved ATC-4 and ATC-6 also have a new dual transmit design. All units have aux power cord and stereo cable. With pilot isolate and push-to-talk switch. Model ATC-2T is a 2-place portable intercom designed for the student pilot. It has a recording feature that allows all CFI and ATC instruction to be recorded on a standard cassette player for future study. It is 9V battery powered and is compatible with all general aviation headsets and radios.

| | | |
|----------------------------------|--------------|-------|
| 2-Place Portable (mono) ATC-2Y | P/N 11-05818 | ..... |
| 4-Place Portable (mono) ATC-4Y | P/N 11-05819 | ..... |
| 4-Place Portable (stereo) ATC-4S | P/N 11-05905 | ..... |

SOFTCOMM INTERCOMS FOR ULTRALIGHTS



These Softcomm Intercoms are specially designed to operate with today's transceivers in mind. The ATC-2L models are full featured intercoms with Record-In and Record-out, a PTT switch mounted in the face plate and a "AUX power" input for using aircraft power instead of the 9 VDC battery(S), Listen to CB's, CD players and AM/FM radios while in flight. Features music "MUTE" circuit, volume control and "squelch" adjustment. Housed in a rugged ABS case with a space for 2 batteries, these intercoms are compact and fully portable.

| Model | Description | P/N | Price |
|------------|-------------------------------------|----------|-------|
| ATC-2L-A23 | Icom, IC-A23, IC-A5 | 11-02217 | . |
| ATC-2L-A20 | Icom, Delcom and Bendix King radios | 11-07700 | . |
| ATC-2L-A22 | Icom's A-22 compact transceiver | 11-07710 | . |
| ATC-2L-A4 | Icom's A-4 "low-cost radio" | 11-07715 | . |

BOSE AVIATION HEADSET X



Enjoy full-spectrum noise reduction, comfortable fit and clearer reception when you fly with the Bose® Aviation Headset X. Thanks to proprietary TriPort® headset technology, this unique combination of benefits is available in one lightweight headset. The redesigned control module and greater usability make the #1 headset choice of many pilots and military personnel even better.

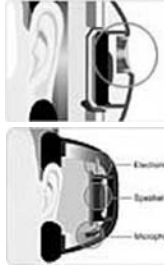
BOSE® TECHNOLOGY MAKES THE DIFFERENCE - Most active noise reduction headsets require large earcups and considerable headband force to muffle aircraft noise. Through 25 years of research, Bose® has developed a better solution—TriPort® headset technology. This patented innovation enables a smaller, more comfortable headset that delivers full-spectrum noise reduction.

Acoustic Noise Cancelling® headset technology contributes to this high level of noise reduction. It monitors sound at the ear, identifies unwanted noise and creates an out-of-phase signal to reduce it. Their active equalization circuitry also delivers clean, full sound that improves the intelligibility of radio and intercom audio. In fact, U.S. Air Force tests with Bose headsets achieved intelligibility scores of 95% at 115db compared to 80% for conventional headsets.

AT BOSE, A COMFORTABLE FIT IS MISSION CRITICAL - Whether you're a general aviator or helicopter pilot, comfort counts. That's why Bose® designed the Headset X with 50% less clamping force than most active noise reduction headsets. The solid magnesium headband is extremely lightweight yet durable. The sheepskin cushion eliminates hot spots, and soft, padded ear cushions provide an effective seal—even over glasses. The result is superior noise reduction in a comfortable headset that weighs only 12 oz.

LONGER, SMARTER BATTERY LIFE - Proprietary AdaptiSense™ headset technology allows at least 40 hours use from just 2 AA batteries. It supplies power as needed, detects when you've stopped wearing the headset and automatically shuts off the active electronics. Plus, the new tri-color indicator provides real-time battery status.

FOCUS ON YOUR FLIGHT, NOT YOUR HEADSET CONTROLS - The redesigned control module is 30% smaller than the previous version and even easier to use. Its slim design puts all functions—including dual thumbwheel volume controls—within easy reach. The improved boom microphone design enables smoother, more precise adjustments. Experience the full-spectrum noise reduction, comfort and clearer communication of Aviation Headset X. Choose the configuration that best fits your flight needs: an installed version or one of two portable options.



KEY FEATURES:

TriPort headset technology Proprietary Bose technology utilizes three small ports in the earcups to produce a rich audio performance that's remarkable for headphones this small. Enjoy clearer communications from a headset that stays comfortable on long flights.

Acoustic Noise Cancelling headset technology Only from Bose, this patented technology electronically identifies and reduces unwanted noise, allowing improved intelligibility of radio and intercom audio. The continuous roar of flying is reduced, so your concentration is improved.

AdaptiSense headset technology Sophisticated electronics monitor current demand and instantaneously adjust the voltage to maintain maximum performance. Smart shutoff detects when you've stopped using the headset for even greater battery life—up to 40 hours from just two AA batteries. (Applies to portable version only.)



BOSE HEADSET X PRICING

| Description | Part No. | Price |
|---|----------|-------|
| Portable (Batt. Pk) Twin Plug, Straight Cord | 11-01834 | . |
| Portable (Batt. Pk) Twin Plug, Coil Cord | 11-01835 | . |
| Panel Powered with Straight Cord | 11-01836 | . |
| Panel Powered with Coil Cord | 11-01837 | . |
| Port. (batt. pk) hdst w/helicopter plugs (elec mic) for commercial/civilian use | 11-02822 | . |
| Portable (batt. pk) headset w/helicopter plugs (dyn mic) for military use | 11-02832 | . |

CABLE ASSEMBLIES & PARTS

| Description | Part No. | Price |
|--|----------|-------|
| Portable (Batt. Pk) Electret Mic, Straight cord, Twin Plug | 11-01839 | . |
| Portable (Batt. Pk) Electret Mic, Twin Plug, Coil Cord | 11-01840 | . |
| Installed Electret Mic, Straight Cord | 11-01841 | . |
| Installed Electret Mic, Coil Cord | 11-01842 | . |
| Portable (Batt. Pk) Electret Mic, Coil Cord, U-174 plug | 11-01843 | . |
| Portable (Batt. Pk) Dynamic Mic, Coil Cord, U-174 plug | 11-01844 | . |
| Installed Dynamic Mic, Coil Cord | 11-01845 | . |
| Aircraft panel installation kit | 11-01846 | . |
| Bose replacement earseals | 11-02783 | . |
| Bose Boom Mic Windscreen Replacement | 11-04846 | . |
| Bose Headband Cushion Kit | 11-04845 | . |

CLARITY ALOFT HEADSET

Used to improve both hearing protection and speech communications. Each earpiece includes a miniature speaker that reproduces speech signals from the aircraft audio system. The replaceable compliant foam tips attach to the earpiece and contain a pathway for the sound to travel from the transducer to the ear. Provides the highest level of hearing protection available by any method including active noise reduction. (ANR) The noise-canceling microphone is a high fidelity noise canceling Electret Condenser microphone. Include a Push-to-Talk button in the Volume control box. This button could also be used as a backup in case of other system failures. Balance and comfort are the result of its elegantly simple design. P/N 11-02923.....

CLARITY ALOFT PRO HEADSET

All the features you'll love from the original with **TSO Certification** and additional features like: **Music Input**. Equipped with a music input in the volume control box that will accommodate most music devices through a 1/8 inch plug. **Adjustment Band**. Some people prefer a closer fit, an adjustment band is included in your purchase. The adjustment band is a flexible band that slips over the back of the headset frame and tightens with toggles at each end. P/N 11-05794.....

LIGHTSPEED MACH 1 HEADSET

Designed without any of the traditional boundaries of headset implementation, the Mach1 series of headsets is design by simplifying the concept of an Aviation headset. Based on new In-the-Ear (ITE) technologies, utilizing advancements in Ear Plug attenuation and comfort, artisan crafted custom ear molds, and new ultra small speakers and noise-canceling microphones, the Mach1 series weighs less than an ounce, delivers crystal clear audio communication, a stable face-contouring fit, and over-the-ear support

Features:

- Lightweight: Magnesium Alloy Construction Makes This Product Incredibly Lightweight Yet Rugged and Durable
- Replaceable Foam Ear Plugs: Comes Standard with Patented MATRIX™ No Roll Foam Ear Plugs by Howard Leight. Other Plugs Available For Optimal Customer Fit and Performance.
- Optional: Sensaphonics sound-isolating custom soft gel silicone ear plugs.
- Stereo Hi-Fidelity Sound: For Maximum Music and Speech Reproduction
- Music Interface: Plug in a Portable CD Player, or Any Digital Music Player with powered amplifier. (utilizes lithium disk battery)
- Cell/Satellite Phone Interface: Make a Call Using Your Headset
- "Pilot Isolate" For Conversation Privacy When Cell Phone is in Use
- 5-Year Warranty

| Description | Part No. | Price |
|---|----------|-------|
| Lightspeed Mach 1 Headset | 11-03606 | . |
| Lightspeed Mach 1C Headset (custom soft gel silicone ear plugs as well as the originals) | 11-05622 | . |
| Lightspeed Mach 1S Headset , Includes Custom Ear Molds, Single-Sided Solution for The Executive Jet Pilot | 11-05890 | . |

AV

LIGHTSPEED HEADSETS

ZULU HEADSET BY LIGHTSPEED



Not just the best headset Lightspeed has made, it is the most popular Lightspeed ANR headset. Made with magnesium, stainless steel, and four types of composite plastics, it's extremely durable and yet weighs just over 13 ounces. Inside the headband is a core of thin, flexible spring steel. Luxurious, soft

leather surrounds 'extra wide' ear seals made from temperature sensitive foam. Calibrated magnesium sliders adjust ergonomically to accommodate your exact head size with uniform pressure. The vented headpad evenly distributes the weight of the headset. All wiring is fully concealed using patented design features, and Zulu folds flat for easy storage. Bluetooth® allows Zulu to connect wirelessly with your cell phone, MP3 player, or other compatible device. richness of Zulu's FRC audio system. Fortunately, our design team included musicians and audiophiles. Setting a new standard for clarity, fidelity, comfort, and quiet. From the start we intended to set a new standard in clarity and fidelity.

Here are just a few of the premium components we insisted on:
 • Gold contacts for all wire connections • High Grade audio quality film capacitors are used throughout the signal path.

| Description | Part No. | Price |
|---|-----------------|--------------|
| Zulu-Circumaural, ANR, Portable, Straight Cord, Standard GA Plugs | 11-05617 | . |
| Zulu-Circumaural, ANR, Panel Power, Straight Cord, Single Lemo Connector (For panel install kit use PN 11-01846) | 11-05913 | . |
| Zulu-Circumaural, ANR, Panel Power, Helicopter coil cord, Single Lemo Connector | 11-05914 | . |
| Zulu-Circumaural, ANR, Portable, Helicopter coil cord, Single U-74 Plug | 11-05915 | . |
| Zulu-Circumaural, ANR, Portable, Helicopter coil cord, Standard Dual GA Plugs | 11-07553 | . |
| Accessories | Part No. | Price |
| Panel install kit | 11-01846 | . |



THIRTY-3G HEADSETS

FEATURES: • Cell/Satellite Phone Interface Patented AES™ "Auto Shut-Off" Powers Down the Active Electronics if System is Left Unattended • Battery Status Indicator • ANR Power for up to 30 Hours on just Two AA Batteries • Auxiliary Audio Interface for Music or Audible Checklist/Warnings • Personal Side-Tone EQ with Bass and/or Treble Boosting • Dual Volume Controls, Stereo or Mono switchable • Adjustable Gain Pre-amp Allowing for Field 'Balancing'

of Mic Sensitivities • Temperature Sensitive Confor-Foam™ Ear Seals • Weighs Under 16 Ounces • Panel Power Option Available • 5-Year Warranty • Padded Headset Bag, Mic Wind Screen, and Batteries Included
 Thirty-3G ANR Headset..... P/N 11-01614.....
 Thirty-3G ANR Headset panel powered..... P/N 11-02644.....

NEW FEATURES: • **New Battery Box Holster and Clip** – All 3G headsets now include a plastic holster and metal clip to help keep the control box positioned on the map pocket, shirt pocket, or other location.
 • **New Battery Box** – Lightspeed has redesigned the 3G battery box to incorporate the following changes: *Mechanical power switch with increased "throw" and mechanical/audible on/off feedback *Re-positioned batter indicator LED. Moved from under power switch. *Re-positioned the Stereo/Mono switch. Relocated to inside the battery compartment *Improved battery securing hardware

20XLC HEADSET

22-24dB of Active Cancellation
 12-22dB of Passive Attenuation

FEATURES: • Cel phone interface • Patented AES "Auto Shut-Off" powers down the active electronics if system is left unattended • Small in-line battery control box • Battery status indicator • ANR Power for more than 50 hours on just 2 AA Batteries • Auxiliary audio interface for music or audible checklist/warnings • Dual volume controls, stereo, or mono-switchable •

Soft 1-1/2" thick temperature Sensitive Confor-Foam Ear Seals • Weighs under 16oz.

20XLC Headset P/N 11-02647

LIGHTSPEED QFR SERIES HEADSETS

The QFR headsets give you industry leading attenuation & affordability. The breakthrough ear cup design achieves an industry-best NRR of 28dB of passive noise reduction. While a new kind of ANR circuitry crushes another 12-14 dB of engine noise.

QFR Series Standard Features:

- Reversible boom allowing for left or right side operation
- Adjustable gain pre-amp allowing for field balancing of mic sensitivities
- 3 year warranty



QFR SOLO/C HEADSET

• At 28.7 NRR, it is 3dB quieter than the next closest models and 5-7dB better than most on the market. • Lightweight, under 12 oz. • Low profile, padded headband allows for hrs of comfortable wear in constricted cabins. • Cel / satellite phone interface • Closed cel foam padded ear seals. • Padded headset bag, mic wind screen.

P/N 11-02651



QFR SOLO SSC HEADSET

The quietest, most comfortable passive headset ever offered: • Cell/satellite phone interface • Confor-Foam™ Padded Ear Seals • Soft plush headpad • Lightweight: under 12oz • Gentex® noise cancelling microphone • Adjustable gain pre-amp allowing for field 'Balancing' of mic sensitivities • Enhanced audio reproduction for greater intelligibility • Dual volume controls, stereo or mono switchable • Reversible boom allowing for left or right side operation • Helicopter version available • 3-yr warranty • Padded headset bag, mic wind screen, & batteries included.

P/N 11-02650

QFRXC ANR HEADSET

10-12 dB of Active Cancellation
 24-26 dB of Passive Attenuation

• Cell/satellite phone interface • Patented AES™ "Auto Shut-Off" powers down the active electronics if system is left unattended • Small in-line battery control box • Battery status indicator • 2 AA batteries provide 25 hours of operation • Auxiliary audio interface for music or audible checklist/warnings • Dual volume controls, stereo or mono switchable • Adjustable gain pre-amp allowing for field 'Balancing' of Mic Sensitivities • Reversible boom allowing for left or right side operation • Confor-Foam™ padded ear seals • Soft plush headpad • Helicopter version available • 3-yr Warranty • Padded headset bag, mic Wind Screen, & batteries included

P/N 11-02649



LIGHTSPEED HEADSET ACCESSORIES



3G SERIES ACCESSORIES

| Description | P/N | Price |
|-----------------------|----------|-------|
| 1" Soft Leather Seals | 11-01987 | . |
| 1.5" (XL) soft seals | 11-01988 | . |
| Music Patch Cord | 11-01989 | . |
| Cell Patch Cord | 11-01990 | . |

XL SERIES ACCESSORIES

| Description | P/N | Price |
|-----------------|----------|-------|
| 1.5" Soft Seals | 11-01988 | . |

QFR & SKYCOM SERIES ACCESSORIES

| Description | P/N | Price |
|--------------------------|----------|-------|
| 0.75" Comfort Seals | 11-01284 | . |
| Replacement Stock Seals | 11-01995 | . |
| Zippered Comfort Headpad | 11-07555 | . |
| Gel Seals | 11-07556 | . |

HEADSET ACCESSORIES

| Description | P/N | Price |
|-------------------------|----------|-------|
| Mic Wind Screen | 11-00358 | . |
| Dual headset flight bag | 11-01996 | . |
| A-144 Ear Seals | 11-05785 | . |

HEADSETS

AIRCRAFT SPRUCE SKYCOM & SKYPRO HEADSETS



SKYCOM II SERIES - Offer a family of products with a different look, fit and performance from the 'traditional' headset design. While >30% lighter in overall weight, they offer better quieting with greater comfort and user features. They were designed around the best hearing protectors offered in the Industrial Safety world to offer maximum passive noise rejection. The thin, flexible wireframe headband design easily contours to your head, limiting clamping pressure yet maintains a very low profile for canopy clearance. The ear seal system offers a larger ear opening with numerous options for type of seal available. The Boom mounts under the cup and is reversible for use on both sides.

All models include dual volume controls, Electret N/C mics with adjustable gain, Stereo/Mono compatibility, a carry bag, and a 3 year warranty. Model-specific features include Cellphone interface, and stereo music interface with muting, and ANR performance with a convenient small/inline, 2 AA battery solution.

Skycom II: 11 Oz, 24 dB, 3 Yr Warr..... P/N 11-02658.....
SkyPro II: with Cell interface..... P/N 11-02660.....
Skycom II ANR: Cell/Music w/muting..... P/N 11-02659.....



SKYCOM I SERIES - Was first offered over 10 years ago and is designed around the traditional, oval-shaped headset design used for over 40 years in aviation. It features a steel headband, large headpad, and metal yoke/pivot system. Earseals mount around a protruded flange and are easily replaceable. The reversible boom mounts on the side of the cup and offers two styles on the models offered.

All models offer electrets N/C mics and warranties range from 1-3 years. The ANR model offers over 15dB of additional cancellation using a detachable 9 volt battery module

Skycom 40-A: 18 oz, 24 dB, 1 yr Warr P/N 11-09099.....
Skycom 80-A: 18 oz, 23 dB, 1 yr Warr P/N 11-02214.....
Skycom ANR: >15 dB ANR, 3 yr Warr..... P/N 11-09098.....

SET OF 2

Skycom 40-A: 18 oz, 24 dB, 1 yr WarR.....
Skycom ANR: >15 dB ANR, 3 yr Warr.....

REPLACEMENT EAR SEALS

These seals fit SKYCOM H-40A, SKYCOM ANR, and SKYPRO H-80A headsets.

Replacement Gel Ear Seals..... P/N 11-04680..... /pr.
Replacement Foam Ear Seals..... P/N 11-04681..... /pr.

HEADSET/INTERCOM PACKAGES

AIRCRAFT SPRUCE SKYCOM PACKAGE #1

• 2 Skycom H-40A Headsets • 1 Skycom 400 Intercom (portable) • Headset Bag • Push-To-Talk Switch..... P/N 11-11885.....

AIRCRAFT SPRUCE SKYPRO PACKAGE #2

• 2 Sky Pro Headsets • 1 Skycom 400 Intercom (portable) • Headset Bag • Push-To-Talk Switch P/N 11-11890.....

SEE PREVIOUS PAGE FOR LIGHTSPEED ACCESSORIES.

SIGTRONICS S-AR HEADSET



The S-AR headset protects your hearing switched on or off. With S-AR switched on you hear a major reduction in low frequency noise. Radio transmissions that are weak and garbled on passive headsets will sound strong and clear with an S-AR headset. Features up to 19 db of active

noise reduction, air foam head pad cushion that virtually eliminates "Hot Spots", ultra-deep gel ear seals for comfort and ease of use and custom flex boom for perfect mic placement. Sigtronics exclusive "Stop-Break" high flex cord and RFI and EMI free electronics make the S-AR ideal for pilots who want a high performance mono/stereo headset. A battery power module (9V) with belt clip and custom headset bag are included with all S-AR headsets. P/N 11-00859.....

SIGTRONICS S-8 HEADSET



Eliminate scratching the top of your canopy by using the Sigtronics S-8 headset. features a behind the head headband with quick adjust velcro strap that fits the shape of your head, a flex boom and gel ear seals. The S-8 has a passive noise reduction rating of 24 dB. 5 Year warranty. P/N 11-00645.....

SIGTRONICS HIGH PERFORMANCE HEADSETS



All Sigtronics headsets and intercoms are specifically designed for high-noise environments and are RFI and EMI immune, giving you clear, interference-free transmission even in fabric or composite aircraft or in use with handheld radios.

SERIES 8 HEADSETS

"8 Series" superlight headsets are full-size quality headsets available at just 11.9 oz., delivering comfort, and performance. A new lightweight, custom flex boom stays where you put it, even in

the roughest conditions.

S-58 features new, durable, non-glare "powder-coated" black hardware and Sigtronics "sky-blue" earcups. The new ergonomic headpad and custom fit gel seals deliver comfort and eliminate "hot-spots". A new microphone configuration cancels unwanted noise before it can get into the system. Sigtronics' 5-year warranty, custom padded bag, easy-grab volume controls, ultra foam windscreen & exclusive clothing clip are included. Wt. 11.9 oz. Flex boom.

Mono..... P/N 11-19105.....
Stereo..... P/N 11-02803.....
Helicopter..... P/N 11-02813.....

S-68 headsets include all of the S-58 features plus high-performance black earcups and 14K Gold Plated hardware. P/N 11-19125.....

Stereo..... P/N 11-02805.....
Helicopter..... P/N 11-02815.....



SIGTRONICS S-40 is a high performance headset featuring an electret microphone, and fully articulating mike boom with full swivel action. The S-40 offers dual volume controls and soft, pliable polyurethane ear cushions for optimum comfort. The S-40 weighs 16 oz. It is made in the U.S.A. and carries a 3-year factory warranty. Earcups are royal blue. The S-40-S only has dual volume controls (stereo)

P/N 11-02795.....
Stereo..... P/N 11-02809.....
Helicopter..... P/N 11-02213.....



S-45 series headsets are the same as the S-40 headset, except they have airflow headpads and gel earseals for maximum comfort... P/N 11-02797.....

Helicopter..... P/N 11-02810.....
Stereo..... P/N 11-02811.....



S-20 incorporates the M-80 microphone, designed specifically for use in high noise environments with its excellent noise canceling properties. The microphone gain is set to operate over a wider range of aircraft radios, even handheld - the ultimate test.

S-20 Headset..... P/N 11-02799.....

SIGTRONICS HEADSET ACCESSORIES



P/N 11-04368

Electret Mic Muff..... P/N 900084.....
Foam Ear Seals..... P/N 100369.....
Shirt Clip..... P/N 11-04368.....

SIGTRONICS HEADSET/INTERCOM COMBOS

SIGTRONICS 2-PLACE COMBOS - Includes 2 Sigtronics S-40 headsets, 1 SPO-22 (2)place intercom, push-to-talk switch, & comfort covers for headsets.

Combo #1 w/S-40 Headsets..... P/N 11-16929.....
Combo #1A w/S-58 Headsets..... P/N 11-00037.....

SIGTRONICS 4-PLACE COMBOS - Includes two Sigtronics S-40 headsets, SPO-42 (4)place intercom, push-to-talk switch, & comfort covers for headsets.

Combo #2 w/S-40 Headsets..... P/N 11-16930.....
Combo #2A w/S-58 Headsets..... P/N 11-00038.....

SIGTRONICS PANEL MOUNT COMBOS - Same as Combo #2 except substitute SPA-400 panel mount intercom for SPO-42 portable intercom.

Combo #3 w/S-40 Headsets..... P/N 11-16931.....
Combo #3A w/S-58 Headsets..... P/N 11-00039.....

SIGTRONICS SPO-22N PORTABLE INTERCOM COMBO - Combo #4 includes 2 S-20 headsets, SPO-22N Battery powered portable intercom and headset intercom bag..... P/N 11-04655.....

Combo #4A includes 2 S-58 Headsets, SPO-22N Battery powered intercom, and headset/intercom bag... P/N 11-04656.....

SIGTRONICS SPORT 200 PANEL MOUNT INTERCOM COMBOS

Combo #5 includes 2 S-20 Headsets, Sport 200 Panel Mount Intercoms and Headset/Intercom bag. P/N 11-04653.....

Combo #5A includes 2 S-58 Headsets, Sport 200 Panel Mount Intercom, and headset/intercom bag... P/N 11-04654.....

CALL FOR SPECIAL PRICES!

AV

DAVID CLARK HEADSETS

DAVID CLARK X11 HEADSET



The new X11 ENC headset features Advanced Comfort Engineering for an incredibly comfortable, personalized fit which you'll appreciate during long flights. It features new, Electronic Noise-Canceling (ENC) technology that reduces pilot fatigue. Leading edge, lightweight materials such as genuine carbon fiber provide added durability. And of course, the

X11 is backed by David Clark Company customer service and support which is second to none. All of which makes this new headset as comfortable to own as it is to wear. P/N 11-04651.....
Gel ear seals X11 DC P/N 11-05803.....

DAVID CLARK X11P HEADSET



The model X11P features the same outstanding comfort and high performance features of the model X11 headset, but is designed to plug directly into the panel of the aircraft. Installation flexibility is provided by three available adapter cords and connectors which allow (1) wiring directly to aircraft avionics, (2) plug-in portability with other than primary aircraft or (3) connection to aircraft already equipped with David Clark ENC 'XP' Series panel mount modules. P/N 13-04790.....

ACCESSORIES FOR X11P HEADSET

40998G-05 ADAPTER CORD - Designed for wiring into existing avionics built-in intercoms, radios, etc. PN 11-05542.....
40998G-02 ADAPTER CORD - Optional adapter cord with standard aviation plugs allowing use of the X11P when flying in other than primary aircraft. PN 11-05547.....
40998G-03 ADAPTER CORD - Optional adapter cord allowing use of the X11P in aircraft already equipped with David Clark ENC "XP" Series panel mount module. PN 11-05548.....

DAVID CLARK H10-13.4 HEADSET



Provides David Clark quality without the hot spots, clamping, or weight discomfort. Features a certified noise reduction rating of 23 dB and weighs only 13.4 oz. Drastically reduced headband force, new soft air-flow pillow headpad, flo-fit gel ear seals, M-7A noise cancelling electret mic, and low profile volume controls with detect settings. 5 yr warranty. P/N H10-13.4.....
P/N H10-13.4S (stereo)
P/N H10-13H (Helicopter).....

DAVID CLARK H10-13Y YOUTH HEADSET



Same features as the popular H10-13.4 Headset and has been especially designed to comfortably fit a child. Extremely lightweight and has a new headband assembly which allows you to adjust the headset to your child's head for a perfect fit every time. The new Super Soft Foam-filled Headpad and Flo-Fit Gel Ear Seals, also add to the headset's long-term wearing comfort. When your child grows, a conversion kit is available, to convert your H10-13Y to a David Clark Model H10-13.4.....P/N H10-13Y.....
Conversion kit.....P/N 11-11950.....

DAVID CLARK H20-10 HEADSET



H20-10 headset features the Custom Comfort System which is a whole new concept in headset in comfort. Includes a headband suspension assembly that can be adjusted to a perfect comfort level, a pillow soft "floating" headpad for maximum cushioning with no hot spots, and a larger contoured Flo-Fit gel ear seals which mold softly to your head. P/N H20-10.....
P/N H20-16 (for helicopters).....

DAVID CLARK H10-56HXL HELICOPTER HEADSETS



New Comfort gel, undercut ear seals. Battery Power Module - One 9 volt battery for up to 25 hours of operation. Pilot Selectable Automatic-Shut Off Feature. Five foot (extended) coil cord terminating with a 10 pin quick release connector. Coiled cord assembly connects Battery Power Module to panel intercom/radio. Same headset can be used with optional panel mount. (H10-56HXP) Dual volume controls let you adjust the level for each ear. Exclusive, patented flex/wire boom for easy, precise microphone placement. Super soft foam filled pillow headpad. NRR - 27 dB passive noise reduction rating plus 17 dB when ENC is turned on. Weight (without cord assembly): 22 oz.

| Description | Part No. | Price |
|---|----------|-------|
| MODEL H10-56HXL | 11-03828 | . |
| MODEL H10-56HXP | 11-03829 | . |
| MODEL H10-56 - Hinged wire boom with the M-101 amplified Dynamic microphone. Conforms to MIL-M-27291A. Coil Cord (5' extended) with U-174/U Plug. FAA TSO Approved C57 Cat. B and C58a. Exceeds RTCA/DO-214 Standards. Weight (without cord assembly): 20 oz. | 11-03827 | . |



DAVID CLARK SERIES K HELMET

Series K Helmet provides the ability to convert all David Clark Over-The-Head style (Except H20-10 & H10-80) headsets into a Helmet/ Headset assembly. The Kit and a David Clark headset gives both impact and hearing protection in addition to clear, normal conversation in high noise environments. The Series K Helmet Kit consists of a helmet shell with nape pad and a helmet liner. Lightweight, the combined weight of the Helmet/Headset assembly is 42 oz.
Helmet Kit P/N K10.....

DAVID CLARK HEADSET BAG



This ballistic Nylon Carry Bag is black on black, with the DC logo subtly embroidered in the lower right corner. This bag has been carefully chosen for its simplicity, quality and workmanship and is a fitting complement to any David Clark Headset. P/N 11-00642.....

DC H20-10X HEADSETS



Made of lightweight advanced composite materials. Features include: Portable battery power module accepts connector from headset and connector on communication cord to aircraft. Powered by 6 AA batteries, has power on LED, and guarded on/off switch. Dual volume controls let you adjust the level for each ear. Custom comfort headpad suspension system adjusts to your head like a pillow. Gel filled earseals are contoured to your ears. Universal flex boom. NRR-22Db passive noise reduction rating plus 12Db to 17Db when ENC is turned on. **CALL FOR SPECIAL PRICES !**

| Part No. | Description | Price |
|-----------|--|-------|
| H20-10XL | Fixed wing headset (ENC) with straight, 5ft. cord Snap Lock-Quick release connector/battery power module with mating headset and cord assy connectors/coil cord assembly with mating battery connector and panel-intercom plugs | . |
| H20-10XP | Fixed wing Headset (ENC) w/straight, 5ft. cord, Snap Lock-Quick Release Connector and panel mount module with mating headset connector, on/off toggle switch. Connectors/Coil Cord Assembly with mating battery connector and Panel-Intercom Plugs | . |
| H20-10HXP | Helicopter Headset (ENC) with coiled, 5ft. (extended) cord, Snap Lock-Quick Release Connector and panel mount module with mating headset connector, on/off toggle switch | . |

DAVID CLARK H10-13X ANR HEADSETS



The H10-13X aviation headset has the most advanced Electronic Noise Canceling (ENC) technology assuring an amazingly quiet flight. Available in the most popular and comfortable headset style. H10-13X Features: Quiet Performance —You'll hear and feel the difference immediately. When ENC is turned ON, noise cancellation actually improves by an additional 12-17 dB. That's better total protection than any other headset available today. 5 year warranty.

Outstanding Comfort - Lightweight at just 17oz. w/advanced comfort features. Super soft gel ear seals with new exclusive Velvet Fleece surface, combined with reduced headband pressure and a soft foam-filled pillow headpad create a comfort level never before experienced. Superior Communication Intelligibility - The ENC system and the exclusive M-7A noise cancellation electret mic provide unsurpassed performance and clear, crisp transmission and reception. Stereo compatible for use with stereo intercom and cabin entertainment systems.

| Model | Description | Part No. | Price |
|-----------|--|----------|-------|
| H10-13X | Fixed wing headset (ENC) with straight, 5ft. cord to Battery Power Module to straight 5ft. cord with A/C Panel-Intercom Plugs (hard-wired) | 11-03819 | . |
| H10-13XL | Fixed wing Headset (ENC) with straight, 5ft. cord, Snap Lock-Quick Release Connector/Battery Power Module with mating Headset and Cord Assy Connectors/Coil Cord Assembly with mating battery connector and Panel-Intercom Plugs | 11-03820 | . |
| H10-13XP | Fixed wing Headset (ENC) with straight, 5ft. cord, Snap lock-Quick Release Connector and Panel Mount Module with mating Headset Connector, on/off Toggle Switch | 11-03821 | . |
| H10-13HXL | Helicopter Headset (ENC) with coiled, 5ft. (extended) cord, Snap Lock-Quick Release Connector/Battery Power Module with mating Headset and Cord Assy Connectors/Coil Cord Assembly with mating battery connector and Panel-Intercom Plug | 11-03817 | . |
| H10-13HXP | Helicopter Headset (ENC) with coiled, 5ft. (extended) cord, Snap Lock-Quick Release Connector and Panel Mount Module with mating Headset Connector, on/off Toggle Switch. | 11-03818 | . |

AV

DAVID CLARK HEADSETS - CELL PHONE ADAPTERS

DAVID CLARK HEADSET H10-66LX & H10-76XL

PN 11-05427



PN 11-05428



PN 11-05429

Pilots have trusted the green domes of David Clark Company headsets for over 25 years. Their high-performance products are now equipped with several new features to enhance pilot

comfort: super-soft, double-foam headpads, comfort-gel, 'undercut' ear seals, and a smaller, lighter battery pack with auto shutoff for ENC models. Find out for yourself why quality conscious pilots will accept nothing less than the #1 Headset in Aviation.

| Description | Part No. | Price |
|--|----------|-------|
| H10-66XL DUAL IMPEDANCE ENC HEADSET Designed for use with both high and low impedance systems. Select switch on dome matches headset to system impedance. Ideal for fleet operations. Certified Noise Reduction Rating (NRR): 27: dB. Built in ENC technology and enhanced comfort features. | 11-05427 | . |
| H10-76XL PORTABLE LOW IMPEDANCE ENC HEADSET Feature ENC technology and designed for use with low impedance systems. Coil cord with single plug connects the battery-powered module to aircraft radio or intercom. Additional 17-22 dB noise attenuation with ENC activated. | 11-05428 | . |
| H10-76XP PANEL-MOUNT LOW IMPEDANCE ENC HEADSET Same as H10-76XL but with permanent panel-mount module for utilizing the aircraft's power source. | 11-05429 | . |

H10-20 HEADSET



8 new headset design advances make the David Clark H10-20 a must see. The completely flexible boom assembly can be adjusted for perfect microphone placement. The M7A microphone is the most advance noise-cancelling amplified electret mike available. Features a redesigned air-flow headband with liquid-filled ear seals for optimum comfort. Comes with volume control and a 5yr warranty. Made in the U.S.

Straight Cord.....P/N H10-20.....
Coiled Cord.....P/N H10-21.....
Helicopter.....P/N H10-26.....

DAVID CLARK H10-30 HEADSET

This dual headset, used by the Air Force, features foam filled ear cushions with an M-1/DC amplified dynamic noise cancelling mike. With 6 feet straight cord, PJ-055B headphone plug and PJ-068 mike. plug. P/N H10-30



DAVID CLARK H10-36 HEADSET

The H10-36 headset features the M-1/DC dynamic mic and coil cord which extends to 5 ft., with U-174/U plug for helicopter installations. P/N H10-36

DAVID CLARK H10-60 HEADSET



Features unique foam/air-flow headpad, low-pressure headband, Flo Fit Gel ear seals, and dual volume controls. Also features the M-7A advanced noise cancelling amplified electret mic. Customize your H10-60 with 3-position headset pressure adjustment, boom guide lock, headband size adjustment, and cord selection. P/N H10-60.....

DAVID CLARK H10-66 HEADSET



The H10-66 headset features the M-101 amplified dynamic microphone and High/Low impedance. Comes with coil cord (extends to 5 ft.) & U-174/U plug for helicopters. P/N H10-66

DAVID CLARK H10-76 HEADSET



Undercut Comfort-Gel Ear Seal for Improved Comfort. Low Impedance. Most popular noise attenuating headset ever produced for use with military radios. Standard headset of the U.S. Air Force, NATO and most airborne command centers. Coiled cord terminates into a U-174/U plug. P/N 11-02226

DAVID CLARK H10-00 "LISTEN ONLY" HEADPHONE



David Clark comfort fit. For use w/handheld mic. With 18" coil cord which extends to 6 ft. & PJ-055B plug. P/N H10-00

9V BATTERY PACK FOR ENR HEADSETS



This new XL-9V 9V battery pack is easier to operate, wear and store. It is 50% smaller and 50% lighter than previous battery packs. It runs off a single 9V alkaline battery to provide power to the headset ENC system. The XL-9V features an Auto Shut Off function to save the battery if the power switch is left on when the headset is not in use. P/N 11-01783



DAVID CLARK UNDERCUT COMFORT-GEL EAR SEALS

Ear Seals have redesigned to be softer, more supple and form fitting, with a unique "undercut" shape that provides more room for your ears. This exclusive design makes for a larger, yet lighter ear seal. This new ear seal is now standard on the entire line of DC aviation headsets. New Ear Seal Features: • 26% lighter • 60% more surface area in contact with your head provides greater comfort by dissipation of necessary headband pressure • 30% more interior volume creates more room for your ear P/N 11-01782.....

DAVID CLARK GROUND SUPPORT HEADSETS

Ground Support Headsets are designed to facilitate communication when background noise or distance makes it extremely difficult to communicate. During ground-support operations, communication is critical to ensure the safety of everyone in the vicinity as well as the protection of the aircraft from accidental damage.



MODEL H7010 - Noise Attenuating Headset * M-101 Noise-Cancelling Microphone * 30-inch straight cord with U174/U plug * Noise-shielded microphone (muff) with On/Off switch * Soft headpad and ear seals guarantee exceptional comfort * Snap-fastened nylon straps secure microphone muff to mouth * Corrosion-resistant, chrome plated headpad/stirrup assembly * Extremely durable and reliable * NRR 26dB P/N 11-07116



MODEL H-133C/AIC - Noise Attenuating Headset * M-101/AIC Noise-Cancelling Microphone * 30-inch straight cord with U93A/U plug * Noise-shielded microphone (muff) * Soft headpad and ear seals guarantee exceptional comfort * Snap-fastened nylon straps secure microphone muff to mouth * Corrosion-resistant, chrome plated headpad/stirrup assembly * Heavy duty and extremely reliable * For noise levels to 140dB P/N 11-07117

EARS 2 CELL PHONE ADAPTER FOR HEADSETS



Great for Filing Closing Flight Plans, contacting ATC/FSS or Home/Office. Size of the product 2 1/4" x 2 1/4" 1 1/4" thick. Clip is removable for better fit and function.

Will Not Interfere with any RADIO CALLS , AUTO MUTE the Cell call when radio is active, same as for the MP3 player. Uses a 9 volt battery for amplified operation, which has a battery life of 18 mo stand-by 25 hrs talk time. If your intercom or radio system fails you can still talk through your headset or even hook a handheld radio through your headset. One year limited warranty on defective parts. P/N 11-04772



CELL PHONE HEADSET ADAPTERS

Our cell phone headset adapters connect your cell phone to the headset and intercom system in your aircraft. The pilot can use the cell phone while ATC communications remain the priority at all times. These adapters enable you to close flight plans or get IFR clearances from the aircraft, contact FBOs or other services from the aircraft, or call anyone you wish. Will not work with Nokia 8000 series phones.

Universal adapter.....P/N 11-02230

Bose adapter.....P/N 11-02231

Helicopter adapter.....P/N 11-02232

ANR HEADSET RETROFIT KIT



The ANR Adapter is a product that will transform a current aviation headset into a high-tech active noise reduction (ANR) unit. The ANR Adapter comes as a kit and includes a pair of inserts that fit more than 20 different headset models. Installation requires fitting the inserts, drilling a small hole in one earcup for the power receptacle, and soldering the original cable leads to the kit replacement parts. (uses (2) 9V batteries)

David Clark type.....P/N 11-11955.....

Peltor.....P/N 11-11956.....



AMP CABLE (AUDIO+MIC+POWER)

A standard ANR upgrade kit comes with a 6' long add-on power cable which tie-wraps to your original audio cable, and it requires that you drill a 1/4" hole in the left earcup (next to where the main cable enters the cup). The AMP cable replaces your original cable and has the DC power wires, audio wires and mic wires all in 1 cable. The result is more esthetically pleasing and no additional hole is required in the left earcup. P/N 11-03012

AV

SENNHEISER HEADSETS

Sennheiser developed a full line of innovative headsets in response to the aviation industry's concern about clear communications and prevention of hearing loss and fatigue. Several of these headsets feature active noise cancellation (ANC). Superior clarity and steadfast reliability make Sennheiser's aviation headsets standard equipment for discerning pilots and passengers everywhere. Over 150 international airlines as well as major manufacturers and pilots of corporate and general aviation aircraft know they can count on Sennheiser. Most headsets comply with FAA/TSO -C57A, C58A. All headsets have a 5yr warranty unless noted.

HME43-K PILOTS HEADSET



The HME 43-K is a pilot's headset with closed headphones and Ultra Noise Cancelling Microphone for use in Business Jets. Features: •Very lightweight •Ultra Noise Cancelling Microphone for superior speech transmission •Microphone can be worn on either left or right-hand side •Headset with comfort leatherette and replaceable ear pads •Double-sided adjustable headband with comfort headpads •Superior speech intelligibility •Lightweight Headset •Headband cable completely internal •ActiveGard safeguards the user from the effects of an acoustic burst •2 year warranty

P/N 11-04841

HME25KA-2 PASSIVE HEADSET



Designed for comfort & clarity in the loud aviation environment, the HME25KA-2 pairs a lightweight, split headband headphone with a noise-compensating, electret mic. The ultra lightweight, closed-back, supra-aural design provides 16dB of passive attenuation. An excellent choice for the cockpit or for air traffic controllers.

Wt: 4.9oz; 6 ft. cord. Now TSO'd. P/N 11-09790

HME46PASSIVE / HMEC46 ANC



These boomsets successfully combine proven functionality with the latest audio technology and maximum user comfort. The HME 46 incorporates peak level protection. It delivers reliable protection from excessive volume peaks of more than 110 dB during radio communication. The new boomsets are available with all common plug configurations. Features: •Extremely light weight •Superb wearing comfort due to patented two-piece automatic headband and soft ear pads •Flip-away headphone allows single-sided listening •Flexible microphone boom, can be worn on either left or right-hand side •Noise-compensated condenser microphone ensures excellent speech transmission •Single-sided cable, length 1.85 m, easy to exchange •With volume control •Volume peaks above 110 dB are eliminated •ETSO/TSO approval C57a and C58a.

Sennheiser HME46-V-K Headset.....P/N 11-05271

Sennheiser HME46-K Headset -P/N 11-05247

Sennheiser HMEC46-B-K Headset - active, electret mic, jack connectors, battery powered.....P/N 11-05272\$664.00

Sennheiser HMEC46-BV-K Headset - active, electric mic, volume control, jack connectors, battery and panel powered

P/N 11-05274\$750.00

HMEC25KA ANC HEADSET



For those who work or play in a loud cockpit and would like a low-profile, lightweight headset with outstanding noise reduction, the HMEC 25-KA is the answer. Active noise cancellation reduces noise by over 15dB to provide over 30dB of total noise attenuation. The HMEC 25-KA is a supra-aural, closed back headset that weighs less than 6 oz. and has a split headband design for unsurpassed comfort and fit. Wt: 6 oz., electret mic, ANC power, 2 AA batteries, 6 ft. cord. • FAA and JAR TSO approval C572 and C58a .

HMEC 25-KA P/N 11-09795.....

HMEC25-KAS HEADSET



A supra-aural closed back headset that weighs less than six ounces and has a split headband design for unsurpassed comfort and fit. Active noise cancellation (ANC) reduces noise by over 15 dB to provide over 30 dB of total noise attenuation. The microphone boom can be turned through 350° and can thus be worn on either side of the head. The micro-phone module with noise-compensated electret capsule and integrated pre-amplifier is easily replaceable in the unlikely event of damage. • Lightweight, closed back supra-aural headset • 15 dB Active noise cancellation • 11 dB Passive Attenuation NRR • Noise cancelling electret microphone with rotating boom • Stereo/Mono switch • Dual Volume Control. • operates on 2 AA batteries.

P/N 11-09735

SENNHEISER ACCESSORIES

| Description | Part No. | Price |
|--------------------------------|--------------|-------|
| Battery Pack- HMEC350/HMEC450 | P/N 11-02886 | . |
| XLR to Cigarette Lighter | P/N 11-00127 | . |
| Dual XLR to Cigarette Lighter | P/N 11-00128 | . |
| Gel Ear Seals HMEC350 / HME110 | P/N 11-01333 | . |

HME110 PASSIVE HEADSET



Passive headset features an excellent passive attenuation and a wide frequency response, this closed-back headset will make communications clear. Volume control for the headphones; sensitivity control for the microphone; flexible, noise-compensated boom mic for right or left side use; and a cushioned, foldable headband. A high quality bag is supplied with the unit.

Features:•Constant attenuation of up to 40 dB •Advanced transducer design ensures excellent speech intelligibility •Mono/Stereo Switch •Adjustable Gain Mic •10-year warranty

P/N 11-03589

Special models for helicopters - with coiled cable & U-174/U connector for headphones & mic (no mono/stereo switch)

HME 120 Helicopter ModelP/N 11-00216

HMEC250 ANC HEADSET



Very attractive, foldable design. Offers the customer an interesting price/performance ratio and a powerful design that is extremely lightweight and comfortable. Talk Through - Allows you to communicate with the people around you while wearing the headset. Peak Level Protection - Safeguards your ears from volume peaks above 110 dB. Features: NoiseGuard™ 2.0 with fail-safe operation * separate left and right volume control * audio input for mobile phones and MP3 players * Foldable,space saving design * Very lightweight (10.1oz) * Long wearing comfort due to conforming soft ear seals * Flexible boom * Noise-compensating condenser microphone * 3-year warranty

P/N 11-07030.....

Conformal Ear Seals P/N 11-07032.....

HMEC460 ANC HEADSET



Closed ear protector headphones and NoiseGuard™ active noise compensation for use in propeller and turbo prop aircraft. Silver brushed surface. Features 7.0 N contact pressure, 30% less than its predecessor. Even includes sockets for multimedia applications: A 3.5 mm Audio-In-socket for those who want to connect their MP3-

player directly to the headset, and a 2.5 mm Cell-Phone-In-socket for the mobile phone. Delivery includes: 1 HMEC 460, 1 carrying case for headset and accessories, 1 cable clip MZQ 2002-1, 1 windshield MZW 45, 1 audio cable with 2 x 2.5 mm stereo jacks, 1 audio cable with 2 x 3.5 mm stereo jacks, 1 audio cable with 2 x 3.5 mm stereo jacks. *10 YEAR WARRANTY*

P/N 11-04688.....

HMEC350 ANC HEADSET



Experience excellent noise attenuation over the entire frequency range. The HMEC 350 NoiseGuard™ ensures superior speech intelligibility and voice transmission - even in the loudest of surroundings. This lightweight headset is fitted with a volume control for the headphones, flexible boom microphone, collapsible cushioned headband, mono/stereo switch and the on/off switch for NoiseGuard™ circuitry, with ease of use and optimum comfort in mind. **Features:** • NoiseGuard™ ANR system • Electret microphone • Fully flexible microphone boom • Padded headband • Soft cushion ear seals • Panel-mount, portable battery box or cigar-lighter power supply options • Weighs just 13.1 oz.

HMEC35011-04401

HMEC372 For Helicopter.....11-04414

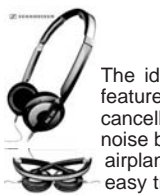
PXC450 ANC HEADPHONE



Outstanding sound quality and undisturbed music enjoyment even in noisy environments. The PXC 450 is a premium travel headphone featuring Sennheiser's exclusive NoiseGuard 2.0 active noise compensation system, which effectively reduces up to 90% of ambient noise. The extremely comfortable headphones offer audiophile grade sound combined with a foldable construction for maximum enjoyment and convenient storage. The innovative new TalkThrough function allows the user to communicate with neighbors without taking off the headphones. Unwanted background noise, such as the roar of the airplane engines, is filtered out so that only the neighbor's voice is passed on through the headphones at top quality. Comes complete with a transport case, 2 AAA batteries and audio adapters. 2 year warranty

P/N 11-07271

PXC250 MINI FOLD-UP HEADPHONES WITH ANC



The ideal travel companion: PXC 250 fold-up headphones feature Sennheiser's proprietary NoiseGuard™ active noise cancellation. NoiseGuard™ will effectively reduce background noise by more than 65%! The PXC 250 comes complete with airplane audio adapter and a convenient protective bag for easy transport. PXC300 reduces noise up to 80!

PXC 250 P/N 11-01915

PXC 300 P/N 11-04615

DRE COMMUNICATIONS HEADSETS

DRE HEADSETS

DRE quality aviation headset. For the past 11 years DRE has been manufacturing high quality aviation headset and intercoms. The new DRE headsets are better than ever!

DRE-1000



- 24 dB NRR hearing protection
- BNC clear hear mic
- Dual volume control
- Wide comfort foam ear seals
- Cotton cloth ear covers
- Weight 14.5 oz.
- Available in black or white
- 3 year factory warranty

Additional features include high fidelity headphone drivers for music, thumb nut headband adjusters, stay-put locking wire boom, high-flex reliable wiring, gold-plated plugs, rugged ABS ear cups, and black-plate spring steel headband combined with the best audio components makes the DRE1000 the affordable aviation industry leader.

DRE-1000 white PNR headset(pictured)..... P/N 11-00709
 DRE-1000 black PNR headset..... P/N 11-06494.....

DRE-4000



- 24 dB NRR hearing protection
- Stay put half flex boom
- BNC clear hear mic
- Dual volume control stereo
- Deluxe gel ear seals
- Cotton cloth ear covers
- Wind block mic muff
- Weight 15 oz.
- 3 year factory warranty

Custom fit half-flex boom stays where you put it and is completely adjustable for an exact position even on those long flights. Quick disconnect main cable for easy storage and hassle free replacement if broken.

Additional features include high fidelity headphone drivers for music, high-flex reliable wiring, gold-plated plugs, and rugged ABS ear cups.

DRE-4000 Stereo Headset..... P/N 11-00711

C.A.T. SYSTEM PILOT EAR MICROPHONE



Does not interfere with eye or sun glasses and weighs only 1oz., eliminating the 'Over the Head' or 'Behind the Head Pressure Producing Head Band'. The "Heavy Boom Microphone" has been eliminated since all of the transmitted and received audio is derived from and delivered to the wearer's ears. The Ear Pieces produce a Noise Reduction Rating (NRR) of 33dB with universal foam ear molds and up to 46dB with custom ear molds. They are connected to the Interface Controller with a lightweight, heavy-duty cable and locking connector. The Controller interfaces directly to most General Aviation Avionics Packages, which include Navigation, communications, Radios and Intercoms. Complete with an individual volume control for the wearer's comfort. Utilizes a Double Shielded Coil cord with gold plated avionics connectors to eliminate any possible interference when using it in close proximity to a handheld transceiver. Weighs only 9 ounces and is covered by a Limited Lifetime Replacement Warranty. The Ear Pieces and coil cord are covered by a 1-yr Warranty. TSO pending.

2001-ACFT Pilot Pro - Includes the Controller and Foam Ear molds.
 P/N 11-00369.....

2001-APT - Remote Velcro Push-to-Talk Button for yoke mounting. The button is mounted with Velcro and has a coil cord with a 1/4" Plug and a .206 Jack for interfacing into the aircraft's avionics system.
 P/N 11-00370.....

2001-APHT Push-to-Talk button - Same as above but with 3mm Plug for Hand-Held Portable Transceiver (pictured).
 P/N 11-00371.....

DRE 6000 ANR HEADSET



- Powerful ANR performance
- Stay-put half-flex boom
- BNC clear hear electret mic
- Dual volume control stereo
- Pillow top headpad
- Deluxe gel ear seals
- Wind block mic muff
- Auto shut-off battery pack
- Auxiliary power input jack
- 20-hour battery life
- Weight: 16.5 oz.
- 3 year warranty

The most powerful ANR (active noise reduction) aviation headset available! Not just an add-on kit, but also a headset designed for true ANR performance. The DRE6000 has ear cups with internal baffle-plate providing the strongest ANR in the industry. With 18-20dB of noise reduction @ 200Hz with an effective range from 20 to 600Hz, the DRE6000 ANR is guaranteed to exceed the performance of any production ANR headset. When the noise is just too much, simply flip the switch and enjoy the flight. Custom fit half-flex boom stays where you put it and is completely adjustable for an exact position even on those long flights. Quick disconnect main cable for easy storage and hassle free replacement if broken. Additional features include extraordinary audio fidelity, battery life LED indicator, gold-plated plugs, and high-flex reliable wiring.

P/N 11-00543.....

DRE ACCESSORIES



GEL SEALS - Add all-day comfort with a pair of Deluxe silicone gel ear seals with the industry's first double bump design to keep the gel in place. Other gel seals tend to squash out over time. Deluxe gel seal will block out noise for increased noise reduction. Fits DRE and other top brand general aviation headsets.
 P/N 11-06496.....



PILLOW TOP HEADPAD - Enjoy your flight with Pillow Top headpad. 100% sheepskin eliminates the pressure on the top of the head. Made to fit all general aviation, over-the-head headsets with 5/8" headbands..... P/N 11-06495.....



FOAM EAR SEALS - Fits DRE and other top brand general aviation headsets..... P/N 11-07366.....



CLOTH EAR COVERS - Great for comfort and hygiene! The cool cotton comfort improves the tactile quality of any ear seal. Easy to install, absorbs perspiration, and completely washable. These covers fit all general aviation headsets.
 P/N 11-07367.....



MIC MUFF - This mic muff attaches easily, includes the o-ring retainer, improves transmission while eliminating wind noise, and protects the mic from moisture and dust. It is completely washable and fits all general aviation headset microphones.
 P/N 11-06497.....



MAIN HEADSET CABLE FOR DRE4000, D400 - Quick disconnect main cable for easy storage and hassle-free replacement, plus high-flex reliable wiring.
 P/N 11-06498.....



MAIN HEADSET CABLE FOR DRE6000, D401 - Quick disconnect main cable for easy storage and hassle-free replacement, plus high-flex reliable wiring. P/N 11-06499.....



ELECTRET MICROPHONE FOR DRE1000/4000/6000, D502-BNC clear hear electret microphone.
 P/N 11-06501.....



AUTO SHUT-OFF BATTERY BOX FOR DRE 6000, D700 - Will extend the battery life by automatically turning off after 4 minutes of inactivity. The flashing LED acts as a reminder.
 P/N 11-07179.....



POWER SUPPLY FOR PANEL MOUNT DRE 6000, D800 - For 12V or 24V aircraft. You can save on batteries by powering the ANR system from aircraft power. Has 2 voltage regulators, a DC-DC converter for isolation, and an in-line 1/4 amp fuse. Specify 12 or 24 volt aircraft when ordering.
 P/N 11-07180.....



DUFFEL STYLE FLIGHT BAG D3002- Six compartments, dual zippered flap on the center compartment with a Velcro® strip. On each end has a zippered pocket, and two smaller access compartments
 P/N 11-07373.....



PERSONAL HEADSET BAG, D3P01 -
 P/N 11-07784.....



BEYERDYNAMIC HEADSETS - FLITELITE



BEYERDYNAMIC HS300 AVIATION HEADSET

The perfect combination of quietness, comfort and design. As a headset with "closed back" construction, the HS 300 Individual offers perfect noise protection for long and safe flying. An audio box comes with the headset and it is possible to route the signal from a mobile phone or MP-3 player through this

box. When a radio signal is received the volume of the music or phone call automatically decreases. Only high-quality materials, designed for a long service life and maximum user comfort, are used for this hand-crafted premium headset.

Features:

- Noise attenuation of approximately 30 dB
- Audio box included with an interface for mobile phone / music player (two cables included)
- Automatic muting of external signals when radio signals come in (muting can be switched off)
- Noise-compensating microphone with adjustable sensitivity (can be Worn left or right)
- Mono/stereo selection switch
- Balanced sound and high reproduction precision for excellent intelligibility of speech
- Integrated volume control
- Made in Germany with a five-year warranty
- Rugged construction using spring steel hoop and soft, replaceable head bolster
- Low weight (approx. 325 g without cables)
- Service-friendly - all parts are easy to replace
- Headset case included

P/N 11-05245

ACCESSORIES

Beyerdynamic HS300/200 Ear Seals.....P/N 11-05828



BEYERDYNAMIC HS600 DANR AVIATION HEADSET

HS 600 DANR is the only Aviation headset worldwide that provides a processor-controlled active noise attenuation with an intelligent algorithm producing the counter sound. This advantage of the DANR concept makes this new headset a benchmarking product.

- Excellent silent noise attenuation of approx. 40 dB due to Digital Adaptive Noise Reduction

- Software version 2.0 with Noise Peak Reduction and broadband reduction
- Audio box with integrated volume control provides connection for mobile phones or music players (supplied with two connection cables)
- Automatic reduction of telephone and music volume (mute) when Intercom signals are received (function can be switched off)
- Powered by two AA batteries inserted in the audio box with a minimum operating time of 25 hours or by the on-board power supply system (12 - 36 V DC) when using the supplied 3-pin XLR cable (delivery includes appropriate jack)
- Automatic switch-off function
- Superior comfort for wearing due to light weight (approx. 325 g without cable) and low headband pressure (approx. 6.5 N)
- Premium ear pads filled with viscoelastic foam
- Noise-compensated microphone with adjustable gain, which can be worn on the left or right hand side
- Made in Germany with a five-year warranty
- Balanced sound and high reproduction precision for excellent intelligibility of speech
- Mono/stereo selection switch
- Rugged headband construction made of spring steel and replaceable headband pad made of soft leather
- Easy servicing as all parts are replaceable
- Supplied with headset bag

P/N 11-05246



BEYERDYNAMIC HS200 TREND AVIATION HEADSET

In conjunction with beyerdynamic's quality requirement and 80 years of experience in electroacoustics, the HS 200 Trend ensures comfort and safety when flying. As the HS 300 Individual headset, the HS 200 Trend is also supplied with a five-year warranty. The headset comes with a practical bag and a volume control. Now pilots who do not want to listen to music or phoning with their headset while flying, can enjoy the features of beyerdynamic's Aviation headsets. **Features:** * Ambient noise attenuation of approx. 30 dBA * Noise-cancelling microphone with adjustable gain, which can be worn on the right or left hand side * Balanced sound with high reproduction precision to ensure excellent speech intelligibility * Integrated volume control * Made in Germany * Five-year warranty * Rugged headband design made of spring steel with soft, replaceable headband pad * Moderate headband pressure (approx. 8 N) for maximum comfort * Lightweight (approx. 325 g without cable) * Modular construction for easy servicing * Supplied

with padded bag

P/N 11-07260.....

| Description | Part No. | Price |
|------------------------------|----------|-------|
| Ear pads, leatherette, black | 11-07261 | . |
| Ear pads, gel-filled, black | 11-07264 | . |

| Description | Part No. | Price |
|-----------------------------------|----------|-------|
| Ear pads, gel-filled, transparent | 11-07266 | . |
| Ear pads, leather, black | 11-07262 | . |

| Description | Part No. | Price |
|------------------------------|----------|-------|
| Ear pads, leather, blood-red | 11-07263 | . |
| Ear pads, leather, cognac | 11-07265 | . |
| Wind shield, black | 11-07267 | . |



FLIGHT LITE GEN II DUAL SENSOR PILOT LIGHT

FLITELite GEN II Dual Sensor Pilot Light. The New GEN II is 30% smaller, and more efficient than GEN One. The new version was developed to meet MIL-STD-3009, for Night Vision Imaging Systems (NVIS) aircrew auxiliary and utility lighting. This light is also perfect for the General Aviation Cockpit. FLITELite comes complete with: * GEN II FLITELite unit, computer controlled, dual sensor pilot light * Headset or Helmet Adapter (new adapters are free) * AAA Battery Pack * Optional Coin Cell Pack * Attachment accessories * AAA Batteries * Warranty

| Description | Part No. | Price |
|-----------------|----------|-------|
| For Bose X | 11-07034 | . |
| For Lightspeed | 11-07035 | . |
| For David Clark | 11-07036 | . |
| For Sennheiser | 11-07037 | . |

| The following Meet MIL-STD-3009, Night Vision Imaging Systems | | |
|---|----------|-------|
| Description | Part No. | Price |
| For Bose X | 11-07038 | . |
| For Lightspeed | 11-07039 | . |
| For David Clark | 11-07040 | . |
| For Sennheiser | 11-07041 | . |

FLITELITE VERSION 1.5

A new, intercom-powered hands-free LED flashlight that's built into the headset microphone. Never require batteries. Provides power to the LED's without a battery pack! Has a backup power system that provides 30 minutes of power in case of power failure. Integrated version powered by the aircraft intercom system (No battery pack required)



AVCOMM AC-747FL HEADSET - Comes with GA and Helicopter cords Key Features: Ships Power FLITELite - no battery pack or wires required! Exclusive PNR technology and "plug and fly" design. Full flex boom Ultra-lite micro samarium cobalt speakers. Each ear cup features an independent volume control. M-60 microphone with active filtering chip Deluxe Comfort Package included Full five-year factory warranty Converts easily by plugging in either the general aviation straight cord or the helicopter coil cord (both included with the headset). **FACTORY INSTALLED** • Stainless steel headband with easy thumbnut adjustment • Deluxe comfort headpad • Acoustic foam earseals **ALSO INCLUDED** • 100% cotton ear covers • Acoustic mic muff PN 11-05606



AVCOMM AC-900 FL HEADSET - Exclusive patented PNR™ (passive noise reduction) technology. Key Features: Patented PNR™ audio technology and full spectrum stereo response Ultra-lite Neodymium speakers M65 microphone with "active filtering" chip. Full flex boom Built-in push-to-talk. Mono-stereo switch built into the cord Each ear cup features an independent volume control Deluxe gel ear seals Full five-year warranty. Gold plated mic and headphone plugs PN 11-05607



AVCOMM AC-910 FL HEADSET - No battery pack required! Installed cell phone port. Built with AVCOMM's exclusive patented PNR™ (passive noise reduction) technology. Key Features: Intercom Powered FLITELite Patented PNR™ audio technology and full spectrum stereo response, Ultra-lite Neodymium speakers, M65 microphone with "active filtering" chip Full flex boom Built-in push-to-talk Built-in cell phone port with phone cable Mono-stereo switch built into the cord Each ear cup features an independent volume control Deluxe comfort package, Full five-year warranty. PN 11-05608.....

AV

FLIGHTCOM HEADSETS



DENALI ANR HEADSETS

Revolutionary in design, the 13.4 oz. Denali ANR provides radical advances in full spectrum hearing protection. An innovative low-force headband and contoured ear seals, coupled with ergonomically canted, low profile ear domes, give Denali a sleek, near custom fit & feel. Advances in the acoustic performance of the ANR circuitry provide an additional 19 to 21dB of low frequency noise attenuation, above the passive model. Just holding this headset in your hands, let alone wearing it in flight, will make you instantly aware of its outstanding "feather weight" and the completeness of its engineering. Smart placement of the volume controls; a solid, flex boom; elliptical noise-canceling mic with large 'sweet spot' for improved communications; ANR "drop and go" 9 volt battery box – no battery leads to attach in flight. Made in USA. Available in J-3 yellow & graphite blue.

Battery power (ylw).....P/N 11-00008 Battery power (blue).....P/N 11-00009

DENALI PASSIVE HEADSETS*

Offering a new level in pilot comfort and acoustic performance, the passive version of the new Denali weighs in at a scant 10.5 oz., yet provides outstanding noise attenuation.

Denali Passive Headset (yellow) P/N 11-00011.....
Denali Passive Headset (blue) P/N 11-00012.....

DENALI HELICOPTER HEADSETS*

Denali Helicopter Headset (yellow) P/N 11-01074 Denali Active Helicopter Headset (yellow).....P/N 11-01076
Denali Helicopter Headset (blue) P/N 11-01075 Denali Active Helicopter Headset (yellow).....P/N 11-01077

CLASSIC ANR HEADSET



Flightcom's Classic ANR Headset is built with comfort features not found in similar headsets. With overstuffed Confor® foam ear seals and larger than normal headband, the classic aviation style provides extended comfort and performance. Comfort: Classic ANR's Confor® Foam ear seals, and a wide polar fleece headpad ensure comfort. Innovation: A volume control on each dome allows for independent adjustment. Noise reduction: We keep it quiet with our advanced hearing protection technology. Confor® Foam ear seals effectively block out sound. Noise reduction rating is enhanced by 14 to 18 dB at certain key low frequencies. Comes with a durable nylon carry case

- Precision flex boom with noise canceling electret microphone
- Chrome headband with a washable polar-fleece headpad
- Mic muff and carrying case included
- Provides an additional 14-18dB noise attenuation at key low frequencies
- Dual-volume controls allow for independent volume adjustment in each ear dome
- 9-volt battery
- Stereo/mono switch ensures audio compatibility
- In-line, "drop-and-go"
- Weight: 17.9 oz.
- 3-year warranty

P/N 11-01326

FLIGHTCOM 5DX CLASSIC



This headset provides supreme comfort and fit through its washable polar fleece headpad, silicone gel ear seals and cloth ear seal covers. Features include noise cancelling electret microphone, precision flex boom, dual volume controls, stereo/ mono switch, 22dB noise reduction rating and all top quality components. Wt 17.9oz. 3-yr factory warranty

P/N 11-08760

5DX Helicopter Ver.P/N 11-01080

FLIGHTCOM 4DLX CLASSIC



This headset combines the proven performance and affordability of the popular 4DX Classic headset with the comfort of the "air pillow" headpad. Features of the 4DLX Classic include combined foam and liquid ear seals, precision flex boom, noise cancelling electret microphone, stereo/ mono switch, cloth ear seal covers, mic cover and 3-yr factory warranty. 24dB noise reduction rating Wt 16.8oz

P/N 11-17115.....

4DLX Helicopter Ver.....P/N 11-01079.....

FLIGHTCOM F20 LIGHTWEIGHT HEADSET



The lightest weight headset available from Flightcom and replaces old model 4.2. The F20 has a new, durable construction and updated appearance along with new features such as a volume control and an improved flexible boom. Also included is a set of 30dB ear plugs to help give you noise attenuation along with the comfort of a lightweight headset. The F20 has stereo/ mono capability, a noise cancelling electret mic, weighs only 4.6 oz, and includes a mic muff.

P/N 11-17615.....

3-year factory warranty.

FLIGHTCOM 4DX CLASSIC



The 4DX Classic is an entry-level headset with classic Flightcom ruggedness. With an easy-to-position wire articulated boom and a ventilated foam rubber headpad and combined liquid and foam ear seals, the 4DX Classic is comfortable and affordable. Noise canceling electret microphone • Single-volume control • Stereo/mono switchable • NRR 24dB • Weighs

16.9 ounces • Mic muff and cloth ear seal covers included • Three-year warranty

P/N 11-17110.....

4DXHelicopter Ver..... P/N 11-01078.....



Front View

Back View

FLIGHTCOM HEADSET BAG

Padded nylon headset bag with 2 chart-size mesh pocket

P/N 11-07371



FLIGHTCOM HYGIENE KIT

Denali Hygiene Kit - Ear seals, headpad and mic muffs. P/N 11-04855



FLIGHTCOM LEATHER EAR SEALS

103-0019-10 Protein Leather Ear Seals. Fits all Denali headsets. P/N 11-05947



FLIGHTCOM A9 MIC

The A9 is the first and only microphone which eliminates distortion and background noise. It eliminates garbling and provides enhanced voice clarity. The A9 is the standard microphone for Flightcom headsets with wire articulated booms and can be used as a replacement microphone for virtually all headsets with wire booms.

P/N 11-08765

FLIGHTCOM COMBO PACKAGES

These combination packages offer extra savings as well as a pre-packaged set which includes two headsets, an intercom and a push to talk switch.

Ask for quote on any unlisted headset/intercom combo.

| Combo# | Description (Combo includes:) | Part No. | Price |
|--------|--|----------|-------|
| 1A | 2 Flightcom 4DX hdsts, (1) IISX 2 pl. intercom & (1) P-T-T switch | 11-08705 | . |
| 1B | 2 Flightcom 4DX hdsts, (1) IISX 4 pl. intercom & (1) P-T-T switch | 11-08706 | . |
| 3A | 2 Flightcom 4DLX hdsts, (1) IISX 2 pl. intercom & (1) P-T-T switch | 11-08707 | . |
| 3B | 2 Flightcom 4DLX hdsts, (1) IISX 4 pl. intercom & (1) P-T-T switch | 11-08708 | . |
| 3C | 2 Flightcom 5DX hdsts, (1) IISX 2 pl. intercom & (1) P-T-T switch | 11-08717 | . |
| 3D | 2 Flightcom 5DX hdsts, (1) IISX 4 pl. intercom & (1) P-T-T switch | 11-08718 | . |

TELEX HEADSETS



TELEX STRATUS 30

Along with 30 dB of total noise reduction, the Stratus 30 headset offers comfort, durability and performance at a very affordable price. Designed as an entry-level ANR headset, the Stratus 30 combines superior ANR protection, a noise-canceling electret microphone, and fully adjustable boom to ensure clear communications. Comfort features include Telex's patented ComfortCam™ technology that allows you to quickly and easily control the tension of the ear cups for clamp-free flying. Comfort is enhanced by its low profile headband that provides even distribution

of weight on the head without pressure points and detented sliders that adjust the headband for a custom fit. You don't need to sacrifice comfort for durability. The Stratus 30 utilizes impact-resistant headband design with stainless steel reinforced stress points for durability and light weight. **FEATURES:** • Total Noise Reduction • Customize Your Headset for a Comfortable Fit • Cell Phone/Audio Adapter • Advanced Microphone Technology • Low-profile Adjustable Headband • Impact-Resistant Headband Design • Seal Out Sound. Seal In Comfort. • Total Control Means Superior Sound • Boom Microphone • Flight Bag • Weight: 14.2 oz/403 grams. • Runs on 2 AA batteries

P/N 11-04562

TELEX STRATUS 30XT



The new Stratus 30XT power management system allows you to power the headset from the aircraft panel, standard alkaline batteries, or rechargeable batteries. The Stratus 30XT offers a built-in battery recharger that recharges when plugged into a wall socket, the aircraft's panel power or even your car's 12-volt power outlet. The Stratus 30XT automatically senses the type of battery you've inserted so you can't make a mistake. The exclusive microprocessor-control battery management

system ensures more than 50 hours of battery life — one of the longest on the market. Customize your headset for a comfortable fit Telex's patented ComfortCam™ system allows you to fine tune headband tension to eliminate clamping. Comfort is enhanced by a unique headband construction that distributes weight evenly for a perfect fit, plus thick foam headband pad and newly designed, more comfortable cushions. Audio device management made simple Also included is Telex's innovative cell phone/MP3 adapter which allows you to attach both your cell phone and MP3 player at the same time — no more switching cords! Plus you can mute both.

FEATURES: • Total Noise Reduction • Customize Your Headset for a Comfortable Fit • Cell Phone/Audio Adapter • Advanced Microphone Technology • Low-profile Adjustable Headband • Impact-Resistant Headband Design • Seal Out Sound. Seal In Comfort. • Total Control Means Superior Sound • Boom Microphone • Flight Bag • Weight: 14.2 oz/403 grams. • Runs on 2 AA batteries

30XT headset.....P/N 11-04561

AC/DC 30XT Adapter.....P/N 11-04576

TELEX HEADPHONES



TELEX AIRMAN 760 HEADPHONE - A featherweight headphone unit designed for use with hand-held microphones. For long term comfort, an adjustable clothing clip removes the cord weight from the head of the user.

P/N 11-09300.....

TELEX ACCESSORIES

Cloth comfort covers - fits full size Telex/pair
 Windscreen (750, Pro III, ANR500).....P/N 11-01112

TELEX PRO III 5X5 HEADSET

This headset from Telex features a single side soft ear tip receiver with superior noise cancelling amplifier. The electret microphone is fully adjustable for use on the right or left side. Order push-to-talk switch for aircraft not so equipped.

P/N 11-09600.....



TELEX ECHELON 20 AVIATION HEADSET



Designed for students, new pilots, and value-conscious experienced fliers, the Telex Echelon™ 20 full cushion aviation headset offers comfort, excellent hearing protection and value. The Echelon 20 provides an impressive 20+ dB of passive noise protection and a top-quality noise canceling electret microphone for clear, reliable communications. The Echelon 20 features a low-profile headband for even weight distribution plus patented ComfortCam™ technology, a three-click tension adjustment system for a custom fit. Special earpieces with foam ear-seals pivot two ways to conform to any wearer while detent sliders adjust the headband — making the Telex Echelon 20 a comfortable headset for any flight.

P/N 11-04564

STRATUS™ 50-DIGITAL ANR HEADSET

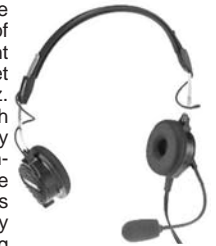


The Stratus™ 50-D cuts noise 3 ways by providing 24dB passive attenuation for high frequency noise outside the ANR range, 15dB of analog ANR for noise reduction below 1000 Hz, and up to 50dB of digital tonal noise reduction. DSP (Digit Signal Processing) allows the Stratus to predict recurring cabin noise and fine tune the Active Noise Reduction for the ultimate in hearing protection. Patented Comfort Cam™ tension adjustment allows for a custom fit, as do the heat sensitive slow recovery foam ear cushions, which conform to the user's head during wear. Extra thick cushions and pad reduce headband tension and provide a luxurious feel. Overmolded rubber earcups, volume control knobs and comfort cams offer ease of handling, and add to the comfort package. Features • Capable of battery or panel power Stereo/mono switch • Auto shut-off feature saves battery • Dual volume controls • Reversible mic for pilot/copilot operation • 18 oz. • Collapses for ease of portability. • Incl. Deluxe carrying case

P/N 11-04560

TELEX AIRMAN ANR 850

Telex Airman ANR 850 uses Active Noise Reduction technology to provide up to 12dB of noise attenuation ensuring the clearest in-flight communication. Never before has a headset been so comfortable weighing less than 4 oz. Combining "set and forget" volume control with never worrying about a battery pack, undoubtedly makes the Telex Airman ANR 850 the most convenient commercial aviation headset available today. Power to the ANR is provided by mic bias (active intercom) eliminating the need for battery packs or panel power. By drastically reducing wind noise in jet cockpits, the Airman ANR 850 helps to reduce fatigue. The Telex Airman ANR 850 is unsurpassed in clarity, comfort and convenience.P/N 11-01880.....
 Telex Airman ANR 850 (Airbus Application) ...P/N 11-05464.....
 Telex 850 Leather Ear Seals.....P/N 11-04332.....



TELEX ANR 500 HEADSET



The Airman ANR 500 features an all new design, and includes volume control and a panel power option! Designed for comfort and durability with stainless steel at the stress points, this well balanced headset evenly distributes weight on head without pressure points, and weighs in at just 7 oz. (198g)! Foam-filled moleskin ear cushions are standard. An electret noise cancelling microphone is mounted on flex boom, adjustable for left or right side operation. The battery module includes for power, volume, and stereo/mono operation, as well as a low battery indicator and a metal clothing clip. The battery pack accepts (1) 9V alkaline battery (supplied) for 50 hours typical flying time. Panel power is available as an option. NRR of 12 dB passive & 13-14 dB active below 1000 Hz.

Battery Powered.....P/N 11-00013.....

TELEX HEADSETS - SPORT-LINK HEADSETS/HELMETS

TELEX ECHELON 25XT HEADSET



The Echelon 25XT packs additional comfort and performance features onto the solid Echelon platform. The 25XT includes Telex's innovative cell phone/MP3 adapter that allows you to attach both your cell phone and MP3 player at the same time. No more switching cords! Need to communicate? Simply mute them both at a touch of a button. For increased comfort, the Echelon 25XT features a plush, thick foam headband pad and newly designed, more comfortable ear cushions. The Echelon 25XT also offers individual

volume controls for each ear cup and a stereo/mono select switch.
FEATURES: • Total Noise Reduction • Customize Your Headset for a Comfortable Fit • Cell Phone/Audio Adapter • Advanced Microphone Technology • Impact-Resistant Headband Design • Seal Out Sound. Seal In Comfort. • Total Control Means Superior Sound • Boom Microphone • Flight Bag • Weight: 13.6 oz/386 grams

P/N 11-04563

TELEX AIRMAN 750 HEADSET



A featherweight headset which is the lightest in the industry (2.5 oz.). Features a miniature noise-cancelling electret microphone that provides superior 400 Hz hum rejection. Microphone pivot arm pivots 310° for use on left or right side. The optional Telex PT-300 push-to-talk switch is recommended for use with the Airman 750.

P/N 11-09500

Foam Ear Cushions for 750/760

TELEX AIRMAN 750 SINGLE-SIDED HEADSET

The Airman® 750SS is 25% lighter than the Airman® 750. Its effective weight (without the cord) is only 2.4 oz. Many pilots prefer the ergonomics of a single sided headset. It eliminates the need to pull off one of the earphones when listening to cockpit conversations.

P/N 11-01123



SUPER SOFT TOP FOR HEADSETS



The Super Soft Top headset is the ultimate in comfort. Put this headset on and feel the difference! It contains two layers of foam and one layer of polyester wool that is covered with a 90% cotton fabric for maximum humidity absorption. Easy to install, it fits the following headsets:

- All David Clark models, (except DC20-10 series)
- All Pilot Avionics models, (except PA-1776, PA-1779, Premier, Concord HNE, & Commander series)
- All Marv Golden MG's * All Sigtronics
- All ASA's * All Softcom's
- All Flightcom models (except F-20 & Eclipse)

P/N 13-00358

HEADSET COMFORTOP



Replaces the original head pad with a sheepskin pad providing optimum comfort.

P/N 11-03014

NAV-DATA DELUXE HEADSET



The Nav-Data Technologies deluxe headset has one of the best passive noise reduction ratings of any headset available at any cost. There are many reasons to own the Nav-Data Headset:

- * Switch selectable stereo or mono operation
- * Dual volume controls
- * Gel earseals for extra comfort and noise attenuation
- * Super padded head band for comfort during long flights
- * Full flexible mic boom - stays where you put it!
- * Noise canceling electret mic
- * Weighs only 14.3 ounces

P/N 13-06087

SPORT-LINK INTERCOMS



- Two Place Electret..... P/N 11-05327
- Two Place Dynamic.... P/N 11-05328

SPORT-LINK HEADSETS



- Single Headset, Electret..... P/N 11-05330
- Single Headset, Dynamic P/N 11-05329
- Headset, General Aviation... P/N 11-05337
- Dual Headset System, Electret P/N 11-05338
- Dual Headset System, Dynamic P/N 11-05339

SPORT-LINK OPEN FACE HELMET SYSTEM



- Dual Helmet System, Electret... P/N 11-05496
- Dual Helmet System, Dynamic... P/N 11-05497
- Single Helmet System, Electret P/N 11-05498
- Single Helmet System, Dynamic P/N 11-05499

SPORT-LINK DETACH HELMET SYSTEM



- Dual Detach System, Electret... P/N 11-05500
- Dual Detach System, Dynamic. P/N 11-05501
- Detach Helmet / Electret Headset only
P/N 11-05502
- Detach Helmet / Dynamic Headset only
P/N 11-05503
- Detach Helmet, Shell only - Specify: Black Gloss, Red, Gloss, Silver Metallic, White Metallic (Large will fit S, M, and L) (2x will fit larger than L) (Part runs small) For size: measure right above ears all the way around head..... P/N 11-05504

SPORT-LINK FULL FACE HELMET SYSTEM



- Concept 1 Sstem, Electret
P/N 11-05407
- Concept 1 Sstem, Dynamic
P/N 11-05408
- C1 Single Helmet only, Electret
P/N 11-05409
- C1 Single Helmet only, Dynamic
P/N 11-05410
- C2 Single Helmet only, Electret P/N 11-05411
- C2 Single Helmet only, Dynamic..... P/N 11-05412
- Single Face Shield (C1) P/N 11-05413

SPORT-LINK RADIOS / PTT / CABLES

| Description | Part No. | Price |
|------------------------------------|----------|-------|
| Icom A4, A3, A22, A24, A6 PTT | 11-05331 | . |
| Icom A5, A23 PTT | 11-05332 | . |
| JRC/Icom A20, A21 PTT | 11-05333 | . |
| FRS / GMRS PTT (dual plug version) | 11-05334 | . |
| General Aviation PTT - shielded | 11-05335 | . |
| General Aviation PTT - unshielded | 11-05336 | . |
| Cell Phone Cord | 11-05415 | . |
| Music Cord | 11-05417 | . |
| Power Cord | 11-05414 | . |

SPORT-LINK ACCESSORIES

| Description | Part No. | Price |
|-------------------------|----------|-------|
| Intercom - Pac | 11-05419 | . |
| Speaker, Extended range | 11-05420 | . |
| Mic. Boom | 11-05421 | . |
| Dynamic Mic. | 11-05422 | . |
| Electret Mic. | 11-05423 | . |
| Heavy Duty Wind Screen | 11-05424 | . |
| Peak Visor | 11-05425 | . |
| Helmet Extension | 11-05426 | . |



HEADSETS



PELTOR ANR 9500 DIGITAL HEADSET

Digital and Analog ANR Aviation Headgear Aviation Headset White/Black * Foam and Gel Sealing Rings * Bag * Cell And CD Audio Cables * Power Changer P/N 11-07590



PELTOR SPORT LE SERIES

These passive aviation headsets from Peltor features a new hygiene kit for increased comfort level and include an aviation carrying case. Color: Midnight blue. Lifetime warranty.

7000 SERIES STARTER AVIATION HEADSET

- Includes deluxe carrying case, foam/liquid earmolds, single volume control knob, 180° electret swivel boom mic, folding headband, midnight blue cups, Lifetime warranty. NRR 24 dBA. P/N 11-01580

7000 SERIES STARTER HELICOPTER HEADSET - Same as the aviation series but comes with the single plug helicopter cable assembler, midnight blue cups. Lifetime warranty. NRR 24 dBA. P/N 11-01581



PELTOR PRO GT SERIES

These passive aviation headsets from Peltor feature new gel earmolds, new goose neck boom design, new shielded cable assembly, and a Lifetime warranty. aviation carrying case included. Available in midnight blue & white.

7000 SERIES PREMIUM AVIATOR HEADSET -

Includes deluxe carrying case, gel earmolds, single volume with independent earphone level control, premium 180° swivel electret boom mic, shielded cable assembly, deep cup design for increased ear room. Lifetime warranty. NRR 26 dBA. Midnight blue cups P/N 11-01582

7000 SERIES PREMIUM AVIATOR NECKBAND HEADSET - Same as the headband model aviation series but comes with a neckband model headset for use with hats. Midnight blue cups. P/N 11-01584

7000 SERIES PREMIUM HELICOPTER HEADSET - Same as the headband model aviation series but come with a single plug helicopter format cable assembly, midnight blue cups. NRR 26 dBA. P/N 11-01585

HEADSET ACCESSORIES

Deluxe Carrying Bag P/N 11-01586

Foam/liquid sealing ring w/ foam inserts - sold as a pair P/N 11-01587

Gel sealing cushions - sold as a pair P/N 11-01588

Mic foam windscreen for Sport LE series P/N 11-17019

PELTOR WORKTUNES

Worktunes is a self-contained AM/FM noise attenuating headset (NRR 25db) which provides hearing protection combined with an AM/FM radio to provide. Features include a wide, soft padded headband, flexible antenna, automatic soft switch from stereo to mono for areas with weak signals, and quick and easy tuning and volume adjustments, and wide, soft cushions for low pressure, excellent sealing, and added comfort. P/N 11-01589



PELTOR NORDICA SPORT/ NORDICA SPORT GT

Peltor blends them masterfully with Nordica- the aviation headset developed to soar far beyond the expectations of the most discriminating pilots. • Lightest Weight • Headset Avail. • Only 9.8 ounces • Four Dual-Color Designs • Crisp, Clear Reception/Transmission • Contoured, Low Profile Ear Cups • NRR 23 dB

Peltor Nordica Sport Red P/N 11-05252

Peltor Nordica Sport GT Grey P/N 11-05248

Peltor Nordica Sport GT Yellow P/N 11-05249

Peltor Nordica Sport GT Blue P/N 11-05251

PELTOR ACCESSORIES

Mic Muff for 7004 P/N 11-17019

Mic Muff for WS4 P/N 11-18535



PLANTRONICS HEADSET

The popular MS50/T30-3 from Plantronics is similar to the Starset model but is worn clipped to eyeglasses or on a headband. The MS50/T30-3 is very comfortable and like all Plantronics headsets, extremely reliable and widely used in the airline industry. Comes with a headband, storage bag, and eartips. P/N 11-12045



MS200 PLANTRONICS HEADSET

Combines a unique lightweight design and advanced technology to deliver the ultimate in comfort and reliability. The noise-canceling microphone enables clear, uninterrupted communications between air and ground. Its compact under-the-ear design ensures a secure, comfortable fit for extended wear, yet is convenient to carry and stow. Features: * Hear every word through superior audio quality * 5-foot cord with one each PJ055 and PJ068 plug. * FAA approved P/N 13-06563

NORDICA SPORT AVIATION HEADSETS

Peltor blends them masterfully with Nordica, the aviation headset developed to soar far beyond the expectations of the most discriminating pilots.

Features: Lightest weight headset available. 9.8 ounces. Three dual-color designs. Crisp, clear reception/transmission. Contoured, low profile ear cups.

Nordica Sport Headset Grey P/N 11-04554

Nordica Sport Headset Blue P/N 11-04555

Nordica Sport Headset Yellow P/N 11-04556

Peltor Deluxe Carrying Bag P/N 11-01586

Peltor Foam/Liquid Sealing Ring P/N 11-01587

Peltor Gel Sealing Cushions P/N 11-01588

Peltor Cloth Ear Covers P/N 11-04557

Peltor Microphone Windscreen P/N 11-04558

Peltor Clothing Clip P/N 11-04559

PILOT'S HEADSET CUSHION

Constructed of plush 3/4" thick sheepskin & genuine leather. Does your headset feel uncomfortable and create a sore spot on the top of your head after wearing it for just a short time? If so, you need our plush, super soft sheepskin and leather headset cushion! The soft sheepskin rests on your head instead of the uncomfortable headset pad. Designed to fit all headsets with its adjustable velcro closure. Extra velcro across top also holds your flashlight for nighttime flying. Relieves all contact and pressure on the top of your head for even the longest trips. P/N 13-40730

PTL EARMUFFS

The only muff that lets workers listen safely without removing their muffs. When workers lift their muffs, they lower their protection. Now Peltor puts safe listening at their fingertips. Just push the button on the PTL muff and speech & sounds "outside" the muff cup can be heard "inside"-- clearly and safely. After 30 seconds, the muff automatically returns to its full protection with an NRR of up to 26 dB. Listen again? Just push again. It's that simple **Two styles to choose from:** • Hi-Viz PTL: • 26 NRR • Hi-Viz color for recognition of workers in low light conditions • A perfect choice for road construction, airport, & utility workers Behind-the-Head PTL: • Behind-the-head band design allows for easy use with hard hats • Two low mounting points provide great comfort • 26 NRR P/N 11-04300



HEADSETS, INC. EM-1 ANR HEADSET

EM-1 features conservative dark green ear cups, an Oregon Aero SoftTop padded headband, gel ear seals, and place-it-anywhere mic boom which makes it ergonomically friendly. Stereo capable with individual volume controls for each ear and a switch on the cord for mono or stereo audio. New ANR modules are made of softer material for better noise absorption. Ear cups are also rubberized for the same reason. A separate battery box is used and shares a cord with the mic/phone jacks, eliminating the need to unite 2 separate cords. The cords are heavily reinforced at attach points to avoid wear or breakage. The cords separate at the end so you can find a convenient place to stow the battery box in the cockpit. Optional power sources allow the EM-1 to be powered by the aircraft's electrical system, a cigarette lighter, or rechargeable battery. Comes with a 3-yr warranty, headset bag, the Oregon Aero SoftTop, & gel ear seals. P/N 11-00512

SILICONE GEL EAR SEALS

Gel ear seals conform to the shape of your head, resulting in an airtight fit which is required for proper air performance. If your earmolds are the older dry foam or liquid filled they must be replaced. P/N 11-03011

AUTO SHUT-OFF BATTERY BOX

This option will extend the battery life by automatically turning off after 4 minutes of inactivity. The flashing LED cts as a reminder that the power is on and changes color from green to yellow to red as the battery depletes. P/N 11-03013

PILOT USA HEADSETS

PA1779T ANR HEADSET



- Passive: 25dB (NR)
- Active: 20-22dB
- Auto Shut-off
- Cell/Satellite phone battery interface
- Auxiliary audio interface for music or audible checklist/warnings
- Mono/Stereo capability
- Dual volume control
- Twin layer gel ear seals
- Custom padded case
- Rechargeable NIMH battery
- Usage time: 30-40 hrs.
- Weight: 14.9 oz (423 grams)
- 5-year warranty
- Made in USA

| Model | Part No. | Price |
|--------------------------|----------|-------|
| PA-1779T | 11-11515 | . |
| PA-1779TH (Helicopter) | 11-03538 | . |
| PA-1779TP (Panel Mount) | 11-00440 | . |
| PA-1779TB (Bose Connect) | 11-03539 | . |

PA1771T ANR HEADSET



- Active: 20-22
- Passive: (NRR) 25dB
- Cell/Satellite phone
- Dual volume control
- Auxiliary audio interface
- Custom padded case for music or audible checklist/warnings
- 9V alkaline battery
- Mono/Stereo capability
- Battery life: 25-30 hrs.
- Weight: 12.9 oz (366 grams)
- Auto shut-off
- 5-year warranty
- Made in the USA

| Model | Part No. | Price |
|------------------------|----------|-------|
| PA-1771T | 11-02110 | . |
| PA-1771TH (Helicopter) | 11-03537 | . |

PA1761T ANR HEADSET



- Active: 16-19dB
- Passive: (NRR) 23dB
- Cell/Satellite phone interface
- All flexible mic boom
- Mono/Stereo capability
- Dual volume control
- Auto shut-off
- Twin layer gel ear seals
- Powered by 9V battery
- Battery life: 25-30 hrs.
- Weight: 12.9 oz (366 grams)
- Padded Protective bag
- Auxiliary audio interface for music or audible check list/warnings
- 3-Year Warranty

| Model | Part No. | Price |
|------------------------|----------|-------|
| PA-1761T | 11-03550 | . |
| PA-1761TH (Helicopter) | 11-06505 | . |

PA2170T PASSIVE HEADSET



- Passive: (NRR) 26dB
- Cell/Satellite phone interface.
- Auxiliary audio interface for music or audible checklist / warnings
- Mono/Stereo capability for music or audible
- Dual volume control interface
- Padded protective bag
- Weight: 10.9 oz (305 grams)
- Five-year warranty
- Made in the USA

| Model | Part No. | Price |
|------------------------|----------|-------|
| PA-2170T | 11-04940 | . |
| PA-2170TH (Helicopter) | 11-03553 | . |

PA1181T PASSIVE HEADSET



- Passive: (NRR) 23dB
- Push-to-talk switch
- Mono/Stereo capability
- Dual volume control
- All flexible mic boom
- 5-year warranty
- Twin layer gel ear seals
- Padded protective bag
- Triple-plated black hard
- Auxiliary audio interface
- auble checklist/warnings
- Weight: 13.4 ounces

| Model | Part No. | Price |
|------------------------|----------|-------|
| PA-1181T | 11-03554 | . |
| PA-1181T-P (Pink) | 11-07326 | . |
| PA-1181TH (Helicopter) | 11-03555 | . |

PA1171T PASSIVE HEADSET



- Passive: (NRR) 24dB
- Weight: 14.5 oz
- Cell/satellite phone interface
- 3-year warranty
- Telescopic-flex mic boom
- Leatherette soft seals
- Mono/Stereo capability
- Dual volume control
- Padded Protective bag
- SuperCushion headband
- Auxiliary audio interface for music / audible checklist/warnings
- 3-Year Warranty

| Model | Part No. | Price |
|------------------------|----------|-------|
| PA-1171T | 11-03556 | . |
| PA-1171TH (Helicopter) | 11-03557 | . |

PA1161T PASSIVE HEADSET



- * Passive Noise Reduction: (NRR) 24dB
- * Auxiliary audio interface for music or audible checklists/warnings
- * Flex "memory" microphone boom
- * Noise canceling electret microphone
- * Mini SuperCushion head pad
- * Mono/stereo capability

* Liquid/Foam ear seals * Individual volume control * Warranty: 3 yrs

| Model | Part No. | Price |
|------------------------|----------|-------|
| PA-1161T | 11-04063 | . |
| PA-1161TH (Helicopter) | 11-03559 | . |

P-1151AC PILOT CHILD PASSIVE HEADSET



- Passive: 24dB (NR)
- Auxiliary audio interface for music or audible checklist / warnings
- Designed for children (1.5 - 10 yrs)
- Extra small headband for perfect fit
- Super Cushion Headpad
- Miniature all flexible mic boom
- Foam ear seals
- Weight: 13.9 oz (389 grams) • 3-Year Warranty

| Model | Part No. | Price |
|--------------------|--------------|-------|
| PA-1151ACB (Boys) | P/N 11-09660 | . |
| PA-1151ACG (Girls) | P/N 11-03540 | . |

PA-1779M MILITARY HEADSET



- Passive: 23dB (NR)
- Active: Additional 20-22dB
- Shielded coiled cord with U174/U four conductor plug
- M-87 dynamic microphone
- M-101 dynamic mic also avail.
- Twin layer gel ear seals
- Custom padded protective case

- Rechargeable NIMH Battery
- Usage Time: 35-40 hrs
- Weight: 14.5 oz (406 grams)
- 5-year Warranty
- Made in the USA

| Model | Part No. | Price |
|-------------|----------|-------|
| PA-1779M87 | 11-06539 | . |
| PA-1779M101 | 11-06538 | . |

PA-1176M MILITARY HEADSET



- Passive: 24dB
- Shielded coiled cord with U174/U
- Metal-Flex sliding mic boom
- M-87 dynamic mic
- Super cushion headpad
- Padded Protective Bag
- M-101 dynamic mic also avail.
- Weight: 14.5 oz (406 grams)

• 3-year Warranty

| Model | Part No. | Price |
|------------|----------|-------|
| PA1176M101 | 11-06542 | . |
| PA-1176M87 | 11-06543 | . |

PA-1166M MILITARY HEADSET



- Passive: 24dB
- Shielded coiled cord with U174/U
- Metal-Flex sliding mic boom
- M-87 dynamic mic
- Super cushion headpad
- Padded Protective Bag
- M-101 dynamic mic also avail.
- Weight: 14.5 oz (406 grams)

• 3-year Warranty

| Model | Part No. | Price |
|-------------|----------|-------|
| PA-1166M101 | 11-06544 | . |
| PA-1166M87 | 11-06545 | . |

PILOT USA ACCESSORIES

EAR SEALS



PA-21SLC - 3/4" Large Soft Cushion Ear Seals for DNC-XL... P/N 11-04946.....

PA-22-SLC - 3/4" Large Leatherette Soft Cushion Ear Seals... P/N 11-07873.....

PA-21G - Twin Layer Gel Ear Seals for DNC-Series P/N 11-04960.....

PA-22G - Twin Layer Gel Ear Seals... P/N 11-04680.....

PA-20 - Cloth Ear Seal Covers..... P/N 11-04950.....

MICROPHONES



A. PA-3..... P/N 11-06557.....

B. PA-5..... P/N 11-06558.....

C. PA-7..... P/N 11-06559.....

D. PA-9..... P/N 11-06560.....

SHEEPSKIN HEAD PADS

114213SH..... P/N 11-06566.....

WINDSCREENS



A. PA-10..... P/N 11-06562.....

B. PA-10L..... P/N 11-04026.....

OPEN COCKPIT MIC COVERS

C. PA-11..... P/N 11-06564.....

D. PA-11L..... P/N 11-06565.....

AV

SOFTCOMM HEADSETS - NOISEBUSTER®



SOFTCOMM C-10 CHANCELLOR HEADSET

• 24 db passive NRR • Mono/Stereo switchable • Built-in PTT switch • Black gel and foam earseals included • M-56 electret mic • 66" Flexible Heavy Duty Cables • Wt: 15.1oz. head weight • 5 year warranty
P/N 11-03756



SOFTCOMM C-20 PHOENIX HEADSET

• 23 db passive NRR • 5 year warranty • Mono/Stereo switchable • Extra large thick soft ear seals • M-56 electret mic • 66" Flexible Heavy Duty Cables • Weight: 13.9 oz. head weight
P/N 11-04761



SOFTCOMM C-35 WHITE KNIGHT HEADSET

• 22 db passive NRR • 3 year warranty • Mono / Stereo switchable • Lightweight foam ear seals • M-56 electret mic • 66" Flexible Heavy duty cables • Wt: 11.9 oz. head weight
P/N 11-03759



SOFTCOMM C-40 PRO-AM HEADSET

• 23 db passive NRR • Mono only • Lightweight foam ear seals • M-56 electret mic • 66" Flexible Heavy Duty Cables • Wt: 12.3 oz. head weight • 3 year warranty.
P/N 11-03761
Stereo P/N 11-03762
Helicopter P/N 11-04131



SOFTCOMM C-45 PRINCE HEADSET

• 22 db passive NRR • Mono only • Lightweight foam ear seals • M-56 electret mic • 66" Flexible Heavy Du ty Cables • Wt: 11.4 oz. head weight • Folds into Ball • 3 year warranty.
P/N 11-03763
C-45-10A Black With Audio
P/N 11-06368



SOFTCOMM C-80 BNE HEADSET

• 24db passive NRR • Mono/Stereo switchable • M-57 electret mic • Fully flexible mic boom • 66" Flexible Heavy Duty Cables • Wt:14 oz. C-80 head weight • Wt: 15.6 oz. • 3 conductor cell phone compatible • 3 yr warranty
P/N 11-00211



C45-10 CHILD PRINCE HEADSET

• 22 db passive NRR • Mono only • Smaller lightweight foam ear seals • M-56 electret mic • 66" Flexible Heavy Duty Cables • Wt: 11.0 oz. head weight • Folds into Ball • 3 year warranty • Red P/N 11-03764
Purple P/N 11-07123
C-45-10A - w/ audio plug for CD, DVD, MP3 players or handhelds video games.
P/N 11-05946

SOFTCOMM HEADSET ACCESSORIES

Black Gel Ear Seals P/N 11-11834 Pr.
Cloth Comfort Covers P/N 11-11810 Pr.
Foam Mike Muff P/N 11-11820 Ea.
Nylon Flight Bag P/N 11-11808 Ea.



C-200 CENTURION

The C-200 headset features a contoured head pad for a soft, comfortable fit, a flex boom articulating fulcrum with adjustable mic boom and mic muff, and a small power pack with low battery LED indicator. The C-200 is cell phone ready and is complete with interface jack, interconnect cable and hands free adaptor. Other features include silver black dunes with silver lettering, gel and foam filled ear seals; stereo/mono switch and dual volume controls, noise canceling electret mic and RF immune M-56 amplifier, -24 db passive and -19 ANR, and push-to-talk switch on ear dome. Wt: 14 oz. Power: 9V battery. 3 year warranty. Made in the USA. Specifications: • Head Weight: 14.2 oz. • Total weight: 18.5 oz. • NR Rating: -24 db Passive, -19 db active
Warranty: 3yr Unconditional. P/N 11-03019

SOFTCOMM C-300 CENTURION

The C-300 headset features a fail safe power feature which automatically converts to a full performance -24 dB passive headset should ANR circuit fail. The C-300 is cell telephone ready with amplified volume, detachable cable supplied for ground phone use in noisy environments. Supports Cell Phones equipped with a 2.5mm 3 conductor hands free jack. Listen to both Cell-phone and ATC at same time. The C-300 has noise attenuation of -19db active ANR and -24 db passive, a unique noise absorbing material, positive set flex boom, soft foam ear seals, cloth covers and mic muff. Made in the USA. Specifications: •Weight: 16.2 oz •Total Weight: 21.7 oz •NR Rating: -24 db Passive, -17 db active • Warranty: 3yr Unconditional P/N 11-03020



SOFTCOMM C-40-10 RED BARON

• 23 db passive NRR • Mono only • Lightweight foam ear seals • M-56 electret mic • 66" Flexible Heavy Duty Cables • Wt: 12.5 oz. head weight • 3 year warranty
P/N 12-01087



SOFTCOMM C-50 BLACK KNIGHT

• 22 db passive NRR • Mono only • Lightweight foam ear seals • M-56 electret mic • 66" Flex HD Cables • Wt: 11.4oz. head weight • Folds into Ball
P/N 11-02654



SOFTCOMM C-60 SILVER EDITION

• 24 db passive NRR • PTT in Dome • Mono/Stereo switchable • Lightweight foam ear seals • M-56 electret mic • 66" Flexible Heavy Duty Cables • Wt: 14.9 oz. headweight • 5 year warranty
P/N 11-03766



C-60M - Racing Version (Dynamic mic)
P/N 11-11826

C-66M - Helicopter Version w/M-8 Military Mic (for very noisy helicopters)
P/N 11-11845

SOFTCOMM C-45-20

YOUTH / PASSENGER ANR

• 22 db passive NRR • 17 db active NRR • Mono/Stereo switchable • M-56 electret mic • 66" Flexible Heavy Duty Cables • Wt: 14.5 oz. head weight • Incl. child & adult lightweight foam ear seals • Folds into Ball • 3 yr warranty • Purple
P/N 11-01283



NOISEBUSTER®

Electronically cancels irritating background noise so you can enjoy peace and quiet or enhanced clarity of music with reduced distortion. Try it on an airplane to reduce engine din and enhance the sounds of in-flight entertainment. NoiseBuster® delivers the utmost in music clarity when used with portable audio devices. Features: • Digital-ready stereo headphones, delivering high impact stereo sound • Comfortable, lightweight, easy to adjust • Foldable for portability and easy storage (travel pouch incl.) • Airplane seat dual-prong adapter (included) • AAA battery (included) • Audio play-through with or without noise reduction.
P/N 11-00107



AV

COMTRONICS HEADSETS & HELMETS

COMTRONICS HEADSETS

COMTRONICS ULTRA-LIGHT HEADSET MODEL - 3000 - * Noise-canceling electret microphone * Individual ear muffs adjust up/down * Full cover pillow-style headband * 29dB noise-canceling ear-muffs * 100% dielectric materials * Contemporary design * Light weight 12 oz. * Available in gray * Extra cost options: gel/foam earseal set; foam or leather wind-screen. P/N 11-07424.....



COMTRONICS STANDARD GENERAL AVIATION HEADSET MODEL-EL-3000 - General Aviation Model-3000 Headset is lightweight at 10oz., has gray muffs uses an electret noise-canceling microphone and has 25dB noise attenuation. This headset is also very comfortable, has a soft headband, and gel ear seals can be added as well. P/N 11-07427.....

COMTRONICS AERO-COM SYSTEM - Each includes Two headsets and the Intercom specified.

| Model | Headsets | Intercom | Part No. | Price |
|------------------------------|------------------|----------------|----------|-------|
| Aero-Com 3000 - Ultra-Com II | Ultra-Light 3000 | Ultra-Com II | 11-07411 | . |
| Aero-Com 3000 - Dual-Com | Ultra-Light 3000 | Dual-Com II | 11-07412 | . |
| Aero-Com 3000 - Dual-Com | Ultra-Light 3000 | Panel Mount II | 11-07413 | . |

COMTRONICS ULTRA-LIGHT HEADSET MODEL - 3100 - * Worn by it self or fitted inside our PRO-COM helmet completing the audio system * 31 dB noise-attenuating earcups are comfortable * Light weight (15oz.) * Available in black * Extra cost options: gel/foam earseal set; foam or leather wind-screen P/N 11-07425.....

COMTRONICS DELUXE GENERAL AVIATION HEADSET MODEL-3100 - General Aviation Model-3100 Headset uses the same 31dB noise-attenuating black muffs as the ultralight headset. It is lightweight at 15oz., and has an electret noise-canceling microphone. These are one of the most comfortable and quietest passive headsets on the market today. Gel/foam ear seals are also available and extremely comfortable as the seal nicely around the ear and eyeglass arms. P/N 11-07428.....



COMTRONICS AERO-COM SYSTEM - Each includes Two headsets and the Intercom specified.

| Model | Headsets | Intercom | Part No. | Price |
|------------------------------|------------------|----------------|----------|-------|
| Aero-Com 3100 - Ultra-Com II | Ultra-Light 3100 | Ultra-Com II | 11-07414 | . |
| Aero-Com 3100 - Dual-Com | Ultra-Light 3100 | Dual-Com II | 11-07415 | . |
| Aero-Com 3100 - Dual-Com | Ultra-Light 3100 | Panel Mount II | 11-07416 | . |

COMTRONICS HEADPHONE - * Listen-only * Available in black only * Extra cost option: gel/foam earseal set/P/N 11-07429.....

COMTRONICS HEADSET ACCESSORIES

| Description | Part No. | Price |
|--|----------|-------|
| Coiled cord option for Headsets/ | 11-07438 | . |
| Gel/Foam Ear Seal Cushions | 11-07439 | . |
| Ultra Paq II - Heavy duty pack for the Ultra-Com II intercom | 11-07442 | . |
| Dual Paq II - Heavy duty pack for the Dual-Com II intercom | 11-07443 | . |
| Windscreen - Foam / Dynamic | 11-07445 | . |
| Windscreen - Leather / Dynamic | 11-07446 | . |
| Windscreen - Foam / Electret | 11-07447 | . |
| Windscreen - Leather / Electret | 11-07448 | . |

COMTRONICS HELMETS

COMTRONICS ULTRA-PRO HF HELMET -



The ULTRA-PRO HF Helmet has a built in communication system using an electret microphone, built-in ear cups, quick release face shield with either a single plug for ultralight audio

| Helmet Size Selection Chart | |
|-----------------------------|------------------|
| Helmet Size | Head Size |
| XX-Large | 7-5/8" & up |
| X-Large | 7-3/8" to 7-5/8" |
| Large | 7-1/8" to 7-3/8" |
| Medium | 6-7/8" to 7-1/8" |
| Small | 6-5/8" to 6-7/8" |

or two plugs for general aviation audio. This helmet has an ultra-plush interior and cheek pads are added to prevent air and noise from entering the helmet. Adjustable top vent and rear exhaust diffuser keep the helmet at a comfortable temperature. P/N 11-07505..... Colors available are: Metallic White, Metallic Silver, Metallic Wine, Flat titanium, Black, and Flat Black. Please specify color & Size.

COMTRONICS ULTRA-PRO HP HELMET - The ULTRA-PRO HP Helmet is similar to the Ultra-Pro 2000 using the same audio. This helmet is a different design and has a large central air channel technology vent system designed to flow massive amounts of air. Also included with the helmet is the ram air visor. P/N 11-07506..... Colors available are: Metallic White, Metallic Silver, Metallic

Wine, Flat titanium, Black, and Flat Black. Please specify color & Size. See sizing chart.



COMTRONICS ULTRA-PRO STANDARD - Earmuffs are attached to a detent on the outside surface of this helmet allowing easy entry and the ability to converse with student while making pre-flight inspections.

VL Audio P/N 11-07390.....
No Audio P/N 11-07394.....

Colors available are: White, Red, Silver, or Black. Sizes Available: Small, Medium, Large, X-Large, and XX-Large. Please specify color & Size. See sizing chart.



COMTRONICS INSTRUCT-COM SYSTEM - Each includes Two helmets and the Intercom specified.

| Model | Helmet | Intercom | Part No. | Price |
|----------------------------------|--------------------|----------------|----------|-------|
| Instruct-Com Std. - Ultra-Com II | Ultra-Pro Standard | Ultra-Com II | 11-07401 | . |
| Instruct-Com Std. - Dual-Com | Ultra-Pro Standard | Dual-Com II | 11-07402 | . |
| Instruct-Com Std. - Dual-Com | Ultra-Pro Standard | Panel Mount II | 11-07403 | . |

Note: Please specify color and size of helmet. See colors available above, and sizing chart

COMTRONICS ULTRA-PRO 2000 - Earmuffs are attached to a spring steel wire frame which is secured to the inside surface of shell. This arrangement provides a more positive seal for noise reduction caused by the engine, propeller and wind. Colors available are: White, Red, Silver, or Black. Sizes Available: Small, Medium, Large, X-Large, and XX-Large. Please specify color & Size. See sizing chart.



VL Audio P/N 11-07391.....
No Audio P/N 11-07395.....

COMTRONICS INSTRUCT-COM SYSTEM - Each includes Two helmets and the Intercom specified.

| Model | Helmet | Intercom | Part No. | Price |
|----------------------------------|------------------|----------------|----------|-------|
| Instruct-Com 2000 - Ultra-Com II | Ultra-Pro 2000 | Ultra-Com II | 11-07404 | . |
| Instruct-Com 2000 - Dual-Com | Ultra-Light 2000 | Dual-Com II | 11-07405 | . |
| Instruct-Com 2000 - Dual-Com | Ultra-Light 2000 | Panel Mount II | 11-07406 | . |

Note: Please specify color and size of helmet. See colors available above, and sizing chart

COMTRONICS PRO-COM - Same basic shell and upholstery as the Standard and 2000 models and accommodates the installation of a Model 3100 headset to complete the audio system. Comes with a peak visor and can be fitted with an optional full face shield (clear or smoke).



VL Audio P/N 11-07392.....
No Audio P/N 11-07396.....

Colors available are: Metallic White, Metallic Silver, Red, Blue, Black. Sizes Available: Small, Medium, Large, X-Large, and XX-Large. Please specify color & Size. See sizing chart.

COMTRONICS INSTRUCT-COM SYSTEM - Each includes Two helmets and the Intercom specified.

| Model | Helmet | Intercom | Part No. | Price |
|-------------------------------------|---------|----------------|----------|-------|
| Instruct-Com Pro-Com - Ultra-Com II | Pro-Com | Ultra-Com II | 11-07417 | . |
| Instruct-Com Pro-Com - Pro-Com | Pro-Com | Dual-Com II | 11-07418 | . |
| Instruct-Com Pro-Com - Pro-Com | Pro-Com | Panel Mount II | 11-07423 | . |

Note: Please specify color and size of helmet. See colors available and sizes above

COMTRONICS ULTRA-PRO FULL FACE - Full face fiberglass helmet with a smoke or clear flip-up visor. Fitted with plush liner for comfort. Interior ear phones surround ears with soft foam fitting pads to enhance audio reception. Complete with a pair of 2-inch speakers and an Electret microphone built-in. Colors available are: White, red, Black, or Red & Blue graphics. Sizes Available: Small, Medium, Large, X-Large, and XX-Large.



Please specify color & Size. See sizing chart above.

VL Audio P/N 11-07393.....
No Audio P/N 11-07397.....

GA Electronics Option/Helmet P/N 11-07398.....
COMTRONICS INSTRUCT-COM SYSTEM - Each includes Two helmets and the Intercom specified.

| Model | Helmet | Intercom | Part No. | Price |
|--------------------------------|---------------------|-----------------|----------|-------|
| Instruct-Com FF - Ultra-Com II | Ultra-Pro Full-Face | Ultra-Com II | 11-07420 | . |
| Instruct-Com FF - Dual-Com | Ultra-Pro Full-Face | Dual-Com II | 11-07421 | . |
| Instruct-Com FF - Dual-Com | Ultra-Pro Full-Face | Panel Mount III | 11-07422 | . |

Note: Please specify color and size of helmet. See colors available above, and sizing chart.

ACCESSORIES

| Description | Part No. | Price |
|--|----------|-------|
| Helmet Bag - Fleece Lined | 11-07437 | . |
| Coiled Cord - Helmet/Headset Option | 11-07438 | . |
| Gel/Foam Ear Seal Cushions | 11-07439 | . |
| Face Shield - Clear | 11-07440 | . |
| Face Shield - Smoke | 11-07441 | . |
| Ultra Paq II - Heavy duty pack for the Ultra-Com II intercom | 11-07442 | . |
| Dual Paq II - Heavy duty pack for the Dual-Com II intercom | 11-07443 | . |
| Peak Visor | 11-07444 | . |
| Windscreen - Foam / Dynamic | 11-07445 | . |
| Windscreen - Leather / Dynamic | 11-07446 | . |
| Windscreen - Foam / Electret | 11-07447 | . |
| Windscreen - Leather / Electret | 11-07448 | . |

COMTRONICS INTERFACE CABLE - Interface cables are designed to connect our helmets or intercoms to your transceiver. More than 100 different interface and custom cables available.

| Cable For: | Part No. | Price | Cable For: | Part No. | Price |
|--------------|----------|-------|--------------|----------|-------|
| IC A6/14 | 11-07450 | . | Vertex | 11-07451 | . |
| Sporty Radio | 11-07461 | . | ICA22/A3 | 11-07452 | . |
| IC-A23 | 11-07453 | . | IC-A4 | 11-07454 | . |
| KX 99 | 11-07455 | . | AIR 960 | 11-07456 | . |
| IC-A20 | 11-07457 | . | Telex | 11-07458 | . |
| Narco ST | 11-07459 | . | Radio Shk CB | 11-07460 | . |

AV

HEADSETS



ASA AIRCLASSICS HEADSET WITH NEW FLEX BOOM

HS-1A Headset features: * Earcups of high-density acoustic foam * High fidelity speakers * Electret, noise-canceling microphone * Gold-plated microphone and headphone plugs * High-grade, multi-strand wire * Stereo/mono capability * Large, dual controls * Microphone muff * Adjustable headband with easy thumb screws * Quality foam ear seals and light weight add to overall comfort * Sleek, all-Black design with ASA silver wings silk-screened on each earcup * Sturdy and reliable - yet reasonably priced for maximum value * Lifetime warranty.

HS-1 Headset features: * Lifetime warranty * Stereo / mono capability * Earcups of high-density acoustic foam * High fidelity speakers for clear, natural sound * Electret, noise-canceling microphone reduces background noise and allows clearest voice transmission * Gold-plated mic & headphone plugs ensure best connection & resist corrosion * High-grade, multi-strand wire improves cable life * Large, dual controls for quick, easy volume adjustment of each ear * Microphone muff * Adjustable headband with easy thumb screws eliminates "hot spots" and accommodates eyeglasses and any head size * Quality foam ear seals and light weight add to overall comfort * Sleek, all-Black design with ASA silver wings tastefully silk-screened on each earcup * Sturdy and reliable - yet reasonably priced for maximum value.

ASA Airclassics Headset HS-1A P/N 13-06671.....
 ASA Headset HS-1..... P/N 11-02452.....

SAFETYCELL HEADSET/ CELL PHONE ADAPTER



Allows a pilot to use his cell phone with his avionic headset and listen and transmit radio and phone transmissions simultaneously. SafetyCell is light-weight and portable, maintenance free and installs in seconds. Easy to use; simply dial the phone normally, talk and listen through your headset. Great for primary and emergency communications and many other applications.

The Standard SafetyCell (pictured) utilizes sophisticated solid state circuitry to mix your cell phone and radio signals together and bring them into your headset where you can hear them clearly. It is small enough to fit in the corner of your flight bag and only weighs 6 oz. It does not require any batteries. It is compatible with any cellular telephone that accepts a hands free system (i.e. has a 2.5mm jack on the phone). Some phones do require an adapter to work properly. This unit works without batteries so you must have a VOX style intercom for it to work properly.

NOTE: This will only work in an extremely quiet environment; the Standard SafetyCell is not amplified.

The Amplified SafetyCell is similar to the Standard SafetyCell but power packed with features. It is our most popular model. The amplified SafetyCell filters your radio and cell phone signals, cleans them up and then amplifies your cell phone volume by as much as 600%, depending on your phone/headset combination. Both the radio and the cell phone signals are then brought into the headset for loud and clear communication. This is the unit you will want if your plane is on the noisy side or if you have "mature" ears. This unit does not require any batteries but must be plugged into your VOX mic jack to work properly. It can also be used with the optional battery pack for "out of the plane" use.

With the Battery powered SafetyCell unit is powered by a 9V battery which will last for hundreds of hours. It is housed in a slim custom case that will slip right into the pilot pocket in your airplane. The battery SafetyCell will work with any headset, in or out of the airplane. If you want to use your SafetyCell on your boat, lawn mower, truck or airplane, this is the unit for you. This unit is amplified and is about twice as loud as the amplified SafetyCell. It will work with any cell or satellite phone that has the standard 2.5mm earpiece jack for handsfree use. Phones that do not have this feature will require an adapter. This unit now has a separate input jack for your mp3 player or walkman.

The Bose 6 Pin SafetyCell model is for those that have a built in Bose headset and do not use the Bose battery pack. This model is an amplified SafetyCell that is especially altered for the Bose headset circuitry. No batteries are required. The Bose 6 pin model fits between your headset and the panel to give you seamless intergration of your cell phone and radios. The standard Bose locking connectors are supplied. The Helicopter SafetyCell amplifies the cell phone by an incredible 12db and uses the standard military (NATO Style) single plug interface. This is the loudest SafetyCell we make!

The Helicopter SafetyCell is amplified and will work either in or out of your craft. This unit is powered by a 9V battery so you do not have to have your intercom turned on for it to work. If your batteries go dead, your radios and intercom stay alive. All the batteries do is drive the cellphone.

Safety Cell Standard P/N 11-03003
 Safety Cell (Amplified) P/N 11-01350
 Safety Cell Battery powered P/N 11-03004
 Safety Cell Bose 6 pin P/N 11-03009
 Safety Cell Helicopter w/MP3 P/N 11-03010



AVCOMM AC250 P/NR CHILD HEADSET

Features: • AVCOMM's exclusive P/NR™ audio technology • Perfect for kids or those who need a smaller headset • Simple & affordable design • Larger volume control knob — easy for a child to use • Ultra-lite Neodymium speakers • Lighter weight for added comfort • Higher noise attenuation • Acoustic mic muff included • Full 5 yr factory warranty.

P/N 11-02260.....



AVCOMM AC454 P/NR STEREO HEADSET

Features: • AvComm's exclusive P/NR™ audio technology • Full spectrum stereo response • Each ear cup features an independent volume control • Ultra-lite Neodymium speakers • Built in Push-to-Talk • M-65 mic w/active filtering chip • 4-way adjustable wire boom • Deluxe Comfort package incl. • Full 5yr factory warranty

P/N 11-02261.....



AVCOMM AC747 P/NR CONVERTIBLE HEADSET

Features: • Exclusive P/NR™ technology and "plug and fly" design • Converts from general aviation to helicopter use (both cables included) • Full flex boom • Ultra-lite Neodymium speakers • Each ear cup features an independent volume control • M-65 microphone with active filtering chip • Deluxe Comfort Package incl. • 5yr factory warranty

P/N 11-02262.....

AC900 P/NR CONVERTIBLE HEADSET

Features: • P/NR™ audio technology and full spectrum stereo response • Ultra-lite Neodymium speakers • M-65 microphone with "active filtering" chip • Full flex boom • Built-in push-to-talk • Mono-stereo switch built into the cord • Each ear cup features an independent volume control • Deluxe comfort package with deluxe gel ear seals • Full 5yr warranty.

P/N 11-02263.....



AVCOMM AC-910 DELUXE HEADSET WITH CELL PORT

Now featuring AVCOMM's exclusive P/NR technology, the AC-910 P/NR offers more features in an improved design with cell port... These latest enhancements make the AC-910P/NR the premium choice in the AVCOMM headset lineup. Pilots and passengers everywhere are praising the features and benefits, claiming its comfort, performance, and features surpass anything they've used before. Features: • Patented P/NR audio technology and full spectrum stereo response • Ultra-lite Neodymium speakers • M65 microphone with "active filtering" chip • Full flex boom • Built-in push-to-talk • Mono-stereo switch built into the cord • Each ear cup features an independent volume control • Deluxe comfort package with deluxe gel ear seals

P/N 11-05152.....



AVCOMM AC200 P/NR HEADSET

Features: • Simple & affordable P/NR™ performance • Incredible voice clarity • Higher noise attenuation • Ultra-lite Neodymium speakers • Volume control and easy to adjust stainless steel headband • Acoustic foam ear seals and acoustic mic muff • M-65 microphone with active filtering chip • Lightweight; 13.4 oz. • 5yr. factory warranty.

P/N 11-02259.....

AVCOMM ACCESSORIES

| FLIGHT BAGS | | Part No. | Price |
|---------------------|--|----------|-------|
| P3-A01 | Personal headset bag | 11-02275 | . |
| P3-002 | Duffle style flight bag | 11-02276 | . |
| P3-A02 | Deluxe duffle style flight bag | 11-02277 | . |
| P3-A03 | Deluxe flight bag | 11-02278 | . |
| COMFORT ACCESSORIES | | | |
| P1-005 | Foam ear seals - pair/jumbo | 11-02279 | . |
| P1-006 | Foam ear seals - pair/small | 11-02280 | . |
| P1-007 | Foam ear seals - pair/large | 11-02281 | . |
| P1-009 | Deluxe gel ear seals - pair | 11-02282 | . |
| P1-004 | Deluxe cloth ear covers-black | 11-02283 | . |
| P1-022 | Acoustic mic muff | 11-02284 | . |
| P1-024 | Acoustic mic muff | 11-02285 | . |
| P1-041 | AvComm deluxe head pad | 11-02286 | . |
| PARTS & ADAPTERS | | | |
| P2-001V2 | Deluxe PTT switch | 11-02287 | . |
| P2-004 | Adapter - GA to helicopter | 11-02288 | . |
| P2-005 | Adapter - helicopter to GA | 11-02289 | . |
| P2-009 | Headset extension cord - 5ft. | 11-02290 | . |
| P2-010 | Headset splitter | 11-02291 | . |
| P2-120 | Gen. aviation coil cord - AC-747 | 11-02292 | . |
| P2-121 | Gen. aviation straight cord | 11-02293 | . |
| P4-004 | Non-amplified electret mic | 11-06321 | . |
| P4-009 | Amplified electret mic -fits most wireboom | 11-02295 | . |

LYNX HEADSETS - HELMETS - INTERCOMS



LYNX MICRO SYSTEM

The Micro System is a unique self contained intercom system which is plug and play compatible with any radio. This equipment is extremely popular for use in open cockpit aircraft and is the market leader for use in ultralight, powered parachutes, etc.

MICROSYSTEM PACKAGES

| Part No. | System Package | Package Contents | Price |
|----------|-------------------------------|---|-------|
| 11-05340 | Single Headset Package | One Micro System Headset, Dual Micro System Charger, One Headset Switching Adapter, One Headset Bag | . |
| 11-05341 | Add-on Headset Package | One Micro System Headset, One Headset Coupling Adapter, One Headset Bag | . |
| 11-05342 | Dual Headset Package | Two Micro System Headsets, Dual Micro System Charger, One Headset Switching Adapter, One Headset Coupling Adapter, Two Headset Bags | . |
| 11-05343 | Single Headset-Helmet Package | One Micro System Headset, One Micro System Helmet, Dual Micro System Charger, One Headset Switching Adapter, One Helmet Visor, One Headset Bag, One Helmet Bag | . |
| 11-05344 | Add-on Headset-Helmet Package | One Micro System Headset, One Micro System Helmet, One Headset Coupling Adapter, One Helmet Visor, One Headset Bag, One Helmet Bag | . |
| 11-05345 | Dual Headset-Helmet Package | Two Micro System Headsets, Two Micro System Helmets, Dual Micro System Charger, One Headset Switching Adapter, One Headset Coupling Adapter, Two Helmet Visors, Two Headset Bags, Two Helmet Bags | . |

MICROSYSTEM COMPONENTS

| Part No. | System Equipment | Description | Price |
|----------|------------------------------------|--|-------|
| 11-05346 | Micro System Headset | Self contained intercom headset. | . |
| 11-05350 | Micro System Helmet | EU certified protective helmet. S | . |
| 11-05351 | Micro System Helmet | EU certified protective helmet. M | . |
| 11-05352 | Micro System Helmet | EU certified protective helmet. L | . |
| 11-05353 | Micro System Helmet | EU certified protective helmet. XL | . |
| 11-05354 | Helmet Visor | Attaches to the helmet with screw fixings. | . |
| 11-05364 | Leather Helmet | Soft leather helmet for headset. | . |
| 11-05347 | Headset Coup. Adap. | Connects two headsets together. | . |
| 11-05348 | Headset Switch Adap. | Switch-on a single headset. | . |
| 11-05349 | Dual Charger | Wall charger headsets. | . |
| 11-05356 | Visor Extension | Wind deflector chin guard for visor. | . |
| 11-05357 | Helmet Bag | Cloth bag for a helmet and visor. | . |
| 11-05358 | Headset Bag | Cloth bag to protect a headset. | . |
| 11-05359 | Headset Exten. Lead | Used to extend the headset leads. | . |
| 11-05360 | Panel Exten. Lead | Extension lead with panel socket. | . |
| 11-05361 | Headset Panel Adap. | Converts lead socket into panel. | . |
| 11-05362 | Headset Lead Splitter | Used to connect several headsets together. | . |
| 11-05363 | Headset Lead Comb. | Connects several interface units together. | . |
| 11-05365 | Helmet Goggles | For use with either type of helmet. | . |
| 11-05366 | Double Helmet Bag | Large bag for complete systems. | . |
| 11-07092 | Radio Splitter + Coiled Radio Lead | Connects in-line with a headset and provides connections for an additional device. | . |
| 11-07093 | Coiled Radio Leads | Connecting different radios to portable interface equipment. | . |
| 11-07094 | Straight Radio Leads | Connecting different radios to portable interface equipment. | . |
| 11-07095 | Car Charger | Charges two headsets at the same time. | . |
| 11-07096 | Audio Output Lead | Connecting professional recording equipment to the Micro System | . |

MICROSYSTEM ACCESSORIES

| Part No. | Radio Equipment | Description | Price |
|----------|------------------------------|---|-------|
| 11-05368 | Twin Jack Adapter | Converts the headset to twin jack plugs. | . |
| 11-05369 | Audio Adapter | Connects a Walkman or mobile telephone. | . |
| 11-05370 | Radio Adapter * | Connects one headset to a radio. | . |
| 11-05371 | Radio Interface unit * | Connects one or two headsets to a radio. | . |
| 11-05378 | Radio/Power Interface unit * | Powers two headsets and a radio. For Type B connections only and these radios: ICOM A3, A22, A6, A24 and ICA5, A23 with the CT-44 adapter. Vertex Standard VXA-100, 120, 150, 200, 210 with the CT-44 adapter. All other radios will require special order. | . |
| 11-05372 | Velcro Mount PTT Switch | Velcro fixing PTT Switch. | . |
| 11-05373 | Screw Mount PTT Switch | Screw fixing PTT Switch. | . |
| 11-05374 | PTT Extension Lead | Two Metre extension lead for PTT Switch. | . |
| 11-05375 | PTT Connector and Lead | Special PTT connector with two metre lead. | . |
| 11-05376 | Audio Input/Output Lead | Connects a Walkman to an Audio Adapter or Power Interface. | . |
| 11-05377 | Mobile Telephone Lead * | Connects a mobile telephone to an Audio Adapter. | . |
| 11-05379 | Power Supply Lead | Connects aircraft battery to Power Interface. | . |
| 11-05380 | Power Supply Filter | Used to filter aircraft power supply. | . |
| 11-05381 | Large Power Filter | Used with very noisy power supply. | . |
| 11-05382 | Radio Power Filter | Used to prevent feed-back with Icom A2/A20 Radios. | . |
| 11-05383 | Radio Power Adapter 11V13 | Used to connect Icom A6/A24 radios to a Power Interface. | . |
| 11-05384 | VHF Antenna -Short Flexible | Antenna for use with airband radios. | . |
| 11-05385 | VHF Antenna -1/4 Wave Whip | Antenna for use with airband radios. | . |
| 11-05386 | Antenna Extension Lead | Five metre extension for antenna. | . |
| 11-05387 | Adapter LA-25 | Used to connect Cobra FRS and GMRS radios. | . |
| 11-05388 | Adapter LA-30 | Used to connect Yaesu VXA 100 radios. | . |
| 11-05389 | Adapter LA-44 | Used to connect Yaesu VXA 100/120/150/200/210/220 radios. | . |
| 11-05390 | Adapter CT-44 | Used to connect Icom A5/A6/A23/A24 radios. | . |
| 11-05391 | Adapter CT-91 | Used to connect Vertex Standard radios. | . |
| 11-05392 | Adapter CT-96 | Used to connect Yaesu VXA 300/700 radios. | . |
| 11-05393 | Power Lead Adapters | Used to connect various radios to a Power Interface. | . |

*Please specify the make and model that will be used with this product.

LYNX PILOT SYSTEM



The Pilot System is a range of headsets and helmets for use in light aircraft and helicopters. The main advantage of these products are that they provide an integrated headset and helmet system for use in aircraft which have standard twin jack intercom equipment already installed.

| Part No. | System Equipment | Description | Price |
|----------|-----------------------------|---|-------|
| 11-05394 | Pilot System Headset + Lead | Standard general aviation headset. | . |
| 11-05395 | Twin Jack Headset Lead | Interchangeable lead for Pilot headset. | . |
| 11-05396 | US NATO Headset Lead | Interchangeable lead for Pilot headset. | . |
| 11-05397 | UK NATO (Euro) Headset Lead | Interchangeable lead for Pilot headset. | . |

NOTE: Pilot System uses the same helmet, helmet visor, visor extension, leather helmet, helmet goggles, helmet bag, headset bag, and double helmet bag as the Micro System. Order part numbers as shown for Micro System Components.

LYNX RELAI SYSTEM



The relai System is a range of headsets and helmets for direct connection to hand-portable radios. This equipment also provides the facility to use a helmet with the headset and is used mainly by pilots of single seat aircraft, Paramotor pilots and airport ground crew.

*Please specify the make and model of radio that will be used with the Relai System Headset.

| Part No. | Description | Price |
|----------|--|-------|
| 11-05398 | Relai System Headset + Radio Module. | . |
| 11-05400 | Lynx Avionics Relai System headsets to be used with the following radios: Alinco, Cobra, Delcom, Icom A2/A20/A21, JRC, Maxon, Motorola, Radio Shack, Yaesu, FT-23R, YAESU 2000 | . |
| 11-05401 | Lynx Avionics Relai System headsets to be used with the following radios: ICOM A3/A4/A6/A22/A24 ICOM A5/A23 | . |
| 11-05402 | Allows Lynx Avionics Relai System headsets to be used with the following radios: ICOM A3/A4/A6/A22/A24/ ICOM A5/A23 | . |

NOTE: Relai System uses the same helmet, helmet visor, visor extension, leather helmet, helmet goggles, helmet bag, headset bag, and double helmet bag as the Micro System. Order part numbers as shown for Micro System Components.

LYNX ACCESSORIES

| Part No. | Spare Parts | Description | Price |
|----------|---|--|-------|
| 11-05403 | Ear Seals Type 1 Foam (Two) | Foam ear seals use with all headsets. | . |
| 11-05404 | Ear Seals Type 2 Gel (Two) | Gel ear seals use with all headsets. | . |
| 11-05405 | Microphone Wind Shield Large (37mm Ø) | Foam microphone wind shield for use with all headsets. | . |
| 11-05406 | Microphone Wind Shield - Small (25mm Ø) | Foam microphone wind shield for use with all headsets. | . |

AV

PUSH-TO-TALK - LEATHER HELMETS

PUSH-TO-TALK SWITCHES

TELEX PT-300 PUSH-TO-TALK SWITCH - Attaches to any control wheel. Simple installation, no tools required. Simply wrap hook and pile strap around control wheel. Provides instant communications when used with any headset or Telex flexible boom mike. With 6 ft. coiled cord, jack and plug. P/N PT-300



With purchase of any headset only **\$39.95**

ECONOMY PUSH-TO-TALK SWITCH - Similar to PT-300, this top quality switch is offered at considerable savings. Features gold contacts for durability. Fully guaranteed. P/N 11-12100

With purchase of any headset only **\$8.95**

DAVID CLARK C10-15 PORTABLE PUSH-TO-TALK SWITCH - Compatible with all general aviation headsets, recommended for use with David Clark. Dual plunger switch assures positive contact. High quality features are incorporated in every aspect of this switch. P/N C10-15

PTT-400 PORTABLE PUSH-TO-TALK SWITCH - Designed so that the pilot may push downward to invoke the radio transmit function, instead of the traditional "sideways activation" of typical strap-on PTTs. Secures to the top of the vertical handle of the control yoke with provided velcro tape. Housed at the top of a thin, 1/2" dia. cylindrical enclosure, the soft-touch red push button is rated for 50,000 failure-free operations. 5ft. coiled cable terminates with standard plug & jack. Fast and easy plug-in installation, in virtually any aircraft. P/N 11-02072



SIGTRONICS PUSH-TO-TALK SWITCH - This versatile yoke mounted switch features a sealed aluminum alloy case and mounts in a .380" diameter hole. Button is red thermoplastic. P/N 11-02926



NAV-DATA PUSH-TO-TALK SWITCH - Finally, an affordable Push-to-talk switch. Heavy duty construction. With dual internal contacts. Also equipped with a strap to attach to any yoke control. P/N 13-06089



MICROPHONES

TELEX 66T TRANSISTORIZED MICROPHONE - Dynamic, noise-cancelling, hand-held mic. Built-in amplifier is adjustable for full transmitter output. Meets specifications for aircraft and mobile applications. Impedance 50-600Ω. Wt: 9oz. Complete with 5 ft. coiled cord and hanger bracket. Also available with right-angle plug - specify model 66TRA. P/N 66T



Right angle plug P/N 66TRA

TELEX 100TRA DYNAMIC MICROPHONE - Dynamic, noise-cancelling, amplified, handheld mike. Push-to-talk switch is in front. Handsome beige and black with walnut grain trim. Impedance 50-600Ω. Wt. 9 oz. Includes 5ft. coiled cord with right-angle plug and hanger bracket. P/N 100TRA



TELEX 38T ELECTRET MICROPHONE - A state-of-the-art high quality noise cancelling microphone designed as a direct replacement for the RS-38 series microphones. Hanger bracket not included. P/N 38T



TELEX 500T ELECTRET MICROPHONE - Amplified hand-held electret mike features outstanding noise cancellation. Impedance 50-600 Ω (ohms). Weight: 6.5oz. Complete with 5ft. coiled cord, plug and hanger bracket. P/N 500T



DAVID CLARK M-4 MICROPHONE - The M-4 electret microphone is featured on the H10-40 and H10-46 headsets. Available separately, as are all David Clark mics. P/N 11-03908



DAVID CLARK M-1/DC AMPLIFIED DYNAMIC HEADSET MIC - The M-1/DC Amplified Dynamic headset microphone is a noise canceling type designed to operate in place of carbon and amplified dynamic microphones. P/N 11-09230



DAVID CLARK M-1A AMPLIFIED DYNAMIC HEADSET MIC - The M-1A Amplified Dynamic headset microphone is a noise canceling type designed to operate in place of carbon and amplified dynamic mics. P/N 11-09225



CALL FOR SPECIAL PRICES!
HEADSET MICROPHONE A1060 BLACK - Proper shielding improves noise immunity in aircraft with heated windshields, power inverters, and other sources of electrical noise. Fits all C40 Model Headsets (David Clark, Softcomm, Telex, etc.) A1060 fits all C40 Models P/N 11-04838



Microphone windscreens covers all headsets. P/N 11-04840

LEATHER FLYING HELMETS

MODEL 711

GOATSKIN HELMET FOR DAVID CLARK HEADSETS

Black (Small) P/N 11-10505-S.....
Black (Medium) P/N 11-10505-M.....
Black (Large) P/N 11-10505-L.....
Black (X-Large) P/N 11-10505-1.....
Brown (Small) P/N 11-10510-S.....
Brown (Medium) P/N 11-10510-M.....
Brown (Large) P/N 11-10510-L.....
Brown (X-Large) P/N 11-10510-1.....



MODEL 711K

COTTON CANVAS HELMET FOR DAVID CLARK HEADSETS

Brown with Leather Ear Cut-Outs
Small P/N 11-10525-S.....
Medium P/N 11-10525-M.....
Large P/N 11-10525-L.....



MODEL 711L

FLEECE LINED GOATSKIN HELMET FOR DAVID CLARK HEADSETS

Black (Small) P/N 11-10515-S.....
Black (Medium) P/N 11-10515-M.....
Black (Large) P/N 11-10515-L.....
Black (X-Large) P/N 11-10515-1.....
Brown (Small) P/N 11-10520-S.....
Brown (Medium) P/N 11-10520-M.....
Brown (Large) P/N 11-10520-L.....
Brown (X-Large) P/N 11-10520-1.....



MODEL 711M

MESH FOR DAVID CLARK

Small P/N 11-10555-S.....
Medium P/N 11-10555-M.....
Large P/N 11-10555-L.....
X-Large P/N 11-10555-1.....



MODEL 712

TRADITIONAL GOATSKIN FLYING HELMET

Black (Small) P/N 11-10530-S.....
Black (Medium) P/N 11-10530-M.....
Black (Large) P/N 11-10530-L.....
Black (X-Large) P/N 11-10530-1.....
Brown (Small) P/N 11-10535-S.....
Brown (Medium) P/N 11-10535-M.....
Brown (Large) P/N 11-10535-L.....
Brown (X-Large) P/N 11-10535-1.....



MODEL 712C

TRADITIONAL COTTON CANVAS FLYING HELMET

Small P/N 11-10550-S.....
Medium P/N 11-10550-M.....
Large P/N 11-10550-L.....
X-Large P/N 11-10550-1.....



MODEL 712L

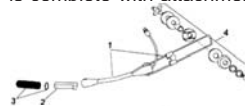
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Black (Medium) P/N 11-10540-M.....
Black (Large) P/N 11-10540-L.....
Black (X-Large) P/N 11-10540-1.....
Brown (Small) P/N 11-10545-S.....
Brown (Medium) P/N 11-10545-M.....
Brown (Large) P/N 11-10545-L.....
Brown (X-Large) P/N 11-10545-1.....



Note: Specify size by completing part no. with -S, -M, -L, or -1 for XL. Small (21"-22") Med. (22"-23") Large (23"-24") XL(24"-25")

MIC/BOOM KITS FOR AVIATION HELMETS

Now available for aviation helmets the David Clark patented combination flex/wire boom allow for easy, perfect microphone positioning. Each kit is complete with attachment assembly, microphone & cover, and boom with 16" cord for installation.




M-7A mic and flex/boom ass'y Kit for Aviation helmets (High impedance / Civilian radio systems. Model 40688G-24 P/N 11-00866.....





M-87/A1C mic & flex/boom ass'y. Kit for Aviation helmets (Low impedance/military radio systems. Model 40688G-23 P/N 11-00867.....

HEADSET ACCESSORIES

DAVID CLARK HEADSET ACCESSORIES

| Description | Part No. | Price |
|---|----------|-------|
|  Comfort covers – David Clark Style (<i>sold each</i>) | 11-04793 | . |
|  Mic Muff -Protects mic on all David Clark and standard size headset mics. This is not a foam muff. | 11-04788 | . |
| Gel Earseals - Provide optimum comfort and fit all David Clark Headsets. | 11-04820 | . |
|  David Clark Undercut Comfort Gel Ear Seals | 11-01782 | . |
|  Foam-Filled Ear Cushions - Soft and durable covers with an all polyurethane core. Fits all David Clark headsets. | 11-04787 | . |
|  Foam Headband - A light, foam filled headband which snaps on all David Clark Headsets for great comfort. | 11-04791 | . |
| H20-10 Gel Ear Seals | 11-01828 | . |
| Headset Bag - Nylon Carry bag. Black on Black. | 11-00642 | . |
|  DC M-4 Mic Muff | 11-04819 | . |
|  DC Mic Muff - Fits standard electret mic. Foam mic muff w/O-ring. | 11-09201 | . |
| Stop Gap - These eyeglass adapters place a soft coupler between the side of the head and the ear seal to prevent any noise leak and assure a comfortable fit. | 11-04785 | . |

 **STRAIGHT CORD (5 FT) WITH PJ-068 & PJ-05 40133G-04** - Increases the versatility of the H10-60 headset. Plugs into the dome connector.
P/N 11-05948.....

 **COIL CORD (5 FOOT) WITH PJ-068 & PJ-055 PLUGS 40133G-05** - Increases the versatility of the H10-60 headset. Plugs into the dome connector. P/N 11-05949.....

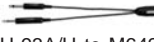
 **COIL CORD (5 FOOT) WITH U-174/U PLUG 40133G-06** - Increases the versatility of the H10-60 headset. Plugs into the dome connector. P/N 11-05950.....

 **PLUG ADAPTER 18253G-01** - Converts PJ-068 & PJ-055 to U-75/U P/N 11-05952.....

 **PLUG ADAPTER 18253G-02 - 18253G-02** - Converts U-75/U to M642/5-1 (PJ068) and M642/4-1 (PJ055) P/N 11-05953.....

 **PLUG ADAPTER 18253G-03** - Converts U-75/U to U-174/U P/N 11-05954.....

 **PLUG ADAPTER 18253G-04 18253G-04** - Converts U-174/U or U-93A/U to U-75/U P/N 11-05955.....

 **PLUG ADAPTER 18253G-05** - Converts U-174/U or U-93A/U to M642/5-1 (PJ068) and M642/4 (PJ055). Also converts the Helicopter Single Plug to a Dual Plug configuration for Fixed Wing flying. General Aviation applications only. P/N 11-05956.....

 **PLUG ADAPTER 18253G-06** - Converts PJ-068 & PJ-055 to U-174/U. Also converts the Fixed Wing Dual Plug configuration to a Single Plug for Helicopter flying. General Aviation Applications only. P/N 11-05957.....

 **PLUG ADAPTER 18253G-17** - Converts NATO to PJ-068 & PJ-055 P/N 11-05958.....

 **PLUG ADAPTER 18253G-16** - Converts PJ-068 & PJ-055 to NATO P/N 11-05959.....

 **PLUG ADAPTER 18253G-18** - Converts U-174/U to NATO P/N 11-05960.....

 **PLUG ADAPTER 18253G-19** - Converts NATO to U-174/U P/N 11-05961.....

 **CLOTH HELMET** - To accommodate David Clark headsets.
Size 7-1/4 P/N 11-04783
Size 7-1/2 P/N 11-04784

AVIATION HEADSET PORTABLE MUSIC ADAPTER



The PSA0017C addresses the problem of attempting to use an aviation headset to listen to a portable music device while connected to the aircraft intercom. The 600 ohm aviation headset requires more power to drive than low-power portable music devices are capable of delivering. Furthermore, music at levels high enough to overcome the high-noise environments of the general aviation cockpit can easily drown out other intercom audio. The PSA0017C resolves both of these issues easily. Implementation of dual low-noise amplifier stages clearly boosts music signals to levels expected by general aviation headsets, while providing enough power to clearly hear the entire range of audio frequencies without distortion. Active auto mute silences the music whenever activity is detected on the intercom, thus ensuring that intercom activity and ATC communication is never missed. The included 9 volt battery provides 25-30 hours of useful battery life. The low battery indicator provides advance indication of battery expiration. P/N 11-06246.....

AIRCRAFT INTERCOM RECORDING CABLE



The IRC0014 series intercom recording cables addresses the problem of attempting to use a standard microphone interface to record a signal intended to drive a 600 ohm aviation headset. The integrated electronic circuitry steps the signal down to levels expected by the recording device, preventing oversaturation of the recording device and thereby eliminating any distortion. Additional protection is provided via AC coupling, ensuring that only the audio signal is passed while DC power remains isolated to the respective equipment. At low levels, DC power interference can reveal itself as a high-pitched squeal in the recorded audio. If enough voltage is present, irreparable equipment damage can occur. Professional grade metallic connectors are utilized in the make-up of the IRC0017S, providing additional electronic noise shielding not available from low cost plastic parts, ensuring the cleanest low-noise recording possible. P/N 11-06247.....

IPOD / MP3 MUSIC ADAPTER



This adapter works with your existing intercom by pumping your music into any available mic jack, allowing it to be distributed through the intercom to everyone wearing a headset. Plug one end into the aircraft's mic jack and the other into your media player's headphone jack. * Compatible with ipod, iphone, mp3, CD, laptops, and most other portable media players * Music in your headset without costly upgrades * Listen to music through the aircraft's speaker during pre-flight * Plugs into standard mic jack * Just Plug and Play! No more wearing uncomfortable in-ear headphones under your aviation headset. No need for an expensive new intercom or new headset. This will work in any intercom system with an available mic jack. Maintain the comfort and quiet of you current headset; just add your favorite music! Also works great in many airliners. P/N 11-07541.....

HEADSET CUSHION



For headsets with single 5/8" wide headband springs (Aviall, David Clark, etc.) and Telex ProAir 2000E and ANR-type headsets. P/N 11-02858.....

MICROPHONE WINDSCREENS



PA-10L - All dynamic microphones; examples-David Clark 10-30-S10-36, 10-56. Pilot hdsts with the same nomenclature. PN 11-05807.....

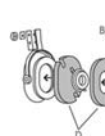
PA-10M - Flightcom: 4DX, 5DX. Skycom H-40A, h-80A. Sigtronics: S-68, S-20. Peltor LE Sport, 7004, 7104. Telex: Stratus, Airman 750, ANR 150. David Clark: H 10-40, H-10-80, 10-20, 10-21, 10-26, 10-6-, 13.4.Pilot Hdsts: P-51, 11-40, all anrs. PN 11-05808.....



PA-10S - Flightcom Denali. Sigtronics S-58. Peltor 7000 Pro Gt. Bose ANRs. PN 11-05809.....

M-87 - Any headsets using M-87 Microphones (usually the mics in helmets such as Gentex or Gallet) PN 11-05810

HEADSET UPGRADE KITS



For considerably less than the cost of a new headset, you can upgrade the headset you already own to improve comfort and performance. You'll experience improved intelligibility and transmission clarity, and you'll enjoy pain-free, cool, dry ears. Comes with: A-SoftTop® Headset Cushion, B- SoftSeal® Ear Cushions, C- SoftSkin® Ear Seal Covers, D- HushKit® Passive Ear Cup Noise Attenuation Kit, & E- MicMuff® Microphone Cover.
David Clark Upgrade Kit.....P/N 11-07808
Bose Headset Upgrade Kit.....P/N 11-06309

AV

HEADSET ACCESSORIES

OREGON AERO HEADSET ACCESSORIES

SOFTTOP™ HEADSET CUSHIONS



Eliminates top-of head pressure. 100% plush sheepskin wool. Keeps head cool or warm. Moisture-proof, self-wicking action. Flexible leather backing. Customized mount of either rubber extrusion or nylon hook/loop wrap.

- Air Crew SoftTop Headset Cushion P/N 11-10900
- Air Crew with D-ring P/N 11-10901
- Telex Airman 750 SoftTop Headset Cushion.. P/N 11-10902
- Peltor, Flight Com 4.2, Sennheiser SoftTop Headset Cushion
P/N 11-10903.....
- David Clark/Clones, AudioCom SoftTop Headset Cushion
P/N 11-10905
- D C/Clones, AudioCom w/D-ring..... P/N 11-10906
- Navy Type Cranial SoftTop Headset Cushion P/N 11-10907
- Navy Type Cranial with D-ring P/N 11-10908
- B Type ANR SoftTop Headset Cushion P/N 11-10909
- B Type ANR with D-ring P/N 11-10910
- Cranial SoftTop Headset Cushion David Clark/Clones, 5/8" wide head
band used in cloth/leather flying helmet..... P/N 11-10911
- Cranial with D-ring..... P/N 11-10912
- Telex 4000/Astrocom, Old Style Military SoftTop Headset Cushion
P/N 11-10913.....
- Telex 4000 with D-ring P/N 11-10914
- SoftTop Headset Cushion for Headsets OTHER than those listed
above..... P/N 11-10915
- With D-ring..... P/N 11-10916

SOFTSEAL™ EAR CUSHIONS



Conforms to your head. 200-300% more volume for total comfort. Temperature-sensitive Confor foam core. Smooth, soft, washable UltraLeather covering over foam core. Great with eyewear or earrings. Eliminate ear pressure. Self-wicking reduces perspiration build-up. Attaches with flange, adhesive ring, or snap-on mount, depending on headset type.

Soft skin covers keep your ears even drier and cooler than with Softseal alone. Especially helpful in hot, humid climates. Designed to slip over our SoftSeal ear cushions for added comfort and product life. Fit loose, not tight like a drum. Choose for 3/4" or 1-1/8" thick SoftSeals.

- 1-1/8" thick David Clark/Clones, Pilot PA11-30/11-40OHNE
SoftSeal Ear Cushions P/N 11-10917.....
- 3/4" thick Telex Airman 750 SoftSeal Ear Cushions (includes HushKit
Passive Earcup Noise Attenuation Foam) P/N 11-10918.....
- 3/4" thick Pilot 11-90 SoftSeal Ear Cushions w/snap ring attachment
P/N 11-10919.....
- 3/4" thick SoftSeal Ear Cushions for use w/David Clark style in cloth/
leather flying helmet, Telex ANR P/N 11-10920.....
- 3/4" thick Peltor, Sennheiser SoftSeal Ear Cushions
P/N 11-10921.....
- 3/4" B Type ANR Headset SoftSeal Ear Cushions
P/N 11-10922.....
- 1-1/8" thick Telex Pro Air 2000 SoftSeal Ear Cushions
P/N 11-10923.....
- 1-1/8" thick AudioCom, Hush A Com, Sigtronics/Telex Square
SoftSeal Ear Cushions P/N 11-10924.....
- Pilot 17-76 & Pilot 17-79 SoftSeal Ear Cushions
P/N 11-10925.....
- FlightCom Eclipse SoftSeal Ear Cushions..... P/N 11-10926.....
- Pilot PA7000 SoftSeal Ear Cushions P/N 11-10927.....
- Com-Air 5000 SoftSeal Ear Cushions..... P/N 11-10928.....

ANR headsets must use 3/4" thick softseal ear cushion.
SOFTSKIN™ EAR SEAL COVERS

- SoftSkin Ear Seal Covers for 3/4" thick SoftSeal Ear Cushions
P/N 11-10929
- SoftSkin Ear Seal Covers for 1-1/8" thick SoftSeal Ear Cushions
P/N 11-10930

HEADSET MICMUFF™ MICROPHONE COVERS



Eliminates cockpit noise from radios and intercom. Greatly improves intelligibility. The bigger the ambient noise problem (open cockpit, warbirds, or other very noisy aircraft), the more dramatic the improvement in intercom communication and transmission clarity. MicMuff™ functions as an acoustic baffle and must be used on all headsets installed in the communications system. Smooth, soft, washable UltraLeather covering over foam windscreen. Adaptable to all mics, electret or dynamic. Doesn't blow away.

- Amplified Dynamic MicMuff Mic Cover P/N 11-10937
- Electret MicMuff Mic Cover P/N 11-10938
- Military Dynamic (M-87) MicMuff Mic Cover P/N 11-10939

EVERY HEADSET MICROPHONE USED IN AN INTERCOM SYSTEM MUST HAVE THE MICMUFF INSTALLED IN ORDER FOR THE MICMUFF TO BE EFFECTIVE! THE ONLY EXCEPTION IS PUSH-TO-TALK INTERCOM SYSTEMS.

OREGON AERO HEADSET UPGRADE KITS

PASSIVE NOISE ATTENUATION COMPONENTS PERFORM BETTER THAN ANR HEADSETS

Headset Upgrade Testing-The headset upgraded with Oregon Aero components performed better than ANR headsets in tests conducted at a U.S. Government laboratory!

In the mid-range frequency levels of 700-7000 hz, the Oregon Aero upgraded headset performed better than the best-performance ANR headset, and in fact the Oregon Aero numbers significantly and consistently dip BELOW the DESIRED 85db level! This is the sound frequency range that contributes the most to hearing damage and loss.



FOR BOSE® AVIATION HEADSET X™ 83006BX -

Includes:

- SoftSkin® Ear Seal Covers
- MicMuff® Microphone Cover
- SoftTop® Headset Cushion
- SoftSeal® Ear Cushions

PN 11-06309.....

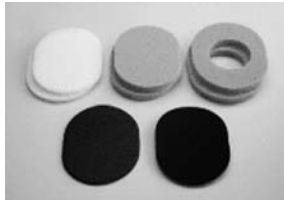
MILITARY HEADSET UPGRADE KIT FOR DAVID CLARK TYPE HEAD- SETS -

Packaged to Military Specs
8300DM

Includes:

- SoftSkin® Ear Seal Covers
- MicMuff® Microphone Cover
- HushKit® Passive Ear Cup
- Noise Attenuation Kit
- SoftTop® Ear Cushions

PN 11-06310



HELMET HUSHKIT® PASSIVE EAR CUP NOISE ATTENUATION KIT -

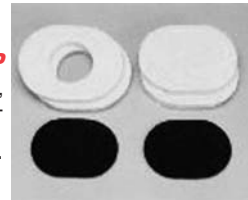
92056 For HGU-56P

PN 11-06312

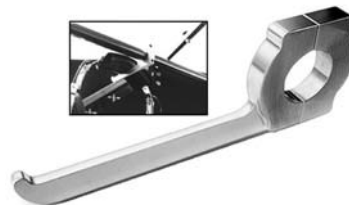
HELMET HUSHKIT® PASSIVE EAR CUP NOISE ATTENUATION KIT -

For SPH-4®*, SPH-4B®*, SPH-5®* or HGU (Sonex) helmets. 92050

PN 11-06311



J-HOOK HEADSET HANGER



The J-Hook Aviation Headset Hanger is designed to be installed on one of the tube crossmembers in the cockpit of aircraft with exposed tubing upon which to hang your headsets when not in flight. These types of aircraft include Huskies, Cubs, Citabrias, etc. This makes entering or exiting the aircraft much easier and eliminates the chance of damaging your headset or the interior of the aircraft. This product has been machined from 6061-T6 aluminum with stainless steel hardware for a lifetime of service. Mounts on 3/4" tubing

J-Hook Headset Hanger 3/4".....P/N 11-02409

J-Hook Headset Hanger 7/8".....P/N 11-02410

AVIONICS ACCESSORIES

MIC & PHONE JACK HOUSINGS



2 HOLE SURFACE MOUNTED MIC & PHONE JACK HOUSING - If panel space is scarce or you'd prefer to locate your headphone jacks in a more convenient spot, this housing is perfect. Mounts flush to any flat surface. Heat-treated aluminum with a powder coat finish. Jacks not included. (See electrical section).

| Description | Part No. | Price |
|-------------------------|----------|-------|
| Surface Mount, Black | 10-01595 | . |
| Surface Mount, Beige | 11-01120 | . |
| Surface Mount, Aluminum | 11-01130 | . |



2 HOLE RECESSED MIC & PHONE JACK HOUSINGS - This versatile mic and phone jack housing has a powder coat finish. With this recessed housing in place in a side panel, your jacks are out of the way. Comes with a clamp to hold housing securely in place. Jacks not included. Size: 3.0" x 3.75" x 1".

| Description | Part No. | Price |
|--------------------------------|----------|-------|
| Recessed Mount, Black | 11-01140 | . |
| Recessed Flush Mount, Beige | 11-01150 | . |
| Recessed Flush Mount, Aluminum | 11-01160 | . |



4 HOLE SURFACE MOUNTED MIC & PHONE JACK HOUSING - If panel space is scarce or you'd prefer to locate your headphone jacks in a more convenient spot, this housing is perfect. Mounts flush to any flat surface. Heat-treated aluminum with a powder coat finish. Jacks not included. (See electrical section).

| Description | Part No. | Price |
|---------------------------------|----------|-------|
| Black wrinkle finish | 11-01195 | . |
| Tan wrinkle finish (Pictured) | 11-00365 | . |
| Aluminum (unpainted with holes) | 11-00366 | . |
| Aluminum (unpainted NO holes) | 11-00367 | . |

4 HOLE RECESSED MIC & PHONE JACK HOUSINGS



Modified to allow plugs to enter from the opposite side, being recessed they are out of the way. When jacks are plugged in they are flush with the edge of the housing, a real custom look with this style of housing. Made of aluminum, with a powder coat finish. Comes bagged with housing, clamp, mounting screw, mic & phone self stick decals. Dims: 4"W x 5"L x 1.06"H; Cutout req.: 3.25"W x 4.43"L

| Description | Part Number | Price |
|---------------------------------|-------------|-------|
| Black wrinkle finish | 11-01939 | . |
| Tan wrinkle finish | 11-01940 | . |
| Aluminum (unpainted with holes) | 11-01941 | . |

MIC / PHONE JACK MOUNTING BRACKET

Mic & Phone Jack Bracket 90 degree under the dash. Also for switches, fuses etc. . A sturdy and attractive mount, sides are formed to hide wires, .063 thick heat-treated aluminum. Black wrinkle powder coat finish. Five styles to choose from for most any installation. Easily installed.



MIC OR PHONE JACK MOUNT 1 HOLE - 1) Hole for either Mic or Phone Mounting Bracket Dimensions- 1.5w x 1.5h x 1.0 deep. Black wrinkle powder coat finish.
P/N 11-01170



MIC OR PHONE JACK MOUNT 2 HOLE - (2) Hole Mic & Phone Mounting Bracket Dimensions- 2.3w x 1.5h x 1.0 deep. Black wrinkle powder coat finish
P/N 11-01180.....



MIC OR PHONE JACK MOUNT VERTICAL 4 HOLE - Bracket- (4) Hole Vertical for Mic & Phone Dimensions- 2.3w x 2.5h x 1.0 deep.
P/N 11-01190.....



MIC OR PHONE JACK MOUNT HORIZONTAL 4 HOLE - Bracket- (4) hole horizontal for either Mic or Phone Dimensions- 4.5w x 1.5h x 1.0 deep.
P/N 11-01942.....

PLUGS & PANEL JACKS



PLUGS -

Made to specification MIL-P-642A. Molded, cord mounting type. Screw-on shell
Headphone Plug, 2-Circuit PL-055B Takes JJ-034 mating jack
P/N 11-04065

Microphone Plug, 3-Circuit PL-068 Takes JJ-033 mating jack
P/N 11-03918



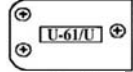
PANEL JACKS - Made to specification MIL-J-541. Contact springs are of special alloys for long life. Insulation is high dielectric strength phenolic. Tinned terminal lugs for easy soldering. Short frame. Mounts by 3/8-32 threaded

bushing and nut. Open circuit until plug inserted.
Microphone Jack, 3-Circuit JJ-033..... P/N 11-05995

Headphone Jack, 2-Circuit JJ-034..... P/N 11-03907

Insulated Flat Washer (SWC S1028) Tan.... P/N 04-00975..... ea.

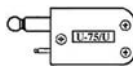
Insulated Flat Washer (SWC S1029) Black. P/N 04-00976..... ea.



U-61/U JACK - (MIL-C22442/4-1) (NSN 5935-00-689-6052) Mates with U-75/U.
P/N 11-00696



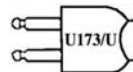
U-172/U MICROPHONE JACK -(NSN 5935-00-665-7599), Mates w/U-173/U, PJ-292, or MP-101. 2-conductor jack w/nickel-plated beryllium copper contacts assembled into nylon body. P/N 11-00697



U-75/U PLUG - (MIL-C-22442/5-1) Mates with U-61/U.
P/N 11-00698



4-CONDUCTOR PLUG - (TP-120, U-174/U, U-93A/U, MIL-C9177/1B) (NSN 5935-00-642-0626) Mates with U-92/U, TJ-120 & TJ-102. Jack, and TJ-101 Jack. 1-piece nickel plated brass contacts are integrally molded into plastic body.
P/N 11-00699



2-PIN MICROPHONE PLUG - (U-173/U, MP-101) (NSN 5935-00-888-5351) Mates with U-172/U, U-179/U, MP-101, & JJ-055. Nickel-plated beryllium copper contacts assemble into nylon body.
P/N 11-00701



.206" COMMERCIAL MIC PLUG - (S-267) (PJ-068) Mates w/JJ-033, S-12B, CES830. Black plastic handle with .206" dia. chrome plug. 3 conductors. solder plug and cable clamp.
P/N 11-00702



.25" COMMERCIAL MONO PHONE PLUG - (S-250) Mono (PJ055B) Mates w/JJ-034, CE80. Black plastic handle w/ .25" dia. chrome plug. 2 conductors. solder plug & cable clamp.
P/N 11-00703



.25" COMMERCIAL STEREO PHONE PLUG - (S-250; PJ055B) Mates with JJ-034 or CE80. Black plastic handle with .25" dia. chrome plug. 3 conductor. solder plug & cable clamp.
P/N 11-00704



1/8" STEREO PLUG (3.5MM)- Black plastic handle w/ solder terminals & cable clamp.
P/N 11-00705

TRIPLE HELICOPTER ADAPTER W/7' CABLE

TJT-120 & TJT-102 type Jacks) This adapter allows for 3 headset to share one 4 conductor panel mount in jack. Backing of converter box comes with commercial grade Velcro adhesive tape for easy attachment to any surface.
P/N 11-02752

.25" HEADSET PLUG REDUCER

This adapter reduces a single .25 headset plug to a single .206 headset plug. 5" in length.(JB-34) P/N 11-02748.....



.206 MICROPHONE PLUG REDUCER

This adapter reduces a single .206 microphone plug to a 3.5mm mini plug. 5" in length.(JB-35) P/N 11-02749.....



HEADSET TAPE RECORDER ADAPTER

This adapter allows you to record conversations through your headset into a portable tape recorder. 40" in length. Great for student pilots recording lessons.
(JB-40) P/N 11-02750.....



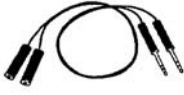
AV

HEADSET ADAPTERS AND EXTENSIONS

HEADSET EXTENSIONS



HEADPHONE EXTENSION – This heavy duty extension allows a .25" phone jack to be extended by 5ft. Great for customizing an aircraft with rear passenger headphone (listen only) capabilities.
P/N 11-10620



HEADSET EXTENSION – This heavy duty extension allows a general aviation headset using PJ-068 & PJ-055B or equivalent plugs to be extended by 5ft. Ideal when aircraft radio or intercom does not allow headset cords to reach comfortably.
P/N 11-10640



MICROPHONE EXTENSION – This heavy duty extension allows a .206" mic jack to be extended by 5ft. Great for customizing an aircraft with rear passenger microphone jacks.
P/N 11-10625



HELICOPTER HEADSET EXTENSION – Extends a headset that uses a U-174/U, U-93A/U or equivalent plug. 5 ft. in length. P/N 11-00688



U-75/U EXTENSION – Extends a headset which uses U-75/U plug 5 ft. in length.
P/N 11-00689

"Y" ADAPTERS



DUAL HEADSET Y ADAPTER – This heavy duty adapter converts one .25" phone jack into two. Perfect for those who want to connect two headphones to one a/c radio headphone jack. Can be used with stereo or mono headphones and jacks. Length: 2 ft. P/N 11-10610



DOUBLE HEADSET Y ADAPTER – This heavy duty adapter converts one set of a/c radio panel jacks, (.206" mic and .25" phone) into two sets. Can be used with any general aviation headset using PJ-068 & PJ-055B or equivalent plugs.
P/N 11-10635



DUAL MICROPHONE Y ADAPTER – This heavy duty adapter converts one .206" aircraft radio microphone jack into two. Perfect for those who want to add another push-to-talk position to the radio. Length: 2 ft. P/N 11-10615



TRIPLE HEADSET ADAPTER – This high quality adapter converts a set of radio or intercom mic and phone jacks into 3 sets. Sets are one, three and five feet respectively. Great for adding a pair of headset to the back of the aircraft without requiring major installation. P/N 11-00680



DUAL HELICOPTER Y HEADSET ADAPTER – This adapter allow a single helicopter radio or intercom jack (TJ-120, TJT-120, TJT-102) to be used by two headsets. Length: 1 ft. Great for adding an additional space for headset without costly installation.
P/N 11-00681

PATCHCORD COCKPIT VOICE RECORDER



PatchCord has electronic circuitry specifically designed to enable direct hook-up between a 600Ω headphone jack and the mic jack of tape recorders and / or most video cameras. The PatchCord

has been designed to enable you to record on any tape recorder or video camera, both sides of all your radio communications and all mic equipped persons in the aircraft when used with intercom. If not equipped with intercom, PatchCord enables you to record both sides of all your radio communications if aircraft radio has sidetone. The most advantageous way to use PatchCord is with the intercom and voice actuated tape recorder.

Student Pilots: • Great learning aid • Playback of previously recorded tape enables students to review the entire flight lesson, whether it be ATC clearances or flight instruction • Great study aid for the FAA written test • Save recorded tapes of flight lessons as a memento of your student pilot experiences.

Other Pilots: • Assists in studying for additional FAA ratings • Back up your memory and your notations by recording your IFR clearances • Record in-flight ATIS and weather reports, enabling you to play back and review in detail that part of briefing you need to know • Use tapes to improve your radio proficiency • Have your own tapes if you have a problem with ATC.
P/N 13-01456

AIRCRAFT/HELICOPTER CONVERSION ADAPTERS



.206" JACK Y ADAPTER – This adapter converts a headset with a single .206" plug into one with 2 (standard .206 mic & .25" phone plugs). Length: 9".
P/N 11-00682



.25" JACK Y ADAPTER – This adapter converts a headset with a single .25" plug into 1 with 2 (standard .206" mic & .25" phone plugs). Length: 9".
P/N 11-00683



.206" PLUG Y ADAPTER – This adapter converts a headset w/ dual .206 mic & .25" phone plugs into one plug (.206") headset. Length: 9".
P/N 11-00684



.25" PLUG Y ADAPTER – This adapter converts a headset w/ dual .206 mic & .25" phone plugs into one plug (.25") headset. Length: 9".
P/N 11-00685



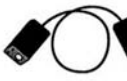
STANDARD (MIC/PHONE) TO HELICOPTER ADAPTER – This adapter converts a G.A. headset that has both mic and phone plug into one that uses a helicopter (U-174/U, U-93A/U or equiv.) plug. Length: 9". P/N 11-10630



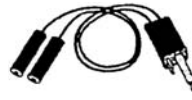
HELICOPTER TO STANDARD (MIC/PHONE) ADAPTER – This adapter converts a helicopter (U-174/U or U-93A/U) headset that has one plug into a G.A. headset that has both mic and phone plug. Length: 9". P/N 11-10650



U-174/U OR U-93A HEADSET CONVERTER – This adapter converts a headset U-75/U plug to a U-174/U or U-93A/U type plug. Length: 9".
P/N 11-00686



U-75/U HEADSET CONVERTER ADAPTER – This adapter converts a headset which has a U-174/U, U-93A/U or equivalent type plug into one which uses a U-75/U plug. Length: 9".
P/N 11-00687



U-75/U HEADSET CONVERTER ADAPTER – This adapter converts a headset which has a .206" mic and .25" phone plug into one which uses a U-75/U plug. Length: 9". P/N 11-00690



U-75/U TO STANDARD PLUGS CONVERTER – This adapter converts a headset which has a U-75/U or equivalent plug into a standard .206" mic & .25" phone plug. Length: 9".
P/N 11-00691

SPECIALTY ADAPTERS/IMPEDANCE CONVERTERS



VIDEO RECORDER ADAPTER GA/HELICOPTER – This product allow you to interface your video recorder with the aircraft intercom system. Great for creating your own aerial videos without excess cabin noise. Records sounds transmitted through the intercom system only. Std Version
P/N 11-00692

Helicopter Version P/N 11-00693



CD PLAYER GENERAL AVIATION ADAPTER – This product allow you to interface your portable CD Player with a general aviation headset.
P/N 11-00694



LOW TO HIGH IMPEDANCE ADAPTER – This adapter converts a low impedance mic & phone military headset into higher impedance for use in general aviation aircraft. It also converts the U-174/U plug on the military headset into .206" & .25" plugs used in general aviation. Length: 3 ft.
Standard Version P/N 11-10645

Helicopter Version P/N 11-00706

HEADSET ACCESSORIES — ADAPTERS



LIQUID FOAM EAR SEALS

Replacement ear seals for DC40 style headsets. Great comfortable replacement ear seals with foam and liquid interior.
P/N 11-02737



FOAM EAR SEALS

Replacement ear seals for DC40 style headsets. All foam interior with comfortable exterior. These superb ear seals will make you think twice before taking your headset off
P/N 11-02738



IPOD/MP3 ADAPTER

This adapter can be used to connect your IPOD or MP3 player directly into your intercom system. It comes in a 5' length. P/N 11-03510



AIRBUS ADAPTER

This adapter will allow you to use your general aviation headset with a European Airbus intercom communication system. P/N 11-03516

BLUETOOTH CELLPHONE / MUSIC ADAPTER

Bluetooth (wireless) technology allows the use of Bluetooth cellphone and iPod / MP3 player with any General Aviation headset.



GA Version P/N 11-06553 **\$249.00**

Helicopter Version P/N 11-06613

Bose Version P/N 11-06614

PILOT USA ADAPTERS

| Description | Part No. | Price |
|--|----------|-------|
| PA-50 Push-to-talk use with or without Intercom | 11-07712 | . |
| PA-70S Headphone Extension (5ft) | 11-06517 | . |
| PA-71 Microphone Extension (5ft) | 11-10625 | . |
| PA-72S Dual Headset Adapter | 11-06518 | . |
| PA-72H Dual Helicopter Headset Adapter | 11-03562 | . |
| PA-73S Dual Headphone Y Adapter | 11-06519 | . |
| PA-74 Dual Microphone Y Adapter | 11-10615 | . |
| PA-75 Helicopter to GA headset Adapter | 11-10650 | . |
| PA-76 GA to Helicopter Headset Adapter | 11-10630 | . |
| PA-77S Headset Extension (2 Jacks, 2 Plugs) | 11-06520 | . |
| PA-77H Helicopter Headset Extension (5ft) | 11-00688 | . |
| PA-78 Mono Replacement Headset Cable (Chrome Plugs) | 11-03563 | . |
| PA-79 Mono/Stereo Replacement Headset Cable (Chrome Plugs) | 11-03564 | . |
| PA-79DNC M/S Headset Cable: For use with PA-1779, PA-1776, PA-2 | 11-06521 | . |
| PA-80S GA Video Recorder/CD Player Adapter | 11-00694 | . |
| PA-80H Helicopter Video Recorder/CD Player Adapter | 11-03565 | . |
| PA-81 Airbus Aircraft Headset Adapter | 11-03566 | . |
| PA-82 Headset Adapter for ICOM A22,A24 Transceiver | 11-02116 | . |
| PA-82.4 Headset Adapter for ICOM A4 Transceiver | 11-03567 | . |
| PA-82B Bose Headset Adapter for IC-A6, A22,A24 | 11-06523 | . |
| PA-82H Helicopter Headset Adapter for IC-A6, A22,A24 | 11-06524 | . |
| PA-83 Europe NATO to US NATO Headset Adapter | 11-06525 | . |
| PA-84 US NATO to Europe NATO Headset Adapter | 11-06526 | . |
| PA-85 Headset Adapter for ICOM A5, A23 Transceiver | 11-00618 | . |
| PA-86A Amplified Cell Phone Adapter GA (Twin Plug) Version | 11-03568 | . |
| PA-86AH Amplified Cell phone Adapter - Helicopter Version | 11-06527 | . |
| PA-86AB Amplified Cell phone Adapter (Panel Power) BOSE | 11-06528 | . |
| PA-87 Impedance Converter Hi (GA) to low Military | 11-06529 | . |
| PA-87H Impedance Converter Hi (Heli) to low Military | 11-06530 | . |
| PA-88 Amplified Impedance Converter low (MIL) to Hi (GA) | 11-10645 | . |
| PA-88H Impedance Converter Low (MIL) to Hi (Helicopter) | 11-06531 | . |
| PA-89B Power Supply for Panel Power BOSE Headset | 11-03570 | . |
| PA-90S Triple Headset Adapter | 11-03571 | . |
| PA-91 GA (Twin Plug) Headset to (.25") Single Plug Adapter | 11-00685 | . |
| PA-92 (.25") Single Plug Headset to GA (Twin Plug) Adapter | 11-03572 | . |
| PA-93B GA to Bose Plug Headset Adapter | 11-06533 | . |
| PA-93BH Helicopter Headset to Bose Plug Adapter | 11-06602 | . |
| PA-94 Helicopter Ground Crew Extension Cable W/PTT (3ft.) | 11-06534 | . |
| PA-95 Headset Adapter for Vertex Transceiver | 11-03574 | . |
| PA-96 PC to GA (Twin Plug) Headset Adapter | 11-03575 | . |
| PA-97 Airbus Plug to GA Headset Adapter | 11-06535 | . |
| PA-98 Inline Helicopter Volume Control | 11-06536 | . |
| PA-99 Inline GA Volume Control | 11-06537 | . |
| PA-100B Oxygen Mask Microphone Adapter for Bose Plug Headset | 11-06603 | . |



PC TO HEADSET ADAPTER

This adapter allows you to plug your standard aviation headset into your zpc while using flight simulator to feed sound into your headset with high fidelity and mic for high quality verbal communication. Plug & play, no software needed. Requires a 9V battery, not included. Great companion to our fight-sim set-up.
P/N 11-02751



FOUR CONDUCTOR PHONE JACK

(TJ-101) Mates with series TP-120, TP-102 plugs and plugs PT-101, U-93-A/U, and U-174/U. Nickel Plated beryllium copper contacts molded into a black plastic body.
P/N 11-02744

FIVE CONDUCTOR PHONE JACK

(TJ-105, U385/U, M64/22-01) Mates with series TP-105, U-384/U, M642/14-01. Nickel plated beryllium copper contacts molded into a red plastic body.
P/N 11-02745

AUDIO GOLD PLUG ADAPTERS

JB-11LDS - 1/8" stereo to .25 stereo plug, increases a 3.5mm plug to a .25" stereo plug. P/N 11-02746

JB-11LDM - 1/8" mono to .25 stereo plug, increases a 3.5mm plug to a .25" mono plug. P/N 11-02747

JB-11DLS - .25" stereo to 1/8" stereo plug, decreases a .25" plug to a 3.5mm stereo plug. P/N 11-02740

JB-11DLM - .25" mono to 1/8" stereo plug, decreases a .25" plug to a 3.5mm mono plug. P/N 11-02741

FIVE CONDUCTOR PHONE PLUG

(U-384/U, TP-105, M642/14-01) Mates with series TJ-105 and TJ-125. One piece monel contacts integrally molded into red plastic body.
P/N 11-02742



CABLE JUNCTION BOX

This product allows you to convert two cables into one. Size: 1.5" x 1" x .5"). Comes with 4 screws.
P/N 11-02743

SIGTRONICS ADAPTER CABLES

PTT Switch intercom use with intercom P/N 11-02806

Headphone Replace. Cable Stereo 5' P/N 800029

Headphone Replace. 3-6' Coil Mono P/N 800034

Headphone Replace. Coil 3-6' Stereo P/N 800035

Mono Headphone 5' Cord P/N 800037

M-90 Electret Microphone P/N 800078

M-80 Electret Microphone P/N 800082

Converter STD Aviation Plug P/N 900050

Converter Plug-STD Aviation P/N 900051

Converter Plug-STD Avia-Coiled P/N 900052

Headset 5' Straight Monaural P/N 900053

Headset 3-6' Coiled Monaural (GA Version) ... P/N 900054

Headset Ext 3-6' Coiled (Helicopters Version) P/N 900055

Microphone Y Adapter P/N 900056

Headphone Monaural Y Adapter P/N 900057

Headphone Stereo Y Adapter P/N 900058

Headphone 5' Straight Monaural P/N 900059

Microphone Extension Cable P/N 900060

Headphone 5' Straight Stereo P/N 900061

Converter Plug to STD Avi Plug P/N 900062

Convert U-75U to U174 Plug 18" P/N 900063

Convert STD Plug to U-75U P/N 900064

Converter to U-75 Plug 18" P/N 900065

PUSH TO TALK SWITCH HOUSINGS

FRONT OF HOUSING SWITCH - Housing provides a neat, clean mounting for PTT switches, made for P/N 11-02926. Housing is 3/4" in length and has a base width of 1". Machined from solid billet aluminum. Screws included with mounting instructions. Can also be used to mount any other switch control on the yoke. Color: Red ACS 001
P/N 11-04117



STANDARD HOUSING SWITCH REAR - Made for the American Standard switch P/N MSPF-101BCA. Housing is 3/4" in length, has a base width of 1" Machined from solid billet aluminum. Screws included with mounting instructions. Can also be used to mount any other switch control on the yoke. Color: Black ACS 002
P/N 11-04418



AWW PTT HOUSINGS - Housings measure 1 inch in length, 1/2" in diameter with a mounting width of 1/2". Mounts with (2) #4 countersunk screws.
TOP P/N 11-07340



HOUSING FOR MICROMINI MOMENTARY SWITCH

P/N 11-07342



TEST EQUIPMENT

EASTERN ELECTRONICS TEST EQUIPMENT

MAGNETO TIMING LIGHT - MODEL E50



Designed specifically for internal timing of aircraft magnetos and for synchronizing magnetos to aircraft engines. Eliminates all guesswork and provides a greater safety factor by creating perfect timing quickly and easily. Simply attach three clips to the magnetos and adjust until both bright lights flash in sync and the buzzer changes pitch. Fail-safe circuitry, variable pitch buzzer. Heavy-duty 3"x 5"x 2-1/8" unbreakable case. Wt. 1.5 lbs. Complete with 18 gauge lead wires 36" long and instructions.
 P/N 12-01013
 U.S. Industrial Equivalent.....P/N TP105.....

AIRCRAFT TIMING INDICATOR MODEL E25



This all-aluminum unit improves and speeds up the timing of magnetos to the engine. Easily attached to propeller spinner, it is accurate to within 1/2 degree. Has easy to read dial and comes with top dead center locator and mounting bands.
 P/N 12-01014
 Replacement Piston Stop
 P/N 12-18100
 U.S. Industrial Equivalent
 P/N TP102.....

MAGNETO TIMING LIGHT



These devices measure the change in inductance in the magneto coil when the points open and close. Simply shorting the clip leads together will not indicate a point closing, therefore eliminating any false reading caused by loss of contact to the magneto grounding terminal. To use, simply remove one plug from each cylinder. Connect black clip lead to engine ground. Connect red and green leads to right and left magneto terminals. Turn propeller slowly. When the points open the LEDs will turn off and the audio "tweeter" will sound. The magneto connected to the red lead will sound a rapid beat and the magneto connected to the green lead will sound a slower beat. When both sets of points are open, a third and continuous sound will be emitted. Adjust magneto timing accordingly. 100% solid state, compact 3/4" x 3" x 5" size, long battery life. Color coordinated leads are 4 ft. long. Comes in strong anodized aluminum case.
 Dual Magneto Synchronizer w/Tweeter P/N 12-16901
 Dual Magneto Synchronizer w/o Tweeter P/N 12-16902
 Single Magneto Timing Light w/Tweeter P/N 12-16903

TRACERLINE AVIATION ULTRASONIC LEAK DETECTOR



Master Kit Includes: • Marksman Receiver • UltraSonic Emitter • Headphones • 12 inch Air Probe • Contact Probe • Carrying Case
Features: • Converts & Amplifies Ultrasonic Sound Into Audible "Natural" Sound for Accurate Diagnosis. Finds Problems Before They Result in Major Breakdowns
 • Frequency Response: 36,000 - 44,000 Hz • Detects Air Brake, Compressed Air, Vacuum, EVAP System and Other Pressurized

Leaks Quickly and Effortlessly • Pinpoints Gear and Bearing Wear in Wheel Hubs, Transmissions, Transfer Cases, Differentials and Electric Motors. Check for Electrical Discharge Associated with Insulation Breakdown, Carbon Tracking and Arcing • Finds Air and Water Leaks Passed Faulty Seals, Gaskets and Weather Stripping in Passenger Cabs, Trailers and other Non-Pressurized Enclosures Using Ultrasonic Pulses
 10-Bar LED Intensity Indicator Helps Detect Sounds Well Beyond the Range of the Human Ear • Automatic Gain Control that Instantly Compensates for Changes in Signal Strength so you can focus on the task
Specifications: • Shipping Weight: 3.4 lbs (1.7kg) • Housing: Chemical Resistant Nylon with Protective Boot • Battery Life: Approx 20 hours. • Power Requirement: One Standard 9-Volt Alkaline Battery Each for. • Receiver & Emitter • Power Consumption: 27mA • Frequency Response: 36,000 - 44,000Hz • Circuitry: Solid State • Headphones: Full-Sized, noise attenuating
 P/N 12-01745.....

HIGH VOLTAGE CABLE TESTER MODEL E5



Gives a fast, accurate test of high voltage aircraft ignition cables. Simply connect 3 wires, push test button and test is completed. The E5 will instantly indicate in its test window both good and defective cables - no waiting for indication to appear. Fail-safe circuitry. Heavy-duty lead wires. Compact 3" x 5" x 2-5/8" case. Wt. 1-1/2 lbs.
 P/N 12-01016
 U.S. Industrial equiv P/N TP103.....

DIFFERENTIAL CYLINDER PRESSURE TESTER

DIFFERENTIAL CYLINDER PRESSURE MODEL E2A



The Model E2A tester quickly locates worn or cracked rings, a defective intake or exhaust valve, scored or cracked cylinders, leaky head gaskets, worn or stripped spark plug bushings, etc. Eliminates guesswork by allowing you to locate the exact location and cause of your engine's loss of efficiency. The Model E-2M differential cylinder pressure tester, with a

SLOW FILL safety valve and built in Master Orifice, has been field tester for 2 years by Teledyne Continental Motors, and has been approved for use on Teledyne Continental Engines by their Engineering and Field Services Group. The new valving adds additional safety; speeds up the test process. Rugged construction features heavy-duty gauges, extra long high-pressure hose, precision regulator, all connections quick-disconnect, 18mm plug adapter. Complete instructions with each unit. "M" models have built-in master orifice.

- E2A - for cylinders < 5" bore.....P/N 12-01012
- E2A-1000 - for cyl. > 5" boreP/N 12-01017
- E2M - for cylinders < 5" boreP/N 12-01015
- E2M-1000 - for cyl. > 5" bore.....P/N 12-00692
- E2A-12mm (Rotax) for cyl. < 5" bore.....P/N 12-00693
- 12 mm AdapterP/N 12-01018
- 10/14 mm AdapterP/N 12-18201
- 18 mm AdapterP/N 12-18202
- U.S. Industrial Equivalent.....P/N TP104.....
- 14MM Adapter.....P/N TP171.....
- 18MM Adapter.....P/N TP104-9A

COMPRESSION TESTER EXTENSION



This tool makes compression testing easy. Wrench free way to test that allows for exhaust system and baffling clearance. Tester is manufactured with quality-welded construction and offers a spark plug thread with O-Ring seal. It has a standard air fitting.
 P/N 12-01060

AUDIOTECH PROBE




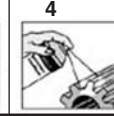



The Model AT201 diagnostic Listening Tool is a versatile, time-saving tool which is ideal for use in any application where there is movement of mechanical parts, air, gas, or fluid. Ideal for use on commercial, general aviation, or homebuilt aircraft and helicopters for application such as air leak and vacuum detection, bearing wear, worn or chipped gears, engines, turbines, and compressors, hydraulics, fuel injectors, flow valves, instrument failure, and more. Audiotech Probe can quickly and accurately pinpoint the trouble spot so that the problem can be fixed quickly the first time. Diameter of small mic at end of probe is 3mm. AAA battery included. Perfect for homebuilders, A & P's, A & E's, and A & I's.
 P/N 12-21420

TO

PENETRANT INSPECTION KITS-MALLETS-HAMMERS

MAGNAFLUX NDT (NON-DESTRUCTIVE TESTING) KIT

| | | | | |
|---|---|--|---|---|
|  |  |  |  |  |
| 1 Pre-clean inspection area. Spray on Cleaner, wipe off with cloth. | 2 Apply penetrant. Allow short penetration period. | 3 Wipe to remove Penetrant from surface. Use Cleaner, moistened towel if surface is rough. | 4 Shake can and spray on a thin film of Developer. | 5 Inspect. Defects will show as bright red lines in white Developer background. |

A quick, easy way to make shop and in-field inspections of landing gear, airframe and components. Highly sensitive Spotcheck dye penetrants which give clear, bright red indications. Locates very fine cracks on the surface of ferrous and non-ferrous components, equipment and structures. Reveals cracks on materials with surface temperatures as high as 350°F. Perfect for testing welds before thorough cooling. Convenient spray cans make application easy and contain no fluorocarbon propellants. Non-flammable. Materials meet applicable specifications for dye penetrant inspections (ASME, ASTM and MIL specs). Considered flammable and hazardous by UPS.



4-CAN SPOT CHECK® TEST KIT - The lowest priced way to check for cracks, leaks and other defects on any metal parts. Kit includes 1 spray can of developer, 2 cans of cleaner & 1 can of dye penetrant in cardboard case.

Magnaflux 4-can kit P/N 09-00391
 Developer P/N SKD-S2
 Replacement Materials: Penetrant P/N SKL-SP
 Cleaner/Remover (12oz. Aerosols) P/N SKC-S

SK-3 KIT - The SK-3 kit is larger, comes in a lightweight high-impact plastic carrying case containing 2 cans of penetrant SKL-SP, 4 cans of cleaner/remover SKC-NF, 2 cans of developer SKD-NF, brush, cloth and instructions. P/N SK-S.....

SKC-S CLEANER - This clear, fast-drying solvent can be used for pre-cleaning, post-cleaning and penetrant removal. P/N SKC-S.....

SKL-SP PENETRANT - Because of its vivid red color, this solvent removable dye penetrant provides excellent color contrast performance to locate surface cracks in virtually any metal or non-porous ceramic material. P/N SKL-SP

SKD-S2 DEVELOPER - Made especially for use with SKL-SP penetrant, this developer contains suspended white particles that provide an ideal background for red Spotcheck penetrant indications. P/N SKD-S2

MET-L-CHEK PENETRANT INSPECTION KITS



Met-L-Chek kits provide a completely portable, job-proven method used throughout the industry to locate cracks, flaws and other defects. These economical & effective kits provide everything needed to make inspections in the shop or field. The penetrant materials are packaged in easy-to-use aerosol spray cans and a can of cleaner included for cleaning parts before inspection. The inspection procedure is easy to learn, accurate and inexpensive. Met-L-Chek can be used on ferrous and non-ferrous materials to find surface defects and 'thru leaks'. Supplied in a rugged metal case with complete instructions. The 4-Can Kit has one aerosol spray of cleaner, penetrant, developer and remover. The 8-Can Kit has 2 cans of each material. Individual replacement cans available.

4-Can Kit P/N 09-38304
 8-Can Kit P/N 09-38308

GARLAND NON-MARRING MALLETS AND HAMMERS



Since 1866, Garland Manufacturing has been supplying America with top-quality products made from the finest water buffalo rawhide. Today, they're the leader in the manufacture of soft-faced mallets and hammers of unsurpassed quality.

All Garland products are manufactured in the U.S.A. to ISO 9002 international quality standards. They combine superior craftsmanship with the best materials and then field-test their products extensively on a range of surface finishes to meet the requirements of the industries in which they're used. Industries ranging from foundries and electrical manufacturing to jewelry and woodworking. Their mallets and soft-faced hammers are preferred by both craftsmen and production workers.

RAWHIDE AND WEIGHTED RAWHIDE MALLETS

Garland's all-rawhide mallets are made of tough, long-wearing, water buffalo rawhide. They're ideal for use on broad-faced striking surfaces in a broad range of applications.

| RAWHIDE MALLETS | | | | | |
|--------------------------|--------------------|----------------------|--------------|----------|-------|
| Size | Face Dia. (Inches) | Head Length (Inches) | Weight (oz.) | Part No. | Price |
| 0 | 1" | 2" | 2 | 12-00749 | . |
| 2 | 1-1/2" | 3" | 6 | 12-00750 | . |
| 4 | 2" | 3-1/2" | 11 | 12-00751 | . |
| 6 | 2-3/4" | 4-3/4" | 24 | 12-00752 | . |
| WEIGHTED RAWHIDE MALLETS | | | | | |
| Size | Face Dia. (Inches) | Head Length (Inches) | Weight (oz.) | Part No. | Price |
| 7 | 1-1/4" | 2-1/2" | 8 | 12-00753 | . |
| 10 | 2" | 3-1/2" | 20 | 12-00754 | . |

RUBBER MALLETS

Garland's rubber mallets are designed for general-purpose applications. All sizes deliver solid, mar-free blows.

| Size | Face Dia. (Inches) | Head Length (Inches) | Weight (oz.) | Part No. | Price |
|------|--------------------|----------------------|--------------|----------|-------|
| 1 | 2-1/4" | 3" | 17 | 12-00755 | . |
| 2 | 2-1/4" | 3-7/8" | 19 | 12-00756 | . |
| 3 | 2-1/2" | 4-1/2" | 32 | 12-00757 | . |

SPLIT-HEAD HAMMER



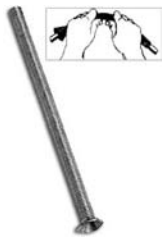
The split-head hammer does the work of six different hammers because the face can be easily changed. Available in two sizes.

• Many materials & surfaces • Foundry • Die moving or positioning • Assembly • Electric Motor Repair • Propeller Repair

| Size | Face Dia. | Head Length | Weight | Part No. | Price |
|------|-----------|-------------|----------|----------|-------|
| 3 | 1-3/4" | 4-3/4" | 2.5 lbs | 12-00965 | . |
| 5 | 2-3/4" | 5-3/4" | 5.25 lbs | 12-00966 | . |

TO

TUBE BENDERS – CUTTERS – FLARING TOOLS



SPRING TUBE BENDERS

Economical tools for hand-bending of soft aluminum and copper tubing to any shape without collapsing walls. Special spring steel, nickel finished. End belled for quick tube removal. Set of 6 for 1/4", 5/16", 3/8", 7/16", 1/2" and 5/8" O.D. tubing.

P/N 12-00823

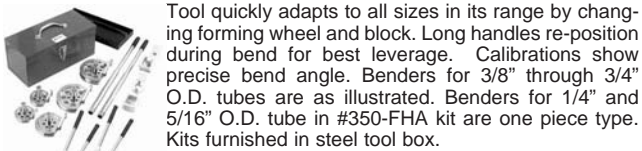


LEVER TYPE BENDERS

Each tool bends one size. Open side type slips over tube at any point. Makes smooth short-radius bends up to 180° with minimum effort. No marking, scraping or flattening of tubing. Calibrated to show angle of bend. Wide hook grips tube securely. Suitable for bending annealed copper, aluminum, steel, stainless steel and hard copper tubing of bending temper.

| Tubing O. D. | Bender Model No. | Part No. | Bending Radius | Price |
|--------------|------------------|----------|----------------|-------|
| 1/8" | 364-FH-02 | 12-20002 | 3/8" | . |
| 3/16" | 364-FH-03 | 12-20003 | 7/16" | . |
| 1/4" | 364-FHA-04 | 12-20004 | 9/16" | . |
| 5/16" | 364-FHA-05 | 12-20005 | 11/16" | . |
| 3/8" | 364-FHA-06 | 12-20006 | 15/16" | . |
| 1/2" | 364-FHA-08 | 12-20008 | 1-1/2" | . |
| 5/8" | 364-FHA-10 | 12-20010 | 2-1/4" | . |
| 3/4" | 364-FHA-12 | 12-20012 | 3" | . |

WIDE RANGE LEVER TYPE BENDERS



Tool quickly adapts to all sizes in its range by changing forming wheel and block. Long handles re-position during bend for best leverage. Calibrations show precise bend angle. Benders for 3/8" through 3/4" O.D. tubes are as illustrated. Benders for 1/4" and 5/16" O.D. tube in #350-FHA kit are one piece type. Kits furnished in steel tool box.

Model 350-FHA Kit- For 1/4", 5/16", 3/8", 1/2", 5/8" & 3/4" Tube P/N 12-20100

Model 360-FHA Kit- For 3/8", 1/2", 5/8" & 3/4" Tube. P/N 12-20200

TRIPLE HEADER TUBE BENDER



For bending annealed copper, aluminum, brass, steel and stainless steel tubing. Multi-tube design does the work of three conventional lever type benders. Calibrated markings for making accurate left-hand, right-hand and offset bends. (for 1/8", 3/16", 1/4" O.D.)

P/N 12-01577



IMP® TRIPLE HEADER TUBE BENDER

Calibrated markings for making accurate left-handed, right-handed and offset bends. 90° start requires less effort-making bending fast and easy. For 1/4", 5/16", & 3/8" (6 & 8 mm) O.D. tubing. 15/16" radius to center of tube. (for 1/4", 5/16", 3/8" OD)

P/N 12-01578



SOFT PIPE/TUBING CUTTER

This economical tool will cut soft pipe and tubing up to 1-1/4" outside diameter. The blade is teflon-coated and reverses for double the useful life of the blades.

P/N 12-20020 ea.

Replacement Blades.....P/N 12-20025 ea.



EZ-BEADER TUBING BEADERS

Designed to replace the original Parker beading tools. Compact design. Capable of tubing wall thickness from .035 to .065 thick

| Size | Description | Part No. | Price |
|--------------|-------------------------|----------|-------|
| 1/8" | EZ-BEADER TP885A | 12-00354 | . |
| 1/2" | EZ-BEADER TP885B | 12-00355 | . |
| 5/8" | EZ-BEADER TP885C | 12-00356 | . |
| 3/4" | EZ-BEADER TP885D | 12-00357 | . |
| 1" | EZ-BEADER TP885F | 12-00358 | . |
| 1-1/4" | EZ-BEADER TP885G | 12-00359 | . |
| 1-1/2" | EZ-BEADER TP885H | 12-00360 | . |
| 1-3/4" | EZ-BEADER TP885I | 12-00361 | . |
| 2" | EZ-BEADER TP885J | 12-00362 | . |
| Set of all 9 | EZ-BEADER Tubing Bearer | 12-00363 | . |



HL-DUTY TUBE CUTTER

For 1/8" to 1" O.D. metal tubing. Makes clean, right-angle cuts with no burrs or chips to clog tubing. Roller type with flare cut-off groove, fold-away reamer and spare cutting wheel. Wt. 6-1/2 oz.

Hi-Duty Tube Cutter P/N 12-00382.....

Replacement Cutter Wheel P/N 75015.....

Replacement Reamer Blade P/N 79318-01.....



"IMP" TUBE CUTTER

Designed for use in tight quarters where other cutters won't fit. For 1/8" to 5/8" O.D. tubing. Requires only 13/16" swing radius. Perfect for instrument panels, control cabinets, machine tools, etc. Size: 111/16" x 1-5/16" x 7/8". Wt. 2-1/2 oz.

P/N 12-01277.....



JUNIOR TUBE CUTTER

Exceptionally handy in close quarters - only 3-1/2" overall length. Makes clean, right-angle cuts without flattening tube. Cuts 1/8" to 3/4" O.D. tubing. Enclosed feed mechanism. Wt. 5 oz.

Junior Cutter P/N 12-01576.....

Replacement Cutter Wheel P/N 32633.....

WEATHERHEAD

T-1295 Heavy Duty Segmented Flaring Tool (37°)



Tool Flares: 1/8", 3/16", 1/4", 5/16", 3/8", and 1/2", O.D. tubing. Forms 37° flares in annealed stainless steel (MIL-T-6845 or AMS-5566), cold drawn stainless steel, and annealed copper, brass, steel or aluminum. Bar has vice extension. Wt.: 3lbs. P/N 12-01166.....

HI-DUTY FLARING TOOL 37°



Hard chrome-finished cone makes exceptionally smooth, high strength flares with a radius at base of flare instead of the sharp angle formed by ordinary tools. Slip-on yoke permits use in tight quarters. For tubing sizes: 3/16", 1/4", 5/16", 3/8", 1/2" and 5/8" O.D. Wt. 1 lb. 11 oz. Not for use on Stainless Steel Tubing.

P/N 12-01581.....

ROL-AIR FLARING TOOL 37°



Faceted, hard chrome finished cone rolls out perfect flares above die block, then automatically burnishes flare face. Slip-on yoke permits use in tight quarters. Heat treated dies grip tubing without scoring. Flares and burnishes: 3/16", 1/4", 5/16", 3/8", 1/2" and 5/8" O.D. tubing. Wt. 1-1/2 lbs. Works on some Stainless Steel Tubing but not warranted for Stainless.

P/N 12-01582.....

ROLO-FLAIR FLARING TOOL 37°



Operates on same principle as Imperial #507-FA but flares 1/8" (primer line) and 3/4" tubing as well. Size: 4"W x 4"D x 8"H. Wt. 2-1/2 lbs. Excellent tool for bench - not for close-quarter work. Not for use on Stainless Steel Tubing.

P/N 12-01575.....



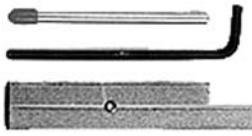
DELUXE 37° FLARING TOOL

Forms 37° flare to AN standards in steel, stainless steel (including MIL-T 6845), titanium, an other metal tubing. Three rollers in flaring cone roll out 37° flare above die block. Extension on yoke for clamping in vise. Furnished in plastic kit. Wt. 2-1/2 lb.

P/N 12-01579.....

TO

FLARING TOOLS - BENDERS - RIVET SQUEEZERS



37° FLARING BLOCK FOR 1/8" TUBING

This tool is designed to flare 1/8" tubing for primer lines. Leaves no ridges or marks on tubing, complying with aircraft requirements. Furnished with 37° flaring punch. The slip-on yokes of most flaring tools also fit this block.

P/N 17010



37° DOUBLE LAP FLARING TOOL

This U.S. made 37° Double Lap Flaring Tool makes flares to AN standards in soft copper and aluminum tubing for 3/16" 1/2" O.D. Also makes single 37° S.A.E. standard and oversize flares. Adapters revolve for quick size change and act as positioning gauge for tube. For portable use or can be vise mounted. Sliding handle gives maximum leverage. Wt. 4 lbs.

P/N 12-00205



37° DOUBLE LAP FLARING TOOL KIT

Our 37° Double Lap Flaring Tool Kit includes the double lap flaring tool above which forms 37° double lap flares to AN10078 in soft copper and aluminum tubing (wall thickness to .040"). Flares tubing sizes 3/16", 5/16", 3/8", and 1/2" O.D. Also includes a tubing cutter, an inner-outer reamer, and a plastic carrying case. A quality tool kit which is made in the U.S.A.

P/N 12-00210

BRAKE LINING & GENERAL RIVET SETS



Standard Model - Designed especially to economically reline brakes, this riveting set is a handy tool for many other jobs where rivets are used to fasten leather, canvas, plastic & metal parts.

P/N 824

Brake lining Rivets.....P/N 06-02300ea

DELUXE MODEL - Our deluxe model brake relining tool makes it virtually impossible to botch a brake relining job. The threaded screw action of the rivet insertion tool insures a perfect roll on brake rivets every time without damaging the liner.P/N 12-20810

Replacement Parts

- (a) AnvilP/N BR-1005Jea.
- (b) Knockout Punch.....P/N BR-1006Jea.
- (c) Rivet Set.....P/N BR-1007Jea.
- (d) Threaded Replacement-Punch ...P/N BR-1006Jea.



PARKER TYPE AIRCRAFT TUBE BEADING TOOL

The Parker Beading Tool has been the number one choice of aircraft mechanics for making clamping beads in metal tubes. To this day, no other tool even comes close to matching its quality. So by special arrangement, the manufacturer tooling up

to recreate this classic tool in every detail. In the process they have added a few enhancements of their own, such as ground, hardened, and polished surfaces for mar-free beads in aluminum, copper, brass, and mild steel tubes ranging from 1/4" to 1" diameter. Meets MILSPEC MS33660D and SAE AS5131 standards. P/N 12-01049.....

IMPERIAL 664-FH-08 180° TUBING BENDER



The 664-FH-08 Heavy Duty 180° Tube Bender line for 1/2" stainless steel and other tough tubing metals! Its patented ROTO-LOK™ quick action trigger release two-stage handle allows the tubing to be bent up to 180° without crossing the hands or handles! This means bends are made with reduced effort and much better control.

P/N 12-02081

IMPERIAL 470-FH TRIPLE HEAD 180° TUBING BENDER



The 470-FH Triple Head 180° Tube Bender bends 4 diameters of tubing with just one tool! It handles soft copper, aluminum and thin-walled steel tubing in 3/16", 1/4", 5/16" & 3/8" diameters. Like the heavy duty 464-FH, it features the patented ROTO-LOK™ two-stage handle that allows easy fabrication of bends up to 180°. It also features optimized bending grooves that allow the user to bend the tubing in the smallest

radius possible to enable tighter turns and minimize the space taken by the bends. Soft copper - .030-.032" wall. 304 stainless steel - .030-.032" wall.

P/N 12-01042

ATS HAND RIVET SQUEEZER



The newest addition to our ATS Pro Rivet Squeezer Line is built for hard use, but we must admit it's also one of the best looking squeezers we've ever seen. It's an all stainless steel design that's constructed to last a lifetime. The unique unibody styling is drop forged for extra strength and CNC machined to tight tolerances. The yoke (also stainless steel) is engineered to be half the weight of other yokes, yet retain full strength. Finally, the whole thing is beautifully finished in a brush satin look and highly polished surfaces. Has a very solid feel, and professional look that will complement anyone's toolbox. Squeezes up to 5/32" aluminum (1/8" seal) rivets. Works with any rivet sets, or dipole dies having a 3/16" (.187") shank. Adjustable ram does not need shims. Lifetime warranty.

Features: •1.5" Yoke •Drop forged from Stainless Steel for unmatched strength and durability •Clasic brushed stainless steel finish. •Adjustable ram does not need shims •Squeezes aluminum rivets up to 5/32" and steel rivets up to 1/8" •Comfort grip rubber handles •4lbs shipping weight. P/N 12-01620.....

PROFESSIONAL RIVETING KIT



This Professional Riveting Kit has all the tools you need to drive rivets like a pro... It contains the best-selling ATS Pro Series 3X Rivet Gun, a selection 4 of our most popular Bucking Bars (141, 142, 148, and 149), plus a complete assortment of Rivet Sets to install Universal Head (AN470) or Flush (AN426) rivets in sizes 3/32" to 3/16".

And it all comes to you in a stylish molded case to keep things neatly organized. This is the perfect "field" kit to take with you anywhere -- it has the riveting tools you need conveniently laid out in one handy ready-to-go package. The Professional Riveting Kit is a part of our ATS-PRO Series, so you can rest assured that your tool investment will be well protected by an Unconditional 30 Day Money Back Guarantee, and industry-leading ATS Pro Lifetime Warranty. 19lbs shipping weight.

P/N 12-01698

TO

RIVET SQUEEZERS – RIVET SETS

SPRING TENSION CLAMPS



Spring tension clamps can be applied in a fraction of the time required for ordinary screw clamps. The AT542 clamp, with 2" throat depth, has a Zamak alloy yoke and a steel spring which provides a 70 lb. clamping pressure. Designed for use with sheet holder pliers.

P/N AT542..... *Jea.*

SIDE GRIP CLAMPS



Designed to hold two or more work pieces together where no holes exist. Clamping force is applied at edge of work. Spring loaded, plier actuated. The lack of a takeup screw makes it impossible to over-tighten and damage the work surfaces or the clamp. Clamping capacity - 0-1/2". Jaw depth: 1/2" and 1". Length: 2-3/16".

P/N SC-1/2-1..... *Jea.*

AT-114C3 QUICK-CHANGE RETAINER SPRING



Makes possible the changing of rivet sets without removal of retainer spring. For .402" shank dia. rivet sets.

P/N AT-114C3..... *Jea.*

AT 107A FLUSH RIVET SETS



Large radii at critical points to prevent breakage. Slightly crowned, highly polished face designed for rapid flush riveting where a smooth skin surface is essential. Shank dia. .401".

| Part No. | Face Dia. | Length | Price |
|-----------|-----------|--------|-------|
| AT-107A-1 | 1" | 2-3/4" | . |
| AT-107A-3 | 1-1/4" | 3-3/4" | . |

AT 100A STRAIGHT RIVET SETS



Cup surfaces are highly polished and guaranteed to conform with rivet heads. Carried in stock in AN470 (MS20470) universal-head cup shape. Overall length, 3-1/2", .401" dia. centerless-ground shank.

| | | |
|----------------|-------|---|
| AT-100A-3-3/32 | 3/32" | . |
| AT-100A-3-1/8 | 1/8" | . |
| AT-100A-3-5/32 | 5/32" | . |
| AT-100A-3-3/16 | 3/16" | . |

AT 101A OFFSET RIVET SETS



Same tool as AT100A but has 10° bend 1" back from the cup to allow added clearance. Permits easier riveting where obstructions are encountered.

| | | |
|----------------|-------|---|
| AT-101A-3-3/32 | 3/32" | . |
| AT-101A-3-1/8 | 1/8" | . |
| AT-101A-3-5/32 | 5/32" | . |
| AT-101A-3-3/16 | 3/16" | . |

HAND RIVET SQUEEZER



Designed to squeeze 1/16" - 5/32" rivets and dimple 1/16" - 3/16" in material up to .040" thickness. Takes standard 3/16" shank rivet squeezer sets. With adjustable ram and 2-piece C-yoke of heat treated 4130 steel. Throat depth: 1.25". Gap: 1-1/4". Overall length: 14". Best quality squeezer on the market. Made in USA

P/N 12-00300.....

YOKES FOR RIVET SQUEEZER

| | | |
|-----------------------|--------------|---|
| 1-1/4" X 1" Reach | P/N 12-00308 | . |
| 1-1/4" X 1-1/2" Reach | P/N 12-00309 | . |
| 1-1/4" X 2" Reach | P/N 12-00310 | . |
| 2" X 2" Reach | P/N 12-00315 | . |
| 1-1/4" X 2-1/2" Reach | P/N 12-00318 | . |
| 1-1/4" X 3" Reach | P/N 12-00320 | . |
| 1-1/4" X 3-1/2" Reach | P/N 12-00321 | . |
| 1-1/4" X 4" Reach | P/N 12-00322 | . |
| 1-1/4" X 5" Reach | P/N 12-00323 | . |
| 1-1/4" X 6" Reach | P/N 12-00324 | . |

SWIVEL HAND RIVET SQUEEZER



This tool incorporates a 3/8" stroke and 5/8" ram adjustment. The full 360° yoke can be locked in any position in relation to the handles. Uses standard squeezer sets with 3/16" shank diameter. Yoke depth: 1-1/2".

Model AT502AH-D..... P/N 12-00400.....

INSTRUCTIONS FOR SELECTING RIVET SETS

To develop maximum power, the riveter must drive the rivet near the end of the riveter's stroke. For maximum power the combined length of the two rivet sets must be of the correct length. Determine the correct length as follows:

WHEN TWO CUPPED RIVET SETS ARE USED - The sum of the two rivet sets "L" dimension should equal the closed height dimension of the yoke minus the total thickness of the material being used.

WHEN TWO FLUSH SETS ARE USED - The sum of the two rivet sets "L" dimension should equal the closed height dimension of the yoke minus the overall length of the rivet after it is driven.

WHEN ONE CUPPED SET & ONE FLUSH SET ARE USED - The sum of the two rivet sets "L" dimension should equal the closed height dimension of the yoke minus the total thickness of the material being riveted and the height of the finished rivet head driven by the flush set. If necessary, select rivet sets a little short and shim to proper length with hardened shims listed in the table. The closed height dimension of the yoke referred to above is the opening available when jaws of plunger are in extreme closed or forward position with both rivet sets in place.

RIVET SETS FOR SQUEEZER



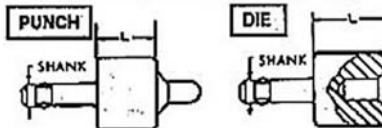
Assorted Squeezer Set. 5-piece, consisting of rivet sets for 3/32, 1/8 and 5/32" AN470 rivets, and one flat set. Shank dia. 3/16".

P/N 26-5.....

DIMPLING SETS FOR SQUEEZER

| FASTENER | AN 425 RIVET | | | |
|-------------|--------------|-----|------|------|
| SIZE | 3/32 | 1/8 | 5/32 | 3/16 |
| DASH NO. | -3 | -4 | -5 | -6 |
| BODY LENGTH | 1/4 | 3/8 | 1/2 | |
| DASH LETTER | -P | -R | -S | |

When ordering, specify:
Basic Part No. - Rivet
Size No. - Body Length,
Letter. PN PER SET 1
PUNCH 1 DIE



| Part No. | Price | Part No. | Price | Part No. | Price |
|-------------|-------|-------------|-------|-------------|-------|
| 207/206-3-P | . | 207/206-4-R | . | 207/206-5-S | . |
| 207/206-3-R | . | 207/206-4-S | . | 207/206-6-P | . |
| 207/206-3-S | . | 207/206-5-P | . | 207/206-6-R | . |
| 207/206-4-P | . | 207/206-5-R | . | 207/206-6-S | . |



CUPPED SQUEEZER SETS

| "L" Dimension | Mfg P/N | Part Number | Price |
|---------------|---------|--------------|-------|
| 1/8" | AT108AN | AT108AN-1/8 | . |
| 1/8" | AT108AP | 12-01660 | . |
| 1/8" | AT108S | AT108S-1/8 | . |
| 1/8" | AT108AR | AT108AR-1/8 | . |
| 3/32" | AT108AR | AT108AR-3/32 | . |
| 3/32" | AT108AP | 12-01661 | . |
| 3/32" | AT108AN | AT108AN-3/32 | . |
| 3/32" | AT108S | AT108S-3/32 | . |
| 3/16" | AT108AP | 12-01163 | . |
| 3/16" | AT108S | AT108S-3/16 | . |
| 3/16" | AT108AR | AT108AR-3/16 | . |
| 3/16" | AT108AN | AT108AN-3/16 | . |
| 5/32" | AT108AP | 12-01662 | . |
| 5/32" | AT108AR | AT108AR-5/32 | . |
| 5/32" | AT108AN | AT108AN-5/32 | . |
| 5/32" | AT108S | AT108S-5/32 | . |



FLUSH RIVET SETS

| L" Dimension | Part No. | Price |
|--------------|----------|-------|
| 1/8" | AT109AN | . |
| 1/4" | AT109AP | . |
| 3/8" | AT109AR | . |
| 1/2" | AT109AS | . |

TO

COUNTERSINK CUTTERS



MICROSTOP COUNTERSINK CUTTER KIT AT590CSK

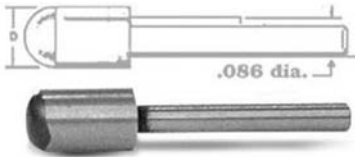
This kit provides countersinking versatility with nine different 1/2" diameter cutters, six of the most commonly used foot pieces, and a high-speed bearing-constructed microstop. The microstop controls cutting depth in .001 increments, from 0 to 5/16". Cutters-ground on-centers to ensure concentricity-are 100°, with pilot diameters #40, #30, #21, 3/32", 1/8", 3/16", and 1/4".

P/N 12-00824.....



100° AT455 COUNTERSINK CUTTER

Designed for operating in angle drills with 1/4-28 threads and in the AT441SLS Micro Stop Countersink. Has 1/4-28 threaded shank. Cutter angle 100°. AT455D-4 has 7/16" dia. cutter head. Use with AT484 pilots. P/N AT455D-4.....



AT484 PILOTS

AT484 replaceable pilots have a .086" dia. shank with a flat to accommodate the set screw of the AT455 cutter. An undercut permits the head to seat on the cutter angle. Order by P/N..... ea.

| Part No. | Head Dia. "D" | Part No. | Head Dia. "D" |
|----------|---------------|----------|---------------|
| AT484-2 | #40 | AT484-56 | 3/32 |
| AT484-12 | #30 | AT484-57 | 1/8 |
| AT484-21 | #21 | AT484-59 | 5/32 |
| AT484-31 | #11 | AT484-61 | 3/16 |
| AT484-32 | #10 | AT484-63 | 7/32 |

AT441 HSS MICROSTOP COUNTERSINK



AT441 HS Micro Stop Countersink, similar to the AT442SLS unit, except with 1/4-28 female threaded nose to accommodate AT455 cutter.

P/N 12-01591.....

AT 442 HS MICRO STOP COUNTERSINK



A precision tool for production countersinking. Ball thrust bearing for absolute depth control. Adjusts in .001" increments, with positive adjustment lock. Skirt accepts cutters up to 5/8" dia. Has 1/4-28 male threaded shaft for use with AT418 cutters. Can be assembled and disassembled without special tools. Split shaft and taper

locks pilot in place when cutter is tightened. Order cutters and pilots separately. P/N AT442-SLS.....

MICRO-STOP COUNTERSINK CAGES AND NYLON FOOT PIECE



2 Models available-one with NEEDLE bearing and one with BRONZE bushings. .001" increment depth adjustment. Positive adjustment lock. 1/4" dia. shank. 9/32" shaft travel. 9/16" cutter capacity. For 1/4-28 threaded cutters. Comes with "NO-MAR" foot piece. Rated at 3,000 RPM. Made in USA.

With Bronze Bushings P/N 12-01412.....

With Needle Bearings P/N 12-00940.....



BRAKE RIVET SET

Use these sets with your hand squeezer. Will set brake rivets eliminating the possibility of cracking your brake pads.

P/N 12-00550.....

AT 409 SERIES STRAIGHT SHANK COUNTERSINK WITH INTERCHANGEABLE CUTTERS AND PILOTS



P/N AT416-1

ADAPTER ONLY
P/N AT416-57

Assembly, consists of AT418E (1/2") cutter, AT416 pilot and AT409-1, 1/4" straight-shank. Has a collet-type shaft to securely hold the replaceable pilot.

When ordering specify: Part number of cutter and pilot dia.

Assembly Example: AT409 with 100° cutter A418E & 1/8 pilot.

(AT416-57) Adapter only.....P/N AT409-1

AT418 STOP COUNTERSINK CUTTERS



Three-straight flute replaceable pilot cutters with female thread. These cutters are designed with extra deep flute to permit numerous resharpenings and radial clearance to assure fast smooth cutting.

For Replaceable Pilots Refer to AT416 Series. Used With AT418

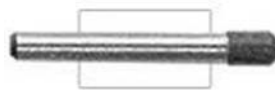
| Part No. | Cutter Dia. | Thread Size | Pilot Hole | Price |
|----------|-------------|-------------|------------|-------|
| AT418A-4 | 1/4" | 1/4 - 28 | .086 | . |
| AT418D-4 | 7/16" | 1/4 - 28 | .086 | . |
| AT418E-4 | 1/2" | 1/4 - 28 | .086 | . |

120° AT418 COUNTERSINK CUTTER

Same type cutter as described above except with 120° Cutter Angle. 7/16" Cutter Diameter. P/N AT418D-7.....

AT416 PILOTS

Fit AT418 cutters. Undercut permits head to seat on cutter angle. Order by Part No. in table below.



Order by part Number..... Ea.

| Part No. | Head Dia. "D" | Part No. | Head Dia. "D" |
|----------|---------------|----------|---------------|
| AT416-2 | #40 | AT416-56 | 3/32 |
| AT416-12 | #30 | AT416-57 | 1/8 |
| AT416-21 | #21 | AT416-59 | 5/32 |
| AT416-31 | #11 | AT416-61 | 3/16 |
| AT416-32 | #10 | AT416-63 | 7/32 |
| | | AT416-65 | 1/4 |

TO

PLIERS – PUNCHES – BRAKES



HAND SEAMER

Handy tools for comparatively light work. Wide, deep jaws machined for smooth parallel fit. Form precise folds and seams. Strong, lasting drop-forged steel construction. No. 44 has plain 3 1/2" wide blades. No. 44r is similar with a radius to prevent tearing of aluminum and other light metals. No. 793 has a 3 1/2" wide blade with adjustable depth gauge. P/N 12-00620.....



HAND SEAMER TP44

• Wide, deep jaws machined for smooth parallel fit • Forms precise folds and seams • 1" deep x 3-1/2" wide throat P/N 44R.....



ROPER-WHITNEY METAL CRIMPER

Handy crimping tool to disperse excess metal. Depth of throat 1-1/8". Overall length 9". Wt. 1 lb. P/N 111.....

ROPER-WHITNEY NOTCHER

Designed for fast, accurate 32° notch in sheet metal. Hook design of jaws permits notching to exact desired depth without slippage. Spring-return jaws. Capacity 20 ga. Wt. 1 lb. P/N 141.....



FLUTING PLIERS

These aircraft-type fluting pliers are a drop-forged quality tool. Non-marring working surfaces of jaws specifically designed for use on aircraft components. Comfort grip handles. P/N 12-00500.....

HOLE FLANGING TOOL

A real time saver for flanging lightening holes. Non-marring. Easy to use. Nylon rollers and ball bearings assure long life. P/N 12-00600.....



MIGHTY ROD SHEET METAL BENDER



Designed to bend solid round, square and flat alloys into nearly any shape and angle. FEATURES: • Works on solid materials up to 3/8" diameter. • Coils and bends wires of many sizes. • Includes dies for 1/2", 3/4", 1", 1 1/4" & 1-1/2" diameter bends. • Constructed of 3" x 3" aluminum base 1" thick with a 12" handle 7/8" in diameter. • Made in the USA. • 1 year Replacement Warranty. P/N 12-00934.....

JUMBO ROD SHEET METAL BENDER



Constructed of 4" x 6" aluminum base 1" thick with a 16" handle 7/8" diameter. Bends solid round, square and flat iron. FEATURES: • Works on solid materials of up to 3/8" round and square (1/2" wide flat). • Coils and bends wire of many sizes. • Bends metal to any shape and degree of angle. • Include dies for 3/8", 3/4", 2", 3" & 4" diameter bends. • Installs on any vise. • Ideal for hobbyists, prototype shops and do-it-yourselfers. • Made in the USA. P/N 12-00935.....



MAGNUM BENDER

For many homebuilders, the production of high quality aircraft metalwork can be a daunting prospect. There can be hundreds of intricate fittings to produce and many will require accurate bending. Magnum Bender has a BIG capacity and is capable of bending 1/8" thick x 6" wide 4130N. Magnum

bender uses sets of interchangeable bending bars each with two different radii to produce high quality bends, up to, and including 90 degrees. Bending bars are hardened and polished and allow for material 'spring back'. The Magnum Bender is available as either a standard version with 1/16", 3/32", 1/8", 5/32", 3/16" and 1/4" radii. Or, as a metric version, with 3 bending bars offering 1,2,3,4,5 and 6mm radii. Each machine is supplied with two pairs of operating levers, 1 ft. long and 2 ft. long. Standard version P/N 12-01550..... Metric version P/N 12-01551.....

ROPER-WHITNEY METAL PUNCH



#5 JR. HAND PUNCH – with one ton punching power. Punches 1/4" hole through 16 Ga. mild steel. Throat clearance 1-3/4". Complete set in metal box with 3/32, 1/8, 5/32, 3/16, 7/32, 1/4 and 9/32" punches & dies. Wt. 4-1/4 lbs. P/N 12-01600.....



BENCH MOUNT BASE – for stationary use. Base swivels to any position. Punch is held by L-shaped clamp rod through a 7/16" or larger hole in bench. P/N 12-01700.....



STRAIGHT PUNCH & DIE SETS – for No. 5 Jr. punch in the seven sizes shown below.

| | | | |
|-------|-----------|-----------|-----------|
| 3/32" | #12-01800 | 7/32" | #12-02200 |
| 1/8" | #12-01900 | 1/4" | #12-02300 |
| 5/32" | #12-02000 | 9/32" | #12-02400 |
| 3/16" | #12-02100 | Each Size | /set |

COMBINATION PUNCH & DIMPLING DIE SETS

– For #5 Jr. punch. Punch and dimple in one operation. 3/32, 1/8 or 5/32" 100° punch & dimpling die sets.

| | |
|------------|----------------|
| 1/8"..... | #12-02500..... |
| 3/32"..... | #12-02600..... |
| 5/32"..... | #12-02700..... |



ECONOMY MODEL BENDING BRAKE

For bending and forming. Makes clean, smooth bends and forms up to 90° in metals. 18" & 30" handle up to 16GA aluminum. 40" handles is up to 20GA sheet metal, 18GA aluminum. All include brake bars. Clamps not included. Made in USA.

Up to 18" width stock..... P/N 12-02800.....
Up to 30" width stock..... P/N 12-02810.....
Up to 40" width stock..... P/N 12-02815.....

HEAVY DUTY BENCH BRAKE



This small, compact brake is excellent for all tough fabrication and repair jobs. The radiused dies make it possible to form those difficult materials such as 2024T3, 4130, and stainless without fear of cracks. Features solid steel bar construction, heavy duty clevis hinges, and portable bench mounting. Includes 2 sets of assorted width reversible dies with 1/16", 1/8", and 3/16" radii, plus complete

instructions. Ideal for machine shops, aircraft, race car, boat builders, avionics installers, & auto repair shops. P/N 12-02850.....

ORIGINAL LANCASTER PORTO-METAL FORMER



The Porto-Metal Former makes the specialty angle needed in minutes. Can be used on the work bench or in a vise to make inside angles, outside angles, straight bends - even circles, to a radius as small as 3". Jaws are made of hardened alloy steel. Works 18 gauge soft steel, 20 gauge stainless, 16 gauge aluminum up to 2" in width. 45 to 1 leverage for powerful press. Special

malleable iron body will not break as we have found with cheaper imitations. Order #LSH-71 metal shrinker for inside angles. Order #LST-82 stretcher for outside angles. Wt. 12 lbs. each.

| | |
|--|-------------------|
| #LSH-71 Shrinker..... | P/N 12-19800..... |
| #LST-82 Stretcher..... | P/N 12-19900..... |
| Combination Shrinker/Stretcher Tool..... | P/N 12-02950..... |

Either unit can be converted into its opposite by ordering complete conversion kit, includes jaws, blocks & wire.

MOUNTING PLATE - installs on shop vice to allow mounting of shrinker and stretcher P/N 12-00494.....

TO

RIVET GUNS

G-28 HAND RIVETER GUN

The Cherry G-28 is a lightweight (13 oz.) ruggedly compact hand tool designed to efficiently set a broad range of Cherry commercial rivets. A unique torsion spring keeps the lever arm in place, ready to accept rivet after rivet. The G-28 comes with two popular size nosepieces, 728A9-4 (to set Cherry N Rivets - 1/8" dia. & Cherry Q Rivets - 1/8" dia.) and 728A9-6 (to set Cherry N Rivets - 5/32" & 3/16" dia. & Cherry Q Rivets - 5/32" & 3/16" dia.), one of which is stored securely out of the way in the riveter handle.

P/N 12-03000.....

CHERRY G-29 HAND RIVETER

The Cherry® G-29 Hand Riveter is an efficient, compact, lightweight tool for installing Cherry® NUT-PLATE rivets. It comes equipped with a 728A9-3 nosepiece to install 3/32" rivets and has a 728A9-104 nosepiece stored in the handle for installing 1/8" rivets. The G-29 Riveter is 9-1/4" long, weighs just 13 ounces and is intended for use when access or power limitations prevent the use of Cherry® power tools.

P/N 12-00701.....

CHERRY G-27 HAND RIVETER KIT

The Cherry G-27 Hand Riveter is designed specifically for the most efficient installation of 1/8" CherryMAX Rivets. The G-27 Riveter is intended for use where access or power limitation prevents the use where access or power limitation prevents the use of Cherry pneumatic power tools. Overall length of the G-27 is 9-1/4", the net weight is just 13 ounces and the pulling head is an integral part of the tool. This compact, lightweight tool comes in a rugged plastic case.

P/N 12-03105.....

RIVET KIT

The Deluxe hand riveter kit includes 200 assorted Klik-Fast rivets in popular sizes. The molded plastic case houses and protects the tool, rivets. G-28 Rivet Gun not included. Weight 4 lbs.

P/N 12-03100.....

120° FLUSH DIMPLING TOOL

This unique tool for 1/8" 120° countersunk "Pop" rivets attaches to the Cherry G-28 standard hand "Pop" rivet gun. Simple design makes dimpling foolproof, quick and easy, with no cracking of metal. For use on aluminum to .040" thickness.

P/N 17014.....

ADJUSTABLE RIVET SPACER

For uniform spacing of rivets, bolts, nails, etc. Unique fan design expands to 36". Equally spaces up to 20 holes between 2 given points. Made of 301 stainless steel.

P/N 12-11700.....

10 Hole spacer P/N 12-00184.....

RIVEDRILL™

Allows operators to set up to 14 rivets per minute - twice as many as can be set by standard hand tools. The RiveDrill is ergonomically friendly, requiring just 6.6 lbs. of pressure to operate, compared to 77.2 lbs. required for hand tool operation. Excellent for working on aircraft, autos, or boats. The RiveDrill™ can be quickly inserted into a 3/8" reversible power drill as any standard drill bit would and is able to set any standard blind rivet up to 3/16" aluminum. The shank of the rivet is expelled when the drill is operated in the "reverse" mode. (For cordless electric power drills, a minimum 12V battery is recommended.) Nosepieces for 1/8", 5/32", & 3/16" sizes are included. RiveDrill™ Specifications: • Model 110 • Wt: .618 Lbs. (280 grams) • Length: 5.5 in. (1441 mm) • Diameter: 2.4 in. (60 mm) • Battery for cordless drill: 12V • Nosepieces included: 1/8", 5/32", 3/16" • Drill Types: Cordless, Electric, Pneumatic • Rivet capacities: 1/8", 5/32", 3/16" aluminum standard rivets; 1/8", 5/32" steel standard rivets; 1/8" stainless standard rivets.

P/N 12-00253.....

ULTRALITE NUTPLATE DRILL MOTOR

Ergonomic, lightweight design. Only one hand required to locate, drill & countersink both holes. Easily convert rivet spacings with interchangeable foot attachments. Available in single wing, double wing & mickey mouse models. Accommodates all nutplate spindle spacings from 0.219" to 1.125". Fully adjustable feed rate. 600 or 7,000 RPM

P/N 12-01376.....

SWIVEL RIVETING TOOL

Rotates 360° and rivets in any position. High leverage handles for added power. Hardened steel construction for long life. Extended nose for hard to reach places. Will pull 3/32", 1/8", 5/32", and 3/16" rivets. Model TP844.....

P/N 12-00365.....



ATS AIRCRAFT RIVET GUN #2602

So controllable you can easily buck rivets as small as 3/32" to as large as 3/16".

P/N 12-18340.....

RIVET SET MAX FOR 2602 RIVET GUN

3/32", 1/8", 5/32" and 3/16" rivets.

3-1/2" (5 pcs. straight, includes flat) P/N 12-18341.....

3-1/2" (4 pcs. offset) P/N 12-18342.....

5-1/2" (4 pcs. straight) P/N 12-18344.....

PROFESSIONAL HAND PLIER RIVET TOOL



Professional Hand Plier Rivet Tool is 50% easier to use than other hand tools. A patented compound link designed does the work for you. A shorter grip opening ergonomically designed for one hand operation. Grips cover the length of the lever and body, and soft handles are contoured to fit the hand.

The wrench and nosepieces (3/32", 1/8", 5/32", & 3/16") are stored in the handle of the tool. Excellent for use on Cherry and other standard pop rivets.

Features: • Robust aluminum casting and vanadium steel handle design • Setting capacity: aluminum rivets up to 3/16" (4.8 / 5.0mm) body diameter • Contoured handle grips for comfort • Rivet retaining handle design for one-handed riveting • Supplied with nosepieces for 3/32", 1/8", 5/32" & 3/16" (2.4mm, 3.2mm, 4.0mm & 4.8mm) rivets • Supplied nosepiece wrench • Length: 9.65" (245mm) • Weight: 1.3 lbs. (0.6 kg)

P/N 12-00178.....

HEAVY DUTY RIVETER



Includes four nosepieces to set rivet diameters from 3/32" up to 3/16". Convenient lock chain keeps handles closed when tool is not

in use. Made in U.S.

P/N 12-18352.....

3M™ RIVETERS TAPE

3M™ Riveters Tape 685 Transparent Film with Green Adhesive, 1.7 mils (.043 mm) Polyester film with a rubber-strip coated along edges of tape only and tack-free center Window

P/N 12-18355.....



FOR MORE 3M™ PRODUCTS SEE PAGES 345-352

COMBINATION RIVET-RIVNUT TOOL

The D100-RN hand operated hydraulic tool is ideally suited to the needs of the aircraft homebuilder. The tool develops 3,500 lbs. of pulling force which permits the installation of all Cherry Commercial Blind Rivets or any other Pop type rivets through 1/4" diameter as well as all CherryMax rivets through 3/16" diameter. Will not pull Cherry Lock rivets. The D100-RN quickly converts to a threaded blind nut setter to allow efficient installation of Rivnuts or similar blind nuts. The kit includes the D100 hydraulic tool with adapters for blind rivet and blind nut installation, rivet nosepieces for 1/8", 5/32" and 3/16" diameter blind rivets, blind nut pull-up studs with nosepieces for 6-32, 8-32, 10-32 and 1/4-28 Rivnuts, operating instructions and a rugged Plastic storage case. Size: 12-1/2" x 8-1/4" x 3". Weight: 3 lbs.

P/N D100-RN Kit.....

PNEUMATIC-HYDRAULIC BLIND RIVETER

The PT-100-1 power riveter, no larger than a compact drill motor, will install virtually any straight-pull blind rivet with installation loads of 3500 lbs. or less. All blind rivets from 3/32" dia. up to and including 1/4" dia. CherryMax rivets can be installed with the P-100-1. It utilizes a patented two-valve hydraulic pump actuated by 90 to 130 PSIG air pressure. Unlike most riveters, the P-100-1's collect/jaw assembly remains stationary while the outer sleeve-nosepiece assembly is hydraulically moved, creating sufficient load to install the rivet. Furnished with three nosepieces for 1/4", 1/8", 3/16"

& 3/32" rivets. Wt. 29 oz.

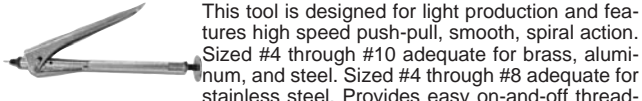
P/N 09-01070.....



TO

RIVNUT TOOLS – TAPE MEASURES

L-6000 RIVNUT SPEED DRIVER



This tool is designed for light production and features high speed push-pull, smooth, spiral action. Sized #4 through #10 adequate for brass, aluminum, and steel. Sized #4 through #8 adequate for stainless steel. Provides easy on-and-off threading of rivet nut with push-pull knob. Adjustable anvil for different length rivet nuts. Made in U.S.A. The C-6000 Speed Header is available for Rivnuts with the following thread sizes:

6-32 P/N 12-12600..... 8-32..... P/N 12-12700.....
 10-32 P/N 12-12800..... 1/4-28..... P/N 12-12900.....
CONVERSION KIT - For changing speed header to a different Rivnut thread size. Order by P/N .
 6-32 Kit P/N 12-13000 8-32 Kit..... P/N 12-13100
 10-32 Kit.. P/N 12-13200 1/4-28 Kit.. P/N 12-13300

L-7000 RIVNUT SPEED DRIVER

Designed for light production. Same as the L-6000 except made with a longer stroke for slotted rivet nuts. Made in U.S.A. Order by part number. Available in the following thread sizes: 6-32 (P/N 12-13605), 8-32 (P/N 12-13610), 10-32 (P/N 12-13615), and 1/4-28 (P/N 12-13620)



C-845 ECONOMY RIVNUT TOOL

Model L-845 wrench type rivnut tool is for field repair & experimental use. Adequate for aluminum, brass, steel, and stainless. Made in U.S.A. Order by part number. Available in following thread sizes:

6-32 P/N 12-13400..... 8-32..... P/N 12-13500
 10-24 P/N 12-13600..... 10-32..... P/N 12-13700
 1/4-20 P/N 12-13800..... 1/4-28... P/N 12-13900

L722 WRENCH TYPE RIVNUT TOOL

L722 Wrench Type Riv-Nut installation tool for the larger size fasteners 5/16" up to 1/2", tool comes with long arm allen wrench with plastic handle for easy installation.



| L722 wrench type header | Part No. | Price | L722 wrench type header | Part No. | Price |
|-------------------------|----------|-------|-------------------------|----------|-------|
| 5/16-18 | 12-00920 | . | 5/16-24 | 12-00921 | . |
| 3/8-16 | 12-00922 | . | 3/8-24 | 12-00926 | . |
| 1/2-13 | 12-00927 | . | 1/2-20 | 12-00928 | . |
| M10 | 12-00930 | . | | | |

WRENCH TYPE RIVNUT TOOL

Kit includes: TP726A, TP726B, TP726C, TP726N, and handy case. •Perfect for field repair and experimental use • Easy to use - inserts from one side of the work in seconds • Excellent for close quarters, overall height less mandrel 1-1/2" • Uses 3/4" open end or socket wrench • TP726N Notcher manually operated • Made in the U.S.A.



| Model | Part No. | Price |
|----------------|----------|-------|
| TP726A / 6-32 | 12-00348 | . |
| TP726B / 8-32 | 12-00349 | . |
| TP726C / 10-32 | 12-00350 | . |
| TP726N/Notcher | 12-00351 | . |
| TP726K / Kit | 12-00352 | . |

L-1000 ECONOMY HAND RIVNUT TOOL



The L-1000 economy hand rivnut tool is recommended for slotted rivet nut fasteners. Adequate for aluminum, brass, steel and stainless steel fasteners. Made in U.S.A. Order by part number. L-1000M is same tool, except in metric sizes.

| Model | Thread Size | Part No. | Price Ea. |
|---------|-------------|----------|-----------|
| L-1000 | (60-32) | 12-13645 | . |
| L-1000 | (8-32) | 12-13650 | . |
| L-1000 | (10-32) | 12-13655 | . |
| L-1000 | (1/4-28) | 12-13660 | . |
| L-1000M | (M6) | 12-13675 | . |

HEAVY DUTY RIVET CUTTER



This high quality, durable rivet cutter features all steel construction and cuts 1/16" to 1/4" diameter rivets. It is adjustable for 1/4" to 3/4" long rivets. P/N 12-16840

RIVET CUTTER



This handy rivet cutter, w/ 2 hardened blades, cuts rivets of any standard dia. from 3/32" to 3/16" without burring. The length of the cut rivet can be varied from 3/16" to 5/8" by means of 8 adjustable leaves attached to the cutting head. Plastic coated grips. Wt. 2 lbs. P/N 12-00200

BENCHTYPE RIVET CUTTER



Cuts 5 different diameter rivets, as well as wire and screws to 7 different lengths. Made of hardened and ground steel, this rivet cutter can be easily fastened to a workbench or held in a vise. Accepts rivet diameters 1/16, 3/32, 1/8, 5/32, 3/16, Will cut to lengths: 5/32, 7/32, 9/32, 11/32, 15/32, 17/32. P/N 12-00262

LUFKIN METRIC/INCH TAPE MEASURE



LUFKIN NO. W9210ME Has 1/2" blade, 3 meters long (equal to about 10 ft.). Markings are on one side only, with millimeters on upper edge and inches to 16ths on lower edge. White face.

Replacement Blade (RY23CMF)..... P/N 12-19700
 P/N 12-19750

STANLEY DECIMAL INCH TAPE MEASURE



This 12-ft. steel tape measure with 1/2" blade is graduated in tenths & hundredths of inches and also in fractions of inches (32nds). Very handy for all aircraft construction. A must for building composite aircraft.

P/N 33-272

SMART TOOL DIGITAL INCLINOMETER



Smart Tool is a unique digital inclinometer with up to 0.1° of repeatable accuracy. Place Smart Tool anywhere and it provides an accurate digital readout of angular reading instantly with no interpretation or guesswork needed. It measures and displays any angle through 360°, and readings can be relative to any angle. Smart level even calculates complicated slope measurements in either percent or inches per foot. It is sunlight viewable, features 3 sensitivity settings, and has 120-hour battery life with auto shut-off. Smart Tool is ideal for fixture work, tube bending, metal forming, body work, drive shaft angles, camber, caster, and A-arm angles, and a wide variety of other applications in the aircraft and race car building industries. Also ideal for coordinating and aligning flight control surfaces. Compact & rugged, Smart Tool is powered by any 9V battery.

Smart Tool in 24" rail..... P/N 12-21365
 Smart Tool in 48" rail..... P/N 12-21370

INSTANT ANGLE FINDERS



MODEL 200M (2-3/4" Dia. Dial) - Very versatile tool —ideal plumb bob. Magnetic base and center hang hole. Body of high impact ABS plastic. Dial protected by acrylic cover. Angle and rise chart on back.

P/N 12-14800

PRO 360 DIGITAL PROTRACTOR



The Pro 360 Digital Protractor is a revolutionary measuring tool that provides an immediate, digital reading of all angles in a 360° circle. The machined aluminum frame is a rigid, light weight, ultra-precise platform that allows the state-of-the-art sensor and its microprocessor circuit to provide unsurpassed accuracy throughout the Protractor's 360° range. Typical used by aircraft builders, maintenance personnel and airport operators. P/N 12-20125

PRO 3600 DIGITAL PROTRACTOR



The PRO-3600 is accurate to 0.01° and has an RS-232 compatible serial port for a computer interface and SPC records keeping.

P/N 12-00759

UNI-MAG WRIST BAND MAGNET



Uni-Mag is a wrist worn magnet that allows craftsmen to keep parts close to hand while working rather than in your pocket, on a ladder, or in your mouth. It holds nuts, bolts, screws, nails, tools, etc. A specially created magnetic field allows parts to lay flat on the face of Uni-Mag rather than upright. Save time and put an end to fumbling for small hardware with Uni-Mag. Comes complete with magnet and wristband. P/N 12-30110

RIVET CONVERSION KITS

Converts your conventional hand pop riveter into an economical RivNut installer tool.



| Size | Part No. | Price |
|-------------|----------------|-------|
| 6-32 | 12-13680 | |
| 8-32 | 12-13681 | |
| 10-32 | 12-13682 | |

HOMEBUILDERS RIVET NUT TOOL



This rivet nut tool is an inexpensive alternative to industrial rivet nut setters. Fast and easy to use for the builder who needs to make sturdy installations requiring a rivet nut fastener. It has unlimited uses. Its design enables the rivet nuts to be seated tighter than with conventional tools. This fastening tool has unique uses! The rivet nut possesses far greater load bearing capability than a regular sheet metal screw! Proudly made in U.S.A. Use it instead of a sheet metal screw. Its compact design takes up less room in your tool box. For use with aluminum or steel rivet nuts. Kit includes Rivet Nut Tool, Stabilizing Rod, and Qty 1 each of 6-32, 8-32 and 10-32 rivet nuts.

P/N 12-00968

TO

TOOLS



RECOIL KITS

The Recoil System is the simple way to repair stripped or damaged threads. It provides stronger and more efficient threads which have great holding power. The system is quick and easy to use and is ideal for alloys and other light materials. The recoil insert, which is larger in diameter than the tapped hole, is compressed during installation then allowed to spring back, permanently anchoring into place. The Recoil System consists of Recoil stainless steel helically wound precision inserts, high quality HSS taps and installation tools.

| Kit P/N | Size | Inserts Per Kit | Price |
|----------|------------------|-----------------|-------|
| 34600* | 3/16 - 10-32 | 10 | . |
| 34040* | 1/4 - 28 | 10 | . |
| 34050* | 5/16 - 24 | 10 | . |
| 33050** | 5/16 - 18 (UNC) | 10 | . |
| 34060* | 3/8 - 24 | 10 | . |
| 34070RC* | 7/16 - 20 | 5 | . |
| 34080* | 1/2 - 20 | 5 | . |
| 35060*** | M6x1 (Metric) | 10 | . |
| 35080*** | M8x1.25 (Metric) | 10 | . |
| 33004** | UNC Range Kit | 50 | . |
| 34004* | UNF Range Kit | 50 | . |

*UNF - Unified Fine Thread **UNC = United Coarse Thread
*** Metric = Metric & Spark Plug (ISO)

BLIND SKIN SCRIBE

For use on flush skin butt joints. This tool quickly and easily finds the cut line on the overlap of new metal. The lower leg slides under the new metal and hooks on the adjacent skin and the upper leg scribes the new skin as it pulled along. This tool is adjustable to suite the desired gap at the skin joint. This tool is especially handy when the old skin that is removed is damaged beyond usefulness as a pattern Note: For use on aluminum only.

P/N 12-00746.....

6-IN-1 COMBINATION SCREWDRIVER

• Industrial rated bits for extra long life • Heat treated 1/4" & 5/16" nut drivers • Interchangeable bits fit both Philips & Slotted screws • Bits: 3/16" Slotted; 9/32" Slotted; #1 Philips, #2 Philips.

P/N 12-14000.....

SCREWSTICK POCKET SCREWDRIVER

The Screwstick is a pocket screwdriver which accepts any common 1/4" tip. An extra tip is stored in the stainless steel shaft, and a heavy duty magnet holds tips firmly in place. A steel torque driver for stubborn applications is stored in the shaft. A rubber finger grip for holding plus a heavy duty pocket clip are included. Ideal for aviation, automotive, & many other applications. Great for mechanics.

P/N 12-20105.....

BALLPOINT HEX SOCKET DRIVER

3/32" Ballpoint Hex Socket Driver for use on hex head screws and nuts.

**This tool is commonly used with most avionics units like Honeywell Bendix/King and Garmin.*

P/N 12-02063.....

MASTER CHUCK

These versatile Master Key Chucks are available in two sizes (small & large) which open sizes 1/4" to 3/4". These tools allow you to open over 1200 different key chucks. Save wear on chucks by always having the proper key size available. The squared center of the keys opens acetylene tanks. Made of treated steel with black oxide finish.

Small..... P/N 12-30165.....
Large..... P/N 12-30170.....

ALL-SHARP DIAMOND SHARPENER

All Sharp is an innovative diamond sharpener that provides 4 different grit sizes on the same tool. All Sharp sharpens and fine sharpens tools and bits and cleans burrs on hard to reach parts and equipment. It's tough stainless body will not rust and All Sharp fits in any tool tray or pouch. Model ST-7..... P/N 12-21430.....

SCREW & BOLT SHEAR

The Screw & Bolt Shear is a bolt cutting device manufactured from very high quality tool steel which is hardened, tempered & machined to very close precision tolerances. The action of this tool is similar in nature to a "guillotine" design and is quite effective in cutting screws/bolts to specific lengths. The cutting body of the SBS-1 will accommodate screws or bolts in sizes of 4-40, 6-32, 8-32, 10-32, 10-24, 1/4-20 & 1/4-28. P/N 12-14250.....

BOJO PLASTIC PRY TOOLS

Soft, yet strong, all Bojo tools are made tough enough to pry, but not hard enough to damage. These 4 tools are provided as a set.

PLASTIC GENERAL WEDGE TOOL - General narrow point for reaching in narrow spaces.

PLASTIC STICKER/GASKET TOOL - Wedge tip, for use where a wide area is desired with a "soft" touch.

PLASTIC PRY BAR TOOL - The forked tip. The original for removing door panels and plastic grommets.

PLASTIC WEDGE PULLER TOOL - The forked tip. The original for removing door panels and plastic grommets.

Set of 4..... P/N 12-00748.....

MASTER INSTALLER KIT - Soft, yet strong, all Bojo tools are made tough enough to scrape, but not hard enough to damage. Set of 7.

P/N 12-00976.....

AIRCRAFT ASSEMBLY SCRAPER KIT - Soft, yet strong, all Bojo tools are made tough enough to scrape, but not hard enough to damage. Set of 4.

P/N 12-00977.....

DELUXE SCRAPER KIT - This is an expansion of our original 4 Piece Scraper Kit (which you currently buy in the medium strength material NGL). The new tips were design from request in the aviation fuel bladder cleaning industry for the US Air Force and US Navy overhaul programs. This new, stronger material is highly resistance to all forms of chemicals and sealants.

P/N 12-01858.....

| Description | Part No. | Price |
|----------------------------|----------|-------|
| Pry Tool Large LFT-2-N | 12-01859 | . |
| Sheet Panel ADJ Tool Kit | 12-01860 | . |
| Wire Guide Tool ATH-30-GNL | 12-01857 | . |

MULTI WEDGE NON-MARRING TOOL SETS

Multi Wedge non-marring tool sets allow homebuilders and avionics installers to remove panels, dash trim bezels, and other interior moldings, including door panels, without causing damage. Excellent for use in aviation, auto restoration, body work, electronics installation, upholstery etc. The Orange Set (3400) P/N 12-01671 is made of a softer polyethylene plastic blend for prying dash bezels, trims, and moldings without damaging the vehicles interior. The Black Set (3500) P/N 12-01672 is made of a more expensive high impact polycarbonate plastic for prying harder materials such as thin walled aluminum engine covers and sheet metal panels. **Product Benefits:** • Thin tip to fit into tiny gaps • Wide surface area to displace force, therefore reducing damage • Flexible • Slick surface for ease of prying • Built-in handle • Non-marring surface • Slim powerful angle • Curved tip for easy prying • Thing tip for tight gaps

Multi Wedge Set Orange (Soft) 3400 P/N 12-01671.....
Multi Wedge Set Black (Hard) 3500 P/N 12-01672.....

Both Multi Wedge Sets - Orange (Soft) / Black (Hard) 3400/3500
P/N 12-01673.....

AT 540M SCREW EXTRACTOR

This heavy duty screw extractor is designed with a .401 shank to fit most standard rivet guns and is held in place by a retainer spring. The square tip will accommodate 3/8" socket tool bit holders with inserts for removing hex, square, Phillips, or standard screws. Manufactured from high grade shock resistant tool steel.

P/N 12-01632.....

SCREW REMOVAL TOOL

• Useful in removing screws that are corroded or have stripped heads • .401 Parker taper shank for use in rivet gun • 3/8" square socket end with 1/4" hex adapter included • Use standard Phillips or Slotted insert bits • Rivet gun required P/N 12-00827.....

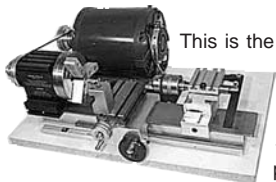
TORK-IT PRECISION TORQUE SCREWDRIVER

The Tork-It Model 36 precision torque screwdriver is a micro-setting device that is adjustable from 2 to 36"-lbs. in 0.5" -lb. increments. The tool complies with ANSI type 3 class 1 screwdriver grip torque wrench standards. Tork-It is supplied with a 1/4" pin-lock hex bit holder. 6-piece Hex-Bit set of 1.5mm, 2mm, 2.5mm, 3mm, 3/32 & 7/64" can be ordered separately.

Tork-It Screwdriver ... P/N 12-14330.....
Six Piece Hex Bit Set..... P/N 12-14335.....



LATHES – MILLS



MICRO LATHE

This is the machine you don't have to "baby". The Micro Lathe is a rugged, precision instrument. Its machined, ground and stabilized steel bed has a lifetime ball bearing spindle, coupled with a 6-speed positive v-belt drive. Spindle speeds in geometric progression from 525 to 5200rpm provide the power to "HOG" 1/8-inch cuts in mild

steel or the speed and accuracy to dust a few tenths. Other big lathe features include large .001 graduations on the cross slide dial, an all-angle tool post and a carriage depth stop. Adjustable gibs provide full compensation for carriage and cross slide wear. 2-yr. factory warranty. 15" bed. Comes factory assembled. The Unit pictured is a basic unit (P/N 12-00171) with an optional 3-Jaw Chuck, Boring bar(1097E), Tailstock (1150), Drill Chuck (1091), 1/4 HP 1725 RPM Motor (1021w), Motor Mount Bracket (1022), Mounting Board (1023), and Pulleys (1162 with 3M 500 belt). All accessories are sold separately and are not included in the base price. Note: Photo shows Lathe with all accessories which are not included (Available separately). P/N 12-00171 is basic lathe unit only.

General Specifications:

- Overall working accuracy: 0.0005"
- Max. bearing run out: 0.0004"
- Headstock normality to bed: .0004 in max error
- Max. taper bed dovetail over pins: 0.0001"
- All machine dovetails: 45°
- Bed width: 2 5/16 "
- Cross slide dial graduation: 0.001
- Cross slide screw: 1/4"-20 adjustment for back-lash take-up provided (jam nut arrangement)
- Carriage travel: 0.600" 1 rev. of hand wheel
- Max. spindle speed recommend: 7000 rpm
- Motor requirement: 1/8 – 1/4 HP
- Pulley type: Std. 5/8" bore, multi-step V-belt
- Length of headstock on ways: 2.875"
- Length of carriage on ways: 3.000"
- Width of cross slide on carriage: 2.000"
- Tool post: may be adjusted for angle cutting (chamfer, boring, etc.)

Capacity:

- Swing over bed: 4.5" (max. turning dia.)
- Swing over cross slide: 2 3/8"
- Overall length of bed: 15.5"
- Overall length of lathe: 16.5"
- Tool bit size: 1/4"
- Drill chuck capacity: 0 to 1/2"
- Distance between centers: 9.75"
- Carriage travel: 9"
- Cross slide travel: 1.75"

Spindle Specifications:

- Sealed precision ball: 1.5748 O.D. 0.6692 I.D.
- Spindle nose: 3/4" – 16 (3/4" SAE)
- Spindle hole: 0.343
- Spindle ID taper: 15° (30° included)
- Max. collet diameter: 9/32"
- Pulley size: 5/8" bore

| Accessories | Part No. | Price |
|---------------------|----------|-------|
| 3-jaw chuck | 12-01602 | . |
| Boring bar | 12-01603 | . |
| Tailstock | 12-01604 | . |
| Drill chuck | 12-01605 | . |
| 1/4 1725 RPM Motor | 12-01606 | . |
| Motor mount bracket | 12-01607 | . |
| Mounting board | 12-01608 | . |
| Pulleys 20" L | 12-01609 | . |
| Pulleys 12-1/2" L | 12-01710 | . |

MICRO MILL

The Micro Mill has effortless, chatterless table and mill head movement. This is due to the unique design of our oversized gibs, ground steel ways, massive carriage, steel bed and vertical mill head support which makes the Micro Mill ready for CNC upgrade if you desire.

Our small mill is really a scaled down big mill with manual operation. Other big mill features include large 0.001 graduations on friction adjustable micrometer dials for X, Y, and Z controls. Adjustable gibs provide full compensation for X, Y, and Z mill-ways wear. It all adds up to the best value in small mills. 15.5" table, power switch & cord included. Comes

factory assembled. 2-yr. warranty. P/N 12-00170

General Specifications:

- | | | | |
|--------------------------------------|---------------|------------|--|
| | Manual | CNC | |
| •Height: | 21-3/8" | 26-3/8" | •Z-axis: Steel box-ways |
| •Width: | 17" | 22" | •Pulley type: Std. 5/8" bore, multi-step V-belt |
| •Depth: | 16.75" | 21" | •Construction: steel, hard anodized aluminum on all moving components adjustable brass gibs and precision ground steel-ways. |
| •Weight: | 65 lbs. | 85 lbs. | |
| •Max. bearing run out: 0.0004" | | | |
| •Dovetails, X-axis: 45°; Y-axis: 90° | | | |
- Capacity:**
- Working Axis Travel: X=9.5", Y=5.5", Z=6.0"
 - Maximum Z-Distance to Table: 9.0"
 - Z-Axis Swivel: 90°
 - Column Rotation: up to 180°
 - Spindle Head Rotation: 90°
 - 6 Spindle Speeds: 525 to 5200 RPM
- Spindle Specifications:**
- Maximum Spindle Speed: 7000 RPM
 - Sealed Precision Ball Bearing: O.D.=1.5748, I.D.=0.6692
 - Spindle Nose: 3/4" -16 (3/4" SAE)
 - Spindle Hole: 0.343"
 - Spindle ID taper: 15° (30° included)
 - Max. Collet Diameter: 9/32"
 - Pulley size: 5/8" bore



AT429SXC MICRO MILLER

The AT429SXC Micro Miller features a .75 horsepower 20,000 RPM Sioux Tools motor. Cutter capacity is 3/4" and the unit will cut steel, aluminum and stainless steel. Spindle size is 1/4-28 and inlet pipe tap is 1/4" NPT. Air requirements: 90 PSI.

Tease trigger allows slow start up & exhaust porting is through the bottom of the handle. P/N AT429SXC

| Cutter Size | Cutter Dia. | Skirt Part No. | Skirt Price | Cutter Part No. | Cutter Price |
|-------------|-------------|----------------|-------------|-----------------|--------------|
| -1 | 5/16 | AT429A-1 | . | AT429B-1 | . |
| -2 | 3/8 | AT429A-2 | . | AT429B-2 | . |
| -3 | 7/16 | AT429A-3 | . | AT429B-3 | . |
| -4 | 1/2 | AT429A-4 | . | AT429B-4 | . |
| -5 | 9/16 | AT429A-5 | . | AT429B-5 | . |
| -6 | 5/8 | AT429A-6 | . | AT429B-6 | . |
| -7 | 3/4 | AT429A-7 | . | AT429B-7 | . |

NICHOLSON HACKSAW BLADES



Nicholson Bi-Metaloy hacksaw blades last twice as long as high-speed steel and 10 times longer than carbon steel. Can operate 20%-50% faster. Practically unbreakable.

GENERAL RECOMMENDATIONS FOR BLADE SELECTION

- 14 TOOTH** – For cutting heavy cross section and for soft materials where maximum chip clearance is needed. P/N 12-19514
- 18 TOOTH** – For general shop use, where blade is used on several jobs. P/N 12-19518
- 24 TOOTH** – For cross sections of 1/16" to 1/4", such as pipe, angles, small drill rod. P/N 12-19524
- 32 TOOTH** – For cutting stock up to 1/16" thick, such as 4130 tubing, sheet metal, BX. P/N 12-19532

PLYWOOD PLANER-SCARFFER ATTACHMENT



The Plywood Planer-Scarffer attachment enables you to make consistent scarf cuts quickly and easily. Easy installation and removal allows your planer to be readily used for scarfing as well as a regular planer. The Planer-Scarffer attachment is easily installed on the Makitan 1900B, Makitan 1911B and the Porter Cable 9125 planers. The attachment is not limited to these particular models or makes. With the Planer-Scarffer attachment, you can purchase standard size sheets of plywood and then join them together. This saves the extra cost of larger sheets and the shipping charges that would be required. By scarfing 4x8 sheets together, save 60% or more in the price of the plywood and make the cost more bearable. The attachment is mounted on a power-planer and cuts an 8:1 bevel. 2 models are available. One fits a 4-3/8" planer for plywood up to 1/2". The other is designed for a 3-1/4" planer and can be used on plywood up to 3/8". Specify planer type when ordering.

- 3.25" attachment for Porter/Cable 9125.....P/N 12-20110-1900
- 3.25" attachment for Makita n1900B.....P/N 12-20111-1911

CRAFTSMAN WOOD TOOL CHEST PLANS



Build this magnificent wood tool chest from our detailed professional plan. It's the kind of chest a craftsman dreams of. Features 10 drawers in the sturdy base, 12 more drawers plus a large top bin in the removable upper section. Overall size is 25"W x 10-5/16"L x 27"H. Ideal for the aircraft builder or aircraft mechanic. Plans only for Wood Tool Chest.

P/N 12-18350

CRAFTSMAN WOOD TOOL CABINET PLANS



Machinist's and woodworkers show your skill. Impress potential customers when they come into your shop, and see such a nice cabinet like this. This cabinet has removable trays for easy access to all hand tools. This cabinet when built by my plans, will have room for all your hand tools. As a bonus it has wheels on it for easy mobility. Size of this unit when completed 32"W x 19"D x 68"H

P/N 12-00978

TO

TOOL KITS — METAL FORMING TOOLS

RV BUILDER TOOL KIT



These RV builders tool kits are based on recommendations from the Van's Aircraft Builders Manual as well as on the tools that have been purchased from Aircraft Spruce by RV builders. It is an excellent tool kit for the construction of the RV4, 6, 7, 8, and 10 aircraft. They include an air drill, hand rivet squeezer,

rivet sets and other tools of the highest quality. If you are building a RV-9 order 100 extra 3/32" clecos and 50 extra 1/8" clecos. If you are building a RV-10 kit, order 175 extra 3/32" clecos and 125 extra 1/8" clecos as well as the RV-10 bucking bar. See Chart Below for Components Kit with 2x Rivet Gun.....P/N 12-00890.....
 Kit with 3x Rivet Gun.....P/N 12-00899.....
 RV-10 Bucking bar.....P/N 12-00903.....

BUILDER KIT COMPONENTS COMPLETE KIT

| Part No. | Description | Price |
|------------|---------------------------------|-------|
| 12-02004 | 2X Rivet Gun | |
| A1006-234X | RETAINER SPRING, BEEHIVE TYPE | |
| 12-00869 | AVERY PNEUMATIC AIR TOOL REG. | |
| 12-00816 | AIR DRILL (PISTOL TYPE)4500RPM | |
| 12-00872 | AVERY AIR TOOL OIL | |
| 12-00177 | HAND RIVETING & DIMPLING TOOL | |
| 12-00605 | AVERY POLY. DIMPLING MALLET | |
| 12-00320 | 3" YOKE for Hand Rivet Squeezer | |
| 12-00882 | AVERY 6PC SQUEEZER SET | |
| 12-00868 | AVERY DELUXE DIMPLE DIE KIT | |
| 12-00613 | AVERY POP RIVET DIMPLER 3/32" | |
| 12-00611 | AVERY VISE GRIP DIMPLER 3/32" | |
| 12-00888 | AVERY #615 BUCKING BAR | |
| TP-670 | BUCKING BAR 1-3/4 LB. | |
| SM10-4704 | STRAIGHT RIVET SET 1/8X 3-1/2 | |
| 12-00873 | AVERY 1/8" DBL OFFSET RIVET ST | |
| 12-00741 | AVERY FLUSH SWIVEL RIVET SET | |
| 12-07100-3 | AVERY BACK RIVET SET 4-1/8"L | |
| 12-00609 | AVERY FLUTING PLIER | |
| 12-00608 | AVERY HAND SEAMER 3-1/2" JAW | |
| 12-10105 | CLECO PLIERS | |
| M-3/32 | SHEET HOLDERS M-3/32 KWIK-LOK | |
| M-1/8 | SHEET HOLDERS M-1/8 KWIK-LOK | |
| M-5/32 | SHEET HOLDERS M-5/32 KWIK-LOK | |
| M-3/16 | SHEET HOLDERS M-3/16 KWIK-LOK | |
| SC-1/2-1/2 | 1/2" X 1/2" SIDE GRIP CLAMP | |
| SC-1/2-1 | SIDE GRIP CLAMPS P/N SC-1/2-1 | |
| 12-00632 | AVERY EDGE ROLLING TOOL | |
| 12-00618 | AVERY BACK RIVETING PLATE | |
| 12-00876 | AVERY CUT/POLISH WHEEL KIT | |
| 12-03900 | UNIBIT STEP DRILL # 3 | |
| 12-18355 | RIVET TAPE 3/4" GREEN | |
| 12-04214 | #40 SUPER COBALT DRILL (4PACK) | |
| 12-04217 | SUPER COBALT DRILL #30 (3PACK) | |
| 12-14221 | SUPER COBALT DRILL #21 (3PACK) | |
| 12-04219 | SUPER COBALT DRILL #27 (3PACK) | |
| 12-00886 | AVERY #19 COBALT DRILL BIT 2PK | |
| 12-00885 | AVERY #12 COBALT DRILL BIT 2PK | |
| 12-00884 | AVERY 1/4" COBALT DRILL BIT | |
| 12-05200 | DRILL BITS 12" LONG 3/32" | |
| 12-05300 | DRILL BITS 12" LONG 1/8" | |
| 12-00867 | AVERY 4PC DRILL STOP SET | |
| 12-00883 | AVERY 90° ANGLE DRILL KIT | |
| 12-01412 | AVERY MICRO-STOP CSNK CAGE | |
| 12-00879 | AVERY #40 X 3/8" CSNK CUTTER | |
| 12-00880 | AVERY #30 X 3/8" CSNK CUTTER | |
| 12-00881 | AVERY #20 X 1/2" CSNK CUTTER | |
| 12-00874 | AVERY 3PK PILOT PENS | |
| 1216 | STEEL RULES #1216 | |
| 12-00631 | AVERY SHOP HD RIVET GAUGE SET | |
| 12-00633 | AVERY RIVET LENGTH GAUGE | |
| M-1R | WISS SNIPS # M-1R | |
| M-2R | WISS SNIPS # M-2R | |
| 12-00622 | AVERY SPEED DEBURR-CSINK TOOL | |
| 12-00877 | AVERY ROYAL MULTI-BURR TOOL | |
| 12-00629 | AVERY DOUBLE EDGE DEBURR TOOL | |
| 12-00875 | AVERY SCOTCHBRITE CUT/PLSH WHL | |
| 01-00392 | CURVED TOOTH FILE 14" LONG | |
| 12-00870 | AVERY 3/32" DRIVE PIN PUNCH | |
| 12-00871 | AVERY 1/8" DRIVE PIN PUNCH | |
| 12-00889 | AVERY 360DEG SWIVEL POP RVT TL | |
| 13-19205 | JEPP ACFT SHT METAL & EA SM | |
| 13-11400 | STANDARD AIRCRAFT HANDBOOK | |

KIT BUILDER AIRCRAFT TOOL KIT



Initially designed for the RV3, RV4 and RV6 builders, this kit has proven to be very popular with virtually all aircraft home builders. It contains our most popular rivet hammer and is an excellent tool kit for RV builders. Weight: 40 lbs.

This 530 piece kit includes:

- 1 TP44 - Hand Seamer
 - 1 TP638 - Bucking Bar
 - 1 TP1112 - Bucking Bar
 - 1 TP116 - Hand Rivet Squeezer
 - 1 TP670 - Bucking Bar
 - 1 TP162 - Fluting Pliers
 - 1 TP216 - Tool Box w/Tote Tray
 - 1 TP97 - Air Tool Regulator
 - 1 TP4263 - Dimple & Die Set
 - 1 TP4264 - Dimple & Die Set
 - 1 TP45 - 1/4" Air Drill
 - 1 TP61 - Micro Stop Countersink
 - 1 TP91 - Flush Rivet Set w/Rubber Guard
 - 1 TP89 Straight Rivet Set (5 Pcs. SM10 Series)
 - 1 TP83 Standard or TP84 (special order) Rivet Gun (specify)
 - 1 TP88- Beehive & Quick Change Retainer Springs
 - 1 TP90- 10" Offset Rivet Sets (5 Pcs., SM20 Series)
 - 3 TP62 - Countersink Cutter Pilots (1 ea.: TP62-21, TP62-30, TP62-40)
 - 500 TP75 - Cleco Fasteners (325 pcs. TP75-3/32 & 175 pcs. TP75-1/8)
- P/N 12-001145.....

WHEELING MACHINE (BENCH MODEL)



Clearly, this is the most popular of in-home English Wheels. Trick out your custom-built bike or complete hobby projects without breaking the bank. Provides outstanding performance on small jobs like motorcycle tanks, tank covers, seat cowls and aircraft fillets. Versatile use - mount on bench, clamp in vise or use with optional welded stand.

Applications: Ideal for small metal crafting projects such as motorcycle gas tanks, hobby projects and small fillets for aircraft applications.

Specifications:

- * Thickness capacity for steel is 16 gage; for aluminum, up to 3/32".
 - * Features can be rolled into the center of a 44" panel.
 - * Can be mounted to a bench, clamped in a vise or used with the optional welded floor stand.
 - * Optional wheels and stand sold separately.
 - * Anvil yoke is adjustable on both sides of the axle support with thumb screws so the anvil wheel can be trued with the upper wheel.
- Wheeling Machine.....P/N 12-00571.....

ACCESSORIES

- Radius Wheel 5".....P/N 12-02026.....
- Radius Narrow Wheel 5".....P/N 12-02027.....
- Radius Narrow Offset Wheel5".....P/N 12-02028.....
- Radius Wheel 5" Set of 3.....P/N 12-02029.....
- Optional Stand for Wheeling Machine.....P/N 12-00575.....

WHEELING MACHINE (U-WELD MODEL)



This floor model machine is available in Kit Form. We supply: upper wheel, yoke, anvil wheels, screw lift assembly, kick wheel adjuster, quick release cam, steel casters & instructions. You supply steel tubing for frame.
 P/N 12-00570.....

TO

BEATER BAG



18" diameter; Double stitched; Can be filled with lead shot or sand.....P/N 12-00574.....
Optional Anvil Wheels
 3.25".....P/N 12-00576.....
 5.00".....P/N 12-00577.....
 8.50".....P/N 12-00578.....

TOOL KITS



MASTER KIT BUILDERS KIT

The Master Kit Builders Kit (TP176MKB) contains all the tools supplied in the "RV" tool kit plus many more. It is designed to supply all the major, most commonly used tools for the building sheet metal aircraft. These items can be used on RV's, Zenair, Questair and Mustang Aeronautics Kits as well as many, many others. A huge savings can be realized by purchasing this kit over the individual tool price. Wt. 50 lbs.

Kit Contains:

- 1 - TP83 or TP84 Rivet Gun (specify)
- 1 - TP89i - Straight Rivet Set (5 pcs., SM10 series)
- 1 - TP90i - 10° Offset Rivet Sets (5 pcs., SM20 series)
- 1 - TP91i - Flush Rivet Set with Rubber Guard
- 1 - TP88 - Beehive & Quick Change Retainer Springs
- 1 - TP97 - Air Tool Regulator
- 1 - TP96 Rivet Cutter
- 1 - TP45 - 3/8" Air Drill
- 1 - TP162 - Fluting Pliers
- 1 - TP61 - Micro Stop Countersink
- 3 - TP62 - Countersink Cutter Pilots (1 ea.: TP62-21, TP62-30, TP62-40)
- 500 - TP75 - Cleco Fasteners (325 pcs. TP75-3/32 & 175 pcs. TP75-1/8)
- 1 - TP74 Cleco Pliers
- 1 - TP44 - Hand Seamer
- 1 - TP266 - Deburring Tool
- 1 - TP638 - Bucking Bar
- 1 - TP647 - Bucking Bar
- 1 - TP670 - Bucking Bar
- 1 - TP1112 - Bucking Bar
- 1 - TP51 - Aviation Snip - Right
- 1 - TP52 - Aviation Snip - Left
- 1 - TP53 - Aviation Snip -Straight
- 1 - TP844 - Hand Blind Riveter
- 1 - TP636-1/8" Pop Dimple Die Set
- 6 - TP49-40 - Drill Bit
- 4 - TP49-30 - Drill Bit
- 2 - TP49-12 - Drill Bit
- 1 - TP49-1/4 - Drill Bit
- 4 - TP145DS - Drill Stops (#40, #30, #12, 1/4)
- 1 - TP312 - Circle Hole Cutter
- 1 - TP116 - Hand Rivet Squeezer
- 1 - TP116A Rivet Sets for TP116 (2 Flush & 4 Universal Head)
- 1 - TP4263-3/32" Dimple Die Set
- 1 - TP4264 - 1/8" Dimple Die Set
- 1 - TP722-Fluting Plier(small Flute)
- 1 - TP260 2 Drawer Tool Box (US902 pneumatic Cleco installation tool is optional, but recommended)

P/N 12-00832



MASTER AIRCRAFT TOOL KIT

This 121-piece complete Aircraft mechanics Kit is excellent for aircraft restoration, repair and manufacturing. It is ideal for the A & P mechanic, student and homebuilder. Kit comes with everything from sheet metal tools to riveting tools in a two-drawer tool chest. This kit includes the top quality riveting hammer manufactured in the U.S.A. Wt. 48 lbs.

48 lbs.

Kit Contains:

- 1 - TP83 / TP84 3X or 4X Offset Handle Rivet Gun
- 40 - TP75 - Cleco Fasteners (10 ea.: 3/32", 1/8", 5/32" & 3/16")
- 20-TP109M - Wing Nut Fasteners (5 ea.: 3/32", 1/8", 5/32" & 3/16")
- 4 - TP145DSK - Drill Stop Kit (1 ea.: #21, #30, #40 & #10)
- 3 - TP62 - Replaceable Pilots (1 ea.: #21, #30 & #40)
- 3 - TP54 - Threaded Drill Bits (1 ea.: #21, #30 & #40)
- 2 - TP88 - Spring Retainer Set
- 5 - TP89i - Straight Rivet Set Mix
- 5 - TP90i - Offset Rivet Set Mix
- 1 - TP91i - Flush Set with Guard
- 1 - TP638 - Bucking Bar
- 1 - TP1112 - Bucking Bar
- 1 - TP670 - Bucking Bar
- 1 - TP647 - Bucking Bar
- 1 - TP97 - Air Tool Regulator
- 1 - TP51 - Aviation Snip - Left
- 1 - TP52 - Aviation Snip - Right
- 1 - TP52 - Aviation Snip - Right
- 1 - TP53 - Aviation Snip-Straight
- 1 - TP61 - Stop Countersink
- 1 - TP45 - 3/8" Pistol Grip Air Drill
- 1 - TP46 - 90° Angle Attachment
- 1 - TP346 - Heavy Duty Rivet Cutter
- 1 - TP116 - Hand Rivet Squeezer
- 6 - TP116A - Squeezer Set Mix
- 1 - TP74 - Cleco Pliers
- 1 - TPMM250-1 - Strap Duplicator #40
- 1 - TPMM250-2 - Strap Duplicator #30
- 1 - TPMM250-3 - Strap Duplicator #21
- 1 - TPMM250-5 - Strap Duplicator #10
- 1 - TP57 - Cone Jaw Chuck
- 1 - TP162 - Fluting Pliers
- 1 - TP76K - Hand Punch Kit
- 1 - TP44 - Hand Seamer
- 1 - TP81 - Hand Nibbler
- 1 - TP206 - Aircraft Repair Manual
- 1 - TP260 - 2-Drawer Tool Chest
- 5 - TP123SG - Side Grip Fasteners
- 1 - TP70 - Chip Chaser
- 1 - TP675 - Air Vacuum

P/N 12-01126



DELUXE STUDENT TOOL KIT

This kit meets most school requirements for basic sheet metal tools. These high quality tools will take the student through school and into the profession for years of outstanding service. It contains the most popular rivet hammer and is a great starter kit. Wt. 14 lbs.

P/N 12-01127

Kit Contains:

- 1 - TP83 - Rivet Hammer
- 1 - TP2012 - Deluxe Air Tool Regulator
- 1 - A1006-234X - Beehive Spring Retainer
- 1 - A1007-234X - Quick Change Spring Retainer
- 1 - TP89 - 5 Pc. Straight Rivet Set Mix (AN470)
- 1 - TP670 - Bucking Bar
- 1 - TP346 - Rivet Cutter
- 40 - TP74 - Cleco Fasteners (10.: 3/32" 1/8", 5/32", 3/16")
- 1 - TP45 - 3/8" Air Drill
- 6 - TP49 - Drill Bits
- 1 - TP145DSK - 4 Pc. Drill Stop Kit
- 1 - TP61K - Micro Stop Countersink and 3 Cutters
- 1 - TP279 - Military Style Tool Pouch



GLASTAR TOOL KIT

This kit is designed for all new Glastar kit aircraft. The tools included are recommended by the manufacturer, specifically for the assembly of the sheet metal portion of the kit. Many of these tools are of top quality, and designed to last. They are all covered by a 30 day unconditional money back guarantee. P/N 12-00831

Kit Contains:

- 1 - SM10-4706i - 3/16" Universal Rivet Set
- 1 - TP83 - Rivet Gun
- 1 - SM10-4703i - 3/32" Universal Rivet Set
- 1 - SM10-4704i - 1/8" Universal Rivet Set
- 1 - TP91 - Flush Set w/rubber guard
- 1 - A1007-234X - Quick Change Retainer Spring
- 1 - TP61 - Stop Countersink
- 1 ea. - TP62 - 100° Countersink Cutter Pilots (12, 21, 30 & 40)
- 1 ea. - TP62A - 120° Countersink Cutter Pilots (30)
- 1 - TP116 - Hand Rivet Squeezer
- 1 - TP4263SB-1/8" Dimple Die Set
- 1 - TP4264SB - 3/32" Dimple Die Set
- 1 - TP45 - 3/8" Capacity Air Drill
- 250 - TP75 -3/32 - 3/32 Clecos
- 150 - TP75 -1/8 - 1/8 Clecos
- 25 - TP75-3/16 - 3/16 Clecos
- 1 - TP74 - Cleco Plier
- 1 - TP266 -Deburring Tool w blades
- 1 - TP838 90° Countersink/ Deburring Set
- 1 - TP216 - Tool Box
- 1ea. - TP638, TP721, TP760B - Bucking Bars
- 1ea. - TP49-11/64, 1/4, 1/16 - Assorted Jobber Drill Bits
- 1 - TP249 - 60 pcs. - #1-#60 Jobber Drill Bit Set
- 1ea. - TP55-30, 40 - 6" Aircraft Extension Bits
- 1 - TP55A-40-12" Side Grip Clamps
- 2 - TP538STC - Tension Clamp
- 1 - TP51K - Aviation Snip Kit - Left , Right, Straight
- 1 - TP46K - 90° Drill Attachment with Bits #40, #30, #21
- 1 - TP70 - Chip Chaser
- 1 - TP844 - Swivel Hand Riveter
- 1 - TPA5588 - Hook Scriber
- 1 - TP294AP - Center Punch
- 1 - BG383-1 - Tape Measure
- 1 - TP604B - 12" Ruler 32nds, 64ths, 10ths, 100ths, Graduations
- 1 - TP297-Spring Divider (Caliper)

P/N 12-00831

U.S. INDUSTRIAL MUSTANG KIT



This kit is designed especially for the assembly of the Mustang Kit aircraft. It is comprised of over 300 items, specifically required in the fabrication and assembly of this aircraft.

This 317 piece kit includes:

- 1 TP83(3x) or TP84(4x) Rivet Gun
- 1 TP91 Flush Rivet Set
- 1 SM10-4703 Rivet Set
- 1 SM10-4704 Rivet Set
- 5 TP641HC Handi-Clamp
- 25 TP75L-3/32 3/32 Cleco Fasteners
- 1 TP81 Hand Nibbler
- 4 TP49-30 Drill Bits
- 4 TP49-3/32 Drill Bits
- 4 TP49-40 Drill Bits
- 4 TP49-1/8 Drill Bits
- 2 TP49-12 Drill Bits
- 2 TP49-3/16 Drill Bits
- 1 TPA5611 Unibit Drill
- 1 TP294HD Auto Center Punch
- 1 TP735K Hand Pack Trial Kit
- 1 TPF56 Flat File
- 1 TP4263 Dimple and Die Set
- 1 TP4264 Dimple and Die Set
- 1 TP216 Tool Box
- 1 SM10-4705 Rivet Set
- 1 A1007-234X QC Retainer Spring
- 1 TP346 Heavy Duty Rivet Cutter
- 1 TP61K Stop Countersink Kit
- 1 TP722 Fluting Pliers
- 130 TP75-1/8 Cleco Fasteners
- 25 TP75L-1/8 Cleco Fasteners
- 80 TP75-3/32 Cleco Fasteners
- 1 TP74 Cleco Pliers
- 1 TP44 Hand Seamer
- 1 TP227G Duckbill Pliers
- 1 TP266 Deburring Tool
- 1 TP888-3 Hand Rivet Squeezer
- 1 TP116A Squeezer Sets
- 1 TP751 Bucking Bar
- 1 TP670 Bucking Bar
- 1 SM181 Swivel Flush Rivet Set
- Kit w/ TP83 gun (3x).....P/N 12-00347
- Kit w/ TP84 gun (4x).....P/N 12-00498

US INDUSTRIAL TP83 & TP84 RIVET GUN KIT



This complete kit contains all the basic tools required for most riveting applications. In addition, the tools are well organized in the molded plastic case, making it the perfect kit for the A & P student, mechanic, airline maintenance personnel or homebuilder.

This 21 piece kit includes:

- 1 TP83(3x) or TP84(4x) rivet gun
- 1 TP89i straight rivet set.
- 1 TP90i offset rivet set
- 1 TP91 flush set with guard
- 1 TP88 spring retainers (2 pc.)
- 2X, 3X, 4X and many
- 1 TP112 bucking bar
- 1 TP638 bucking bar
- 1 TP647 bucking bar
- 1 TP670 bucking bar
- 1 TP97 air tool regulator
- 1 A1142 air tool oil
- 1 TP216M molded plastic case
- Kit with TP83(3x) GunP/N 12-02009
- Kit with TP84(4x) GunP/N 12-02011

RIVETING HAMMERS

RIVETING HAMMERS



US 3X

These high quality riveting hammers are excellent for all light aircraft metal riveting applications. They feature a convenient offset handle (except Model US3AA which is straight handle) and come complete with retainer spring and regulator. All models feature metered teasing trigger, made in U.S.A.

| Part No. | Blows / Min. | Capacity | | Stroke | Length | Weight (Lbs.) | Price |
|----------|--------------|----------|-------|----------|----------|---------------|-------|
| | | Alum. | Bore | | | | |
| US1X | 3600 | 1/8" | 9/16" | 1-1/2" | 5-11/16" | 2 | . |
| US2X | 2580 | 1/8" | 1/2" | 2-1/4" | 6-11/16" | 2-1/4 | . |
| US3X | 2160 | 3/16" | 1/2" | 2-7/8" | 7-5/16" | 2-5/16 | . |
| US5X | 1560 | 1/4" | 3/4" | 2-11/16" | 6-11/16" | 4-3/4 | . |
| US7X | 900 | 3/8" | 3/4" | 5-13/16" | 8-5/16" | 6 | . |

"RECOILLESS" RIVETING HAMMERS



US 3R

In the early stages of developing a truly recoilless/fatigueless riveting hammer, it was determined that the tools must meet certain goals. The main goal being a reduction in low-frequency vibration in accordance with ISO Standard #5349-1986. In this standard are guidelines for the measurement and

assessment of human exposure to hand-transmitted vibration. As a result, the following has been achieved: •Ergonomic design: To maximize user comfort by achieving a relaxing, comfortable, lightweight and balanced tool •Compact tool size: Since aircraft riveting is never standard, a tool that will allow the best overall access • Retain user touch: A metered trigger which provides single or multiple blows per minute while maintaining the ability to set rivets in seconds • Further dampen noise output. • Least amount of parts: No similar tool is produced with fewer parts, thus enhancing reliability, but keeping it simple enough so that maintenance can be done by anyone.

Independent testing* has shown these tools will greatly lessen job-related effects of prolonged exposure to vibration & boost user productivity.

SPECIFICATIONS

| Part No. | Capacity | | Bore | Stroke | Blows per minute |
|----------|----------|-------|------|--------|------------------|
| | Alum. | Steel | | | |
| US3R | 3/16" | 5/32" | 1/2" | 3" | 1900 |
| US5R | 1/4" | 3/16" | 1/2" | 5" | 1400 |

| Part No. | Rivet Set dia | Overall Length | Weight | Air Inlet | Price |
|----------|---------------|----------------|----------|-----------|-------|
| US3R | .401 | 7-7/8" | 3 Lbs. | 1/4 NPT | . |
| US5R | .401 | 9-7/8" | 3.5 Lbs. | 1/4 NPT | . |

PNEUMATIC RIVET SQUEEZER



Heavy duty industrial tools are manufactured to exacting standards to insure long service life. All critical parts, including the yoke, are fabricated from 4130 steel and heat treated to Rc 42-46. These rivet squeezers have earned a reputation for durability and reliability through years of service on the production lines of major airframe manufacturers such as Grumman, Piper, Beech and Cessna. Easily operated by one hand. All replacement parts and other yoke designs available. Features feathering throttle.

| SPECIFICATION | MODEL | |
|---------------------------|--------|--------|
| | | 3000 | 6000 |
| Max. Force | 3000 | 6000 |
| Rivet Capacity Dural | 3/16" | 3/16" |
| Steel | 5/32" | 5/32" |
| Standard Yoke Reach | 2" | 2" |
| Air Hose Size | 1/4" | 1/4" |
| Set Travel | 9/16" | 9/16" |
| Recommended Line Pressure | 90PSI | 90PSI |
| Weight | 6 LBS. | 6 LBS. |

3000..... P/N 12-03400.....
6000..... P/N 12-03500.....

AIRCRAFT RIVET GUNS



2X

The standard tool used in aircraft manufacturing plants such as Boeing, Rockwell, Lockheed etc., is completely interchangeable with Chicago Pneumatic. These tools are slow hitting with excellent finger tip control. Accepts all .401 shank rivet sets and attachments. All guns are brand new and carry a full 1 year warranty.

| Part No. | Blows / Min. | Capacity Alum. | Bore | Stroke | Weight (Lbs.) | Price |
|----------|--------------|----------------|------|---------|---------------|-------|
| 2X | 2580 | 1/8" | 1/2" | 2-1/4" | 2.7 | . |
| 3X | 2160 | 3/16" | 1/2" | 2-7/8" | 3.4 | . |
| 4X | 1740 | 1/4" | 1/2" | 3-1/16" | 3.6 | . |

TP82 .TP83, AND TP84 RIVET GUNS



This "X" type feathering trigger riveter is the only rivet gun that allows you to slowly begin riveting without damage to the skin. This is critical in performing riveting operations. This gun is used by aircraft mechanics worldwide. It's also the perfect tool for kit builders.

NOTE: Long term exposure to low frequency vibration caused by riveting may be harmful to your hands and arms. We suggest you take frequent breaks when riveting to reduce this exposure. Features: * Takes .401 shank rivet sets * Lightweight aluminum handle * Price includes spring retainer & regulator (TP97) * Precision machined hardened and ground valve * "Sure Grip" powder coated finish * Teasing trigger * Precision machined and hardened cylinder for long life. • Made in the U.S.A.

2X Rivet Gun (1/8" Capacity) P/N 12-02002.....
3X Rivet Gun (3/16" Capacity)..... P/N 12-02003.....
4X Rivet Gun (1/4" Capacity) P/N 12-02008.....

AT590RGK 3X RIVET GUN KIT



This kit provides all the essentials for straight and offset riveting. Four of the most commonly used bucking bars; eight cupped sets for 3/32", 1/8", 3/16" AN470 universal head rivets; 3 flush sets for AN426 rivets; 2 retainer springs; an air regulator for adjusting hammer blows; tool oil; an attractive molded rubber case for organization and storage; and a 3X rivet gun. Ideal for structural and sheet-metal technicians, home builders, & students. P/N 12-00240.....

SPECIAL DIMPLING & RIVET SET FOR RV4, RV6, RV8 AIRCRAFT



This 21-piece dimpling and riveting set was designed especially for use in the construction of the Vans RV aircraft series, and is ideal for a variety of other aircraft as well. All the riveting sets and dimple dies are made from heat treated stainless steel.

* Dimple dies size stainless steel – rivet set are steel. All are heat treated.

Special RV Dimpling and Riveting Kit includes: Set holder block, Cup sets, Flat sets, and Spring back dimple dies.

Dimple Dies – 3/32", 1/8", 5/32" rivet size. 6-32, 8-32, 10-32 screw sizes.

Cup Sets – 3/32", 1/8", 5/32".
Flat Sets – 1/16", 1/8", 3/16", 1/4", 5/16", 3/8", 1/2". Polyethylene set.
21-piece kit P/N 12-00450.....

7-PC RIVET SET



Holder includes 3/32", 1/8", 5/32 and 3/16 cups for AN470 rivets, plus 3 flat sets for AN426 rivets. To be used with pneumatic or hand rivet squeezer. P/N 12-00555.....

6-PC DIMPLE DIE SET RIVET SIZE



Holder includes springback dimple dies for 3/32", 1/8" and 5/32" rivets. To be used with pneumatic or hand rivet squeezer. P/N 12-00560.....

6-PC DIMPLE DIE SET SCREW SIZE



Holder includes springback dimple dies for 6-32, 8-32 and 10-32 screw sizes. To be used with pneumatic or hand rivet squeezer. P/N 12-00565.....

TO

RIVET SETS FOR RIVETING HAMMERS



RIVET SETS STRAIGHT .401 SHANK (AN470)

| Length "L" | Part Numbers | | | | | Price |
|------------|------------------|-----------------|------------------|------------------|-----------------|-------|
| | Rivet Size 3/32" | Rivet Size 1/8" | Rivet Size 5/32" | Rivet Size 3/16" | Rivet Size 1/4" | |
| 3-1/2" | SM10-4703 | SM10-4704 | SM10-4705 | SM10-4706 | SM10-4708 | . |
| 5-1/2" | SM11-4703 | SM11-4704 | SM11-4705 | SM11-4706 | SM11-4708 | . |
| 7-1/2" | SM12-4703 | SM12-4704 | SM12-4705 | SM12-4706 | SM12-4708 | . |
| 10-1/2" | SM13-4703 | SM13-4704 | SM13-4705 | SM13-4706 | SM13-4708 | . |



RIVET SETS STRAIGHT .498 SHANK (AN470)

| Length "L" | Part Numbers | | | | | Price |
|------------|------------------|-----------------|------------------|------------------|-----------------|-------|
| | Rivet Size 3/32" | Rivet Size 1/8" | Rivet Size 5/32" | Rivet Size 3/16" | Rivet Size 1/4" | |
| 3-1/2" | SM30-4703 | SM30-4704 | SM30-4705 | SM30-4706 | SM30-4708 | . |
| 5-1/2" | SM31-4703 | SM31-4704 | SM31-4705 | SM31-4706 | SM31-4708 | . |
| 7-1/2" | SM32-4703 | SM32-4704 | SM32-4705 | SM32-4706 | SM32-4708 | . |



FLUSH SETS STRAIGHT .401 SHANK (AN470)

| Dia. | Length | P/N | Price | Dia. | Length | P/N | Price |
|--------|--------|------|-------|--------|--------|------|-------|
| 1" | 2-1/2" | SM90 | . | 1-1/2" | 5-1/2" | SM95 | . |
| 1" | 3" | SM91 | . | 1-1/2" | 3-1/8" | SM96 | . |
| 1" | 5-1/2" | SM92 | . | 1-3/4" | 3-1/4" | SM97 | . |
| 1" | 7-1/2" | SM93 | . | 1-1/8" | 2-1/4" | SM98 | . |
| 1-1/4" | 3" | SM94 | . | 1-1/4" | 2-1/4" | SM99 | . |

NOTE: These flush sets are universal for any diameter rivet. Order by part number referencing the length and diameter of the flush set required.



FLUSH SETS STRAIGHT .498 SHANK (AN470)

| Dia. | Length | P/N | Price | Dia. | Length | P/N | Price |
|------|--------|-------|-------|--------|--------|-------|-------|
| 1" | 2-1/2" | SM100 | . | 1-1/2" | 3-1/8" | SM106 | . |
| 1" | 3" | SM101 | . | 1-3/4" | 3-1/4" | SM107 | . |
| 1" | 5-1/2" | SM102 | . | 1-1/8" | 2-1/4" | SM108 | . |
| 1" | 7-1/2" | SM103 | . | 1-1/4" | 2-1/4" | SM109 | . |

NOTE: These flush sets are universal for any diameter rivet. Order by part number referencing the length and diameter of the flush set required.

SETS FOR HIGH SHEAR RIVETS .401 SHANK



Length on all is 3-1/2"

| Rivet Size | Part No. | Price |
|------------|----------|-------|
| 1/8" | SMHS10-4 | . |
| 5/32" | SMHS10-5 | . |
| 3/16" | SMHS10-6 | . |
| 1/4" | SMHS10-8 | . |



RIVET SETS OFFSET .401 SHANK (AN470)

| Length "L" | Part Numbers | | | | | Price |
|------------|------------------|-----------------|------------------|------------------|-----------------|-------|
| | Rivet Size 3/32" | Rivet Size 1/8" | Rivet Size 5/32" | Rivet Size 3/16" | Rivet Size 1/4" | |
| 3-1/2" | SM20-4703 | SM20-4704 | SM20-4705 | SM20-4706 | SM20-4708 | . |
| 5-1/2" | SM21-4703 | SM21-4704 | SM21-4705 | SM21-4706 | SM21-4708 | . |
| 7-1/2" | SM22-4703 | SM22-4704 | SM22-4705 | SM22-4706 | SM22-4708 | . |
| 10-1/2" | SM23-4703 | SM23-4704 | SM23-4705 | SM23-4706 | SM23-4708 | . |

FLUSH SETS OFFSET .401 SHANK (AN470)



| DIA | Length | P/N | Price |
|-----|--------|-------|-------|
| 1" | 3-1/2" | SM140 | . |
| 1" | 7-1/2" | SM142 | . |
| 1" | 5-1/2" | SM141 | . |

NOTE: These flush sets are universal for any diameter rivet. Order by part number referencing the length and diameter of the flush set required.

BUCKING BLOCKS

Designed to be used with a riveting gun or by striking with a hammer. For aid with dimpling and/or riveting applications. Acts as a holding fixture for .187 shank dimple dies or rivet sets. Weight: 4 lbs. P/N 12-00805.....



SWIVEL DIMPLING TOOL .401 SHANK

*Can be used with TP93 Bucking Block

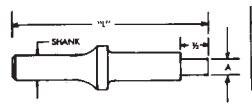
***Example: To order L = 3-1/2 - 1/8" Rivet specify: SM10SP-4264

| Model # | "L" | Type | Price |
|-----------|--------|-------|-------|
| SM10SP*** | 3-1/2" | Punch | . |
| SM10SD | 3-1/2" | Die | . |

| Cupings | 3/32 | 1/8 | 5/32 | 3/16 |
|-------------------------|------|------|------|------|
| For 100° Rivets (AN426) | 4263 | 4264 | 4265 | 4266 |



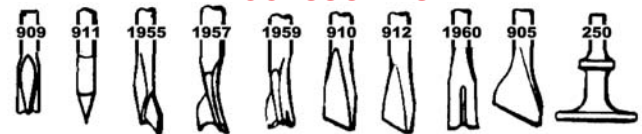
KNOCKOUT PUNCHES FOR HIGH SHEAR RIVETS .401 SHANK



Length on all is 3-3/8"

| Rivet Size | Part No. | Price |
|------------|------------|-------|
| 1/8" | SMHS401K-4 | . |
| 5/32" | SMHS401K-5 | . |
| 3/16" | SMHS401K-6 | . |
| 1/4" | SMHS401K-8 | . |

.401 SHANK RIVETING HAMMER ACCESSORIES



| Description | P/N | Price | Description | P/N | Price |
|-------------------|------|-------|------------------|------|-------|
| Twin Blade Cutter | 909 | . | Chisel | 910 | . |
| Moil Point | 911 | . | Rivet Buster | 912 | . |
| Body Ripper | 1955 | . | Spotweld Breaker | 1960 | . |
| Panel Cutter | 1957 | . | Scraper | 905 | . |
| Metal Trimmer | 1959 | . | Flush Set | SM97 | . |

RETAINER SPRINGS



Retainer springs comes in two styles: Quick Change Type: Designed to make possible speedy changing of rivet set in rivet gun. Beehive Type: Designed as a fixed type to securely hold rivet set in rivet gun.

| Rivet Hammer Model # | Beehive Type | | Quick Change Type | |
|----------------------|--------------|-----------|-------------------|-----------|
| | Part No. | Price ea. | Part No. | Price ea. |
| 1X-2X-3X-4X | A1006-234X | . | | |
| 5X-7X-9X | A1006-579X | . | A1007-234X | . |
| E3-E5 | A1006-234X | . | A1007-100B | . |
| 100B-200B | | | A1007-234X | . |
| AVC12-AVC13 | A1006-AVC | . | | |
| 3R-5R | A1006-234X | . | | |

RIVET SET HOLDER



This "no mar" rivet set holder was developed by an RV-7 builder who needed to drive rivets in tight spaces without scratching the surrounding metal, such as happens when using standard metal spring type set holders. Just attach the holder to a recessed (mushroom) rivet set, backside rivet sets, or any other rivet too set. A small slit in the half inch hole allows the set holder to stretch over the shoulder of the recessed and backside tools. P/N 12-01391.....

BACK RIVETING RIVET SET



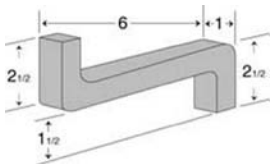
For back riveting flush rivets on RV control surfaces and other home-builts. Has a plastic Delrin sleeve with spring to hold multiple sheets of aluminum together while riveting. 0.401 shank x 4-1/8 inches long.

Back Rivet Set 3-1/2" long P/N 12-07100-3..... ea.

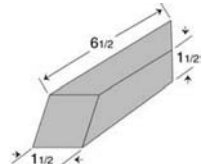
TO

BUCKING BARS

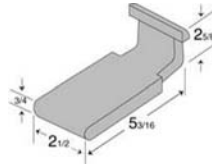
Our bucking bars are cast with ductile iron to insure non-porous finish which is very important in order to have a highly polished finished surface. They are heat treated to 38-42 RC and therefore can be repolished many times without changing hardness. This wide selection of sizes, shapes, and weights enables the aircraft builder to pick the proper bar for his job. Made in the U.S.A.



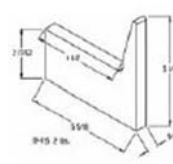
12-01302 2-3/4 Lbs.



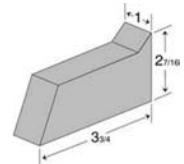
12-01303 3 Lbs.



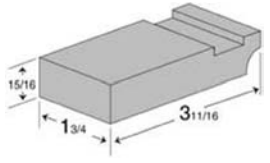
12-01305 3 Lbs.



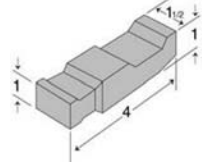
12-01306 2 Lbs.



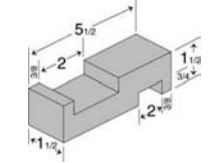
12-01307 1-3/4 Lbs.



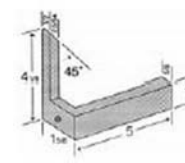
12-01308 1-1/2 Lbs.



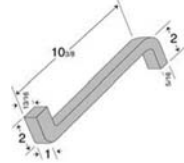
12-01309 1-1/4 Lbs.



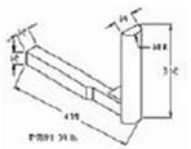
12-01310 2-3/8 Lbs.



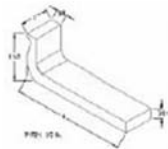
12-01311 1-1/4 Lbs.



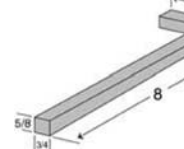
12-01312 3-5/16 Lbs.



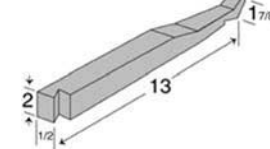
12-01313 1-1/4 Lbs.



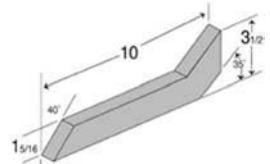
12-01314 1/2 Lbs.



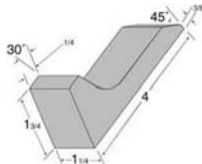
12-01315 1-1/2 Lbs.



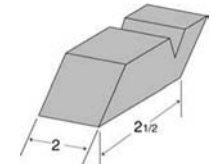
TP-683 3-1/4 Lbs.



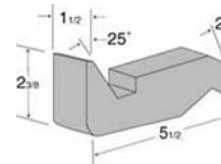
12-01319 1-3/4 Lbs.



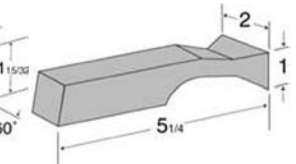
12-01320 2-1/2 Lbs.



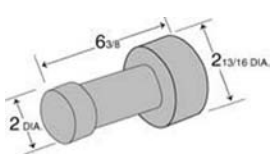
12-01280 1-3/8 Lbs.



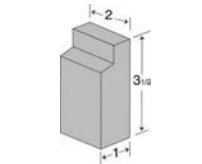
12-01281 3 Lbs.



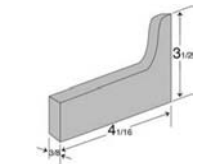
12-01282 1-3/8 Lbs.



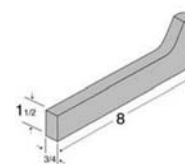
12-01284 6 Lbs.



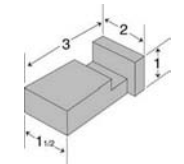
12-01285 1-1/2 Lbs.



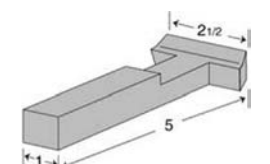
12-01286 3/4 Lb.



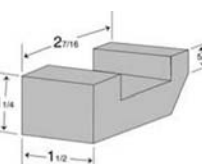
12-01287 2-3/4 Lbs.



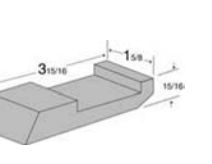
12-01288 1-1/4 Lbs.



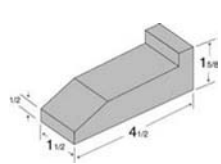
12-01289 1-1/4 Lbs.



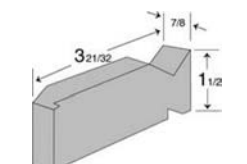
12-01290 1 Lb.



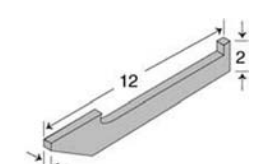
12-01291 1-1/4 Lbs.



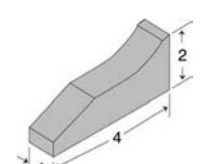
12-01292 2 Lbs.



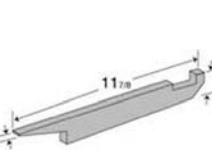
12-01293 1-1/4 Lbs.



12-00828 2-1/4 Lbs.



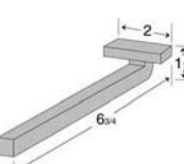
12-00841 1-1/2 Lbs.



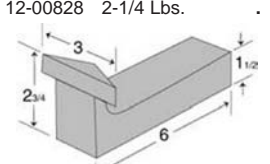
12-01294 2 Lbs.



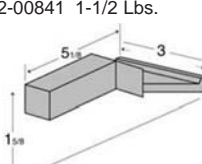
AT-618 2-1/4 Lbs.



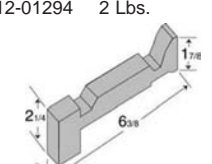
12-01295 1 Lb.



12-01296 4-1/4 Lbs.



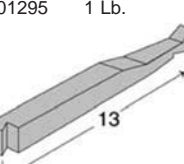
12-01297 1-3/8 Lbs.



12-01298 1-3/4 Lbs.



12-01299 2-1/4 Lbs.



12-01301 3-1/4 Lbs.

TO

RIVET TOOLS – SHEARS

RIVET REMOVAL TOOL

This quality tool enables the user to quickly and accurately remove rivets and blind fasteners. The tool comes complete with drill bits and guides, #40, #30, #21, and #10. Made in U.S.A.



REPLACEMENT BITS

P/N 12-01128 P/N 12-01130.....
P/N 12-01129 P/N 12-01131.....

HAND RIVETING & DIMPLING TOOL

Used for hand dimpling of skins and small parts and for hand riveting of parts, assemblies, and spars. This tool maintains alignment of the dies to each other, and insures proper alignment to the work surface for superior dimpling results over either rivet gun or free-hand dimpling methods.



Features include: • 22" deep x 4" tall throat • Heavy wall 1" x 2" steel tube arm • Heavy wall aluminum channel base • Bronze 1/2" I.D. guide bushings for shafts • Heat treated and

centerless ground stainless steel driver shaft (2)– one shaft has flat end for riveting with rivet gun & one shaft accepts 0.187" shanks for dimple dies & sets. • 1.5" extension shaft for dies • Adjustable die holder block. Rivet Tool Return Spring Kit now included (Spring, collar and wrench). Great for one handed dimpling of skins and parts. Uses rivet, dimple and die sets with .187" shank. (Dies and sets sold separately)

P/N 12-00177.....

DRDT-2 RIVET DIMPLER

DRDT-2 (AKA Dash 2) is a welded steel c-frame rivet dimpler. Replaces the common impact c-frame rivet dimplers of the past. With its ample mechanical advantage, dimpling is fast, easy, less fatiguing and safe on the skins. With a fully adjustable set holder you can achieve consistent and accurate dimples. The DRDT-2 incorporates a new low force spring return system that prevents skin damage from the

accidental release of the handle without increasing the force required to dimple. 22" throat depth allows dimpling of up to 44" wide sheets. The relief under the lower frame member provides dimpling access to spars, ribs, leading edge skins. Designed and analyzed using state of the art engineering tools the DRDT-2 can handle all your dimpling needs on your project. The DRDT-2 is painted with an industrial powder coat giving one of the toughest finishes available. Features: • Weight: 60 lbs • Size: 28"X16"X3" • Capacity: Up to 22" depth • Gap: 4" • Skin thickness: Up to 0.040" Aluminum. Dimple Dies: 3/16" shank Diameter.

P/N 12-00907.....

AIRCRAFT BUILDER CALIPERS



Our Aircraft Builder's Calipers feature an easy-to-read dial, 6" length capacity, and measurement in 4 dimensions outer, inner, depth, and step. The dial has .001" graduations for case and bullet mea-

surements. A chart that shows maximum and trim lengths for all popular calipers, plus a fitted case with instructions, are included. Ideal measurement tool for aircraft mechanics and homebuilders. Available in plastic or stainless steel.

Plastic Calipers P/N 12-30215
Stainless Steel Calipers P/N 12-30220

DIGITAL FRACTION CALIPERS



The Digital Fractional Caliper brings you three universal systems of measurement, making it an equally practical choice for both

professional and do-it-yourself projects. The high-contrast digital display easily switches between inches, millimeters and fractions, with guaranteed accuracy to 0.001". In addition, the rugged stainless steel design delivers accurate readings of inside, outside, step and depth measurements. The Fraction+ comes with a foam padded plastic case for safe storage when not in use.

Features * Stainless Steel Caliper. * Tri-Mode digital display – inches, millimeters, and fractions. * For making inside, outside, depth and step measurements. * Resolution 0.0005" (0.01mm). * Accuracy 0.001" (0.02mm). * Auto on/off feature preserves battery life. * Bar scale is graduated in inches and millimeters. * Free-wheeling friction roller advances and retracts slide. * Extendable depth gage for use in slots and small holes. * Etched and filled black graduations. * Convenient foam-padded case for storage.

Digital Fraction Caliper - 6" P/N 12-02012
Digital Fraction Caliper - 8" P/N 12-02013
Digital Fraction Caliper - 12" P/N 12-02014

RIVET SHANK REMOVAL PLIERS



Tired of battling those rivet shanks stuck in the ribs and under other underlying structures after you have drilled the heads off and removed the skin? The Rivet Shank Removal Pliers will make short work of this unpleasant task and turn a two man job into a one man

job. A handy, patented tool which will reduce labor time and costs.
P/N 12-00745

POWER SHEAR



This air-powered shear cuts straight lines or curves up to 180 inches/minute. An ideal shear for any aircraft builder. Cuts up to 18 gauge mild steel. Width of cut: 7/32". Length: 8-1/4". Wt. 2.14 Lbs.

P/N 12-01330

ROUTER



This air-powered router is very light weight and features a straight handle and rear exhaust. Base is 1-1/2" and router guide is included. RPM: 20,000. Router shank: 1/4". Length: 6". Wt.: 1-1/2.12 Lbs. Made in U.S.A.

P/N 12-01321

CHIP CHASER



This handy, economical tool removes chips and burrs on metal between sheets after rivet holes have been drilled. A recommended tool for any aircraft builder involved with sheet metal work.

Router P/N 12-01304

WISS ANGLE SNIPS



The new M8R and M9R compound action snips possess the same outstanding durability as all the other products in the wide Wiss® compound action line, but feature a right-angle blade that allow greater reach in overhead and other awkward applications.

And like every other Wiss compound action snip, both the M8R and M9R have a unique blade edge, shaped to allow the material to set deeper and serrated to hold it tight during the cut.

M8R - Compound action right angle blade cuts straight to left
P/N 12-02007

M9R - Compound action right angle blade cuts straight to right.
P/N 12-02006

BUCKING BAR KIT



This starter kit contains the most commonly used bucking bars. Multi-finished surfaces for numerous applications. Heat treated for durability.

- 1 AT638 Bucking Bar
- 1 AT681 Bucking Bar
- 1 AT647 Bucking Bar
- 1 AT670 Bucking Bar

P/N 12-00840.....

AIR DRILLS (PISTOL TYPE)



These air powered pistol drills feature ergonomic design and use .90 H.P. motors. Sound level is a low 84 db while production output remains high with these high quality drills. Made in U.S.A.

| Part No. | RPM | Capacity | Length | Weight | Price |
|----------|-------|----------|--------|-----------|-------|
| 12-00816 | 4,500 | 1/4" | 5-3/8" | 2 lbs. | . |
| 12-00815 | 2,800 | 1/4" | 5-3/8" | 2 lbs. | . |
| 12-00813 | 500 | 3/8" | 7-1/2" | 2.13 lbs. | . |

TO

SHEET METAL TOOLS



MARVEL AIR TOOL OIL

MARVEL brand oil - especially engineered for care of piston-type and rotary air tools. Prevents rust formation while providing lubrication for longer tool life and smoother operation. Keeps your air tools in top shape. A "must" for all air tools. 4 oz. bottle with spout.

P/N 12-00872

TRUE BLUE CONCENTRATED CUTTING FLUID

Water Soluble and environmentally safe. Completely freeze tolerant. Mixes 8 to 1 for economical use. Rust inhibiting properties. Wipes clean and leaves surfaces ready to paint. Size: Quart

P/N 12-01852.....



MICRO-STOP COUNTERSINK CAGES & NYLON FOOT PIECE

2 Models available-one with NEEDLE bearing and one with BRONZE bushings. .001" increment depth adjustment. Positive adjustment lock. 1/4" dia. shank. 9/32" shaft travel. 9/16" cutter capacity. For 1/4-28 threaded cutters. Comes with "NO-MAR" foot piece. Rated at 3,000 RPM. Made in USA.

With Bronze BushingsP/N 12-01412.....
With Needle Bearings.....P/N 12-00940.....

SQUEEZER SET MIX

6 piece set of the most commonly used squeezer sets shown above: 3/32" & 1/8" cup sets; 1/8" modified cup set; 1/8" & 1/4" flush sets; & 1/16" by 3/8" dia. flush set; plus #4510 organizer block.

P/N 12-00882



90° ANGLE DRILL KIT

This angle drill kit includes a drill attachment with quality ball bearing construction for long life. Kit includes 12 threaded drills in assorted sizes and lengths, a mini 3-jaw chuck with 1/16" to 1/4" diameter capacity, and a mold-ed storage case. Made in the U.S.A.

Drill Sizes: 1 ea. #2140 #40 stubby 1 ea. #2130 #30 stubby
2 ea. #3140 #40 short 2 ea. #3130 #30 short
1 ea. #3127 #27 short 1 ea. #3121 #21 short
1 ea. #3112 #12 short 1 ea. #3114 #1/4" short
1 ea. #4140 #40 long 1 ea. #4130 #30 long
1 ea. #20379 Mini 3-jaw chuck
P/N 12-00883.....

STOP COUNTERSINK CUTTERS - 100°

• Made in the U.S.A. • High Speed Steel • 1/4" -28 Threaded Shanks • 100° 3-Flute Precision Ground •For Use in Micro-Stop Countersink Units • 8 Sizes Available



| Pilot Size | Decimal Equiv. | Body Dia. | Part No. | Price |
|---------------------|----------------|-----------|----------|-------|
| #40 (3/32" rivet) | .0980" | 3/8" | 12-00879 | . |
| #40 (3/32" rivet) | .0980" | 1/2" | 12-00942 | . |
| #30 (1/8" rivet) | .1285" | 3/8" | 12-00880 | . |
| #27 (#6 screw) | .1440" | 1/2" | 12-00943 | . |
| #20 (#8 screw) | .1610" | 1/2" | 12-00881 | . |
| #12 (#10 screw) | .1890" | 1/2" | 12-00944 | . |
| 5/32" (5/32" rivet) | .1560" | 1/2" | 12-00945 | . |
| 3/16" (3/16" rivet) | .1875" | 1/2" | 12-00946 | . |
| 1/4" (1/4" rivet) | .2500" | 1/2" | 12-00947 | . |

360° SWIVEL HAND POP RIVET TOOL

Stanley brand professional hand pop rivet tool. Unique head design swivels 360° for riveting in any position, at any angle. Extended nose for hard to reach places. Built in handle latch. Die-Cast aluminum & hardened steel construction. Molded grips. Includes (4) interchangeable steel nose-pieces for: 3/32", 1/8", 5/32", & 3/16"



P/N 12-00889



DELUXE DIMPLE DIE KIT W/BLOCK

This deluxe dimple die kit has all the most commonly used dimple dies in one package--at a special price. This kit includes:

1- 3/32 Dimple Die Set 1- #14870 Female Die / 3/8" Dia.
1- 1/8 Dimple Die Set 1- #14871 1/8" Female Die / 3/8" Dia.
1- #6 Screw Dimple Die Set 1- #8 Screw Dimple Die Set
1- #4520 Organizer Block for Dies
P/N 12-00868

DOUBLE OFFSET RIVET SET



SET OF 4 RIVET SETS - 5-1/2" long sets. Used for hard to reach rivets in corners. High alloy steel and heat treated. Shanks

are precision ground. Cuppings are polished.
3/32" Double Offset Rivet SetP/N 12-00936
AVERY 1/8" Dbl. Offset Rivet SetP/N 12-00873
5/32" Double Offset Rivet SetP/N 12-00937
3/16" Double Offset Rivet SetP/N 12-00938
4-PC Double Offset Rivet SetP/N 12-00939

AVREY CUTTING & POLISHING WHEEL KIT

Avery cutting polishing wheels are a uniform blend of minerals and resins molded into wheel form with rugged, dense construction that provides aggressive polishing and blending action without removing excess base materials.

These wheels generate uniform finishes and can remove minor surface imperfections. Use these wheels with a die grinder for deburring holes and edges. Small wheels are more versatile than large (6") wheels. Can be used on hand held parts or parts in the jig. These wheels are the same density, grade, and mineral type as the 7A MED 6" wheel.

Kit Contents: (1) #936 Mandrel + (2) 1" x 1" x 3/16" Wheels (1) #932 Mandrel + (2) 2" x 3/4" x 1/4" WheelsP/N 12-00876
1" x 1" x 3/16" Hole WheelP/N 12-01997
Mandrel for 3700P/N 12-01996
2" x 3/4" x 1/4" Hole WheelP/N 12-01999
Mandrel for 3719P/N 12-01998

3M™ SCOTCH-BRITE™ DEBURRING WHEEL

Two Styles Available: Cut & Polish/Unitized Wheel-7A Medium grade (harder) Use to radius and deburr edges of aluminum parts. These wheels give a uniform brushed satin finish to parts and deburr quicker and easier than hand finishing. These wheels are discs of Scotch-Brite web compressed and bonded to form a rugged, dense wheel. Wheel size: 6" dia. x 1" wide x 1/2" thru hole.P/N 12-00875

Light Deburring Wheel-7S Fine Grade (Softer)
Light deburring 7S Fin 6 x 1 x 1. This wheel has a 1" thru hole. To fit 1/2" order P/N 12-01585.....P/N 12-00948

3M Flange Adapter 3 45035 1/2".....P/N 12-01585

FOR OTHER 3M™ PRODUCTS SEE PAGES 345-352



DRIVE PIN PUNCHES

Drive Pin Punch 1/16" P/N 12-00949
Drive Pin Punch 3/32" P/N 12-00870
Drive Pin Punch 1/8" P/N 12-00871

4-PIECE DRILL STOP SET



Use when drilling in sheet metal to help eliminate drill breakage & surface marks. Safely keeps drill from going too far through the work. Drill stops have a coiled spring to cushion the drill breakthrough & prevents the drill chuck from marring the work surface. Color coded for easy identification.

P/N 12-00867

TO

SHEET METAL TOOLS

POLYETHYLENE DIMPLING Mallet



This custom made UHMW polyethylene plastic mallet is great for dimpling skins. Blows are more solid and much quieter than with steel hammers. Will outlast wood mallets. Hammer head measures 2.5" round x 4" long with 12" handle. Wt: 16oz. P/N 12-00605.....

PLASTIC FORMING Mallet



This custom made UHMW polyethylene plastic forming mallet is great for metal forming. Smooth radiused surfaces will not mar surface. Long life, split resistant. Mallet head measures 2.5" round X 5" long w/ 11" handle; Wt: 14 oz. Great combo to the shot bag. P/N 12-00607.....

METAL FORMING SHOT BAG



For those builders that want to try their hand at metal forming this leather shot bag is a must have item. Leather shot bag made from 3/4 oz. top grain cowhide. The bag is double stitched and fills through a 1" opening sealed with Velcro. The bag is 12" round and 1-1/2" thick. Use lead shot #8 - #7.5; or sand - mortar quality type (shot can be purchased at local sporting goods or gun stores). P/N 12-00606.....

HAND SEAMER/3.5" JAW



Has VISE GRIP locking feature to aid clamping & holding work. Use for straightening and bending rib and bulkhead flanges. Made with 7" vise grip plier. Jaws are made from 3/16" X 1" X 3-1/2" stainless steel with machined radius. TIG welded & polished. P/N 12-00608.....

FLUTING PLIER



Make narrow & precise flutes for straightening ribs and bulkheads easier & better than pliers with molded jaws. Made with 7" VISE GRIP pliers. Pins are 3/16" dia. stainless steel. TIG welded & polished. P/N 12-00609.....

VISE GRIP DIMPLERS



Made for dimpling in restricted and hard to reach places where regular dimple dies won't fit. Made with 7" VISE GRIP jaws then polished. 2 sizes available (3/32" and 1/8"). P/N 12-00611.....
3/32" P/N 12-00612.....
1/8"..... P/N 12-00612.....

LEVER SNIPS



Offset cutting tool, leaves 2 clean, finished edges. 8.5" length, .75 lb.

Model TP133 - (Right hand snip, cuts left & straight)..... P/N 12-00366.....
Model TP134 - (Left hand snip, cuts left & straight)..... P/N 12-00367.....

ROBIN OFFSET HEAVY DUTY SNIP



This offset blade design allows the sheet to pass under your hand. The steel forged blades keep metal from stretching and causing puckering marks along the cut edge. 16 gauge mild steel capacity. 1.63 lbs. Model TP299..... P/N 12-00369.....



ADJUSTABLE SET HOLDER FOR PNEUMATIC SQUEEZERS

New improved design. Heat treated 4130 steel investment casting with rolled threads. This special set holder is made to replace the rigid (2-9/16") set holder standard to most CP214 style pneumatic squeezers. This adjustable set holder will eliminate the need to shim the dies and sets with shim washers. Adjustments are faster & easier. P/N 12-00615.....

Note: Only for yokes with 1" thick base or less. Will not work in tandem units.

POP GRIP DIMPLERS AN-426 RIVETS



For dimpling in hard to reach places. Works with any hand pop rivet tool. Can be used over & over. Works for both 100 & 120 pop rivets. Extra nails included (Uses standard hardware store nails). 2 sizes available. 3/32"..... P/N 12-00613.....
1/8"..... P/N 12-00614.....

Note: The pop rivet dimplers show above are made with 100° angles, same as regular dimple dies. They will work with either solid flush rivets (AN-426 - 100°) or with pull type rivets such as a AVEV rivets (120°), etc. The dimple formed with these pop rivet dies will not be as 'sharp' as dimples formed with regular dimple dies. This is because you get more pressure with a squeezer or a hammer than with a pop rivet puller; however, the dimples formed with pop rivet dimplers are adequate for occasional use in tight or hard-to-use places.

FLUSH SWIVEL RIVET SET



U.S. MADE -- ATI Brand. New design flush rivet set with swivel action eliminates problem of rivet gun alignment with the work surface + rubber guard to reduce slippage while flush riveting. .401" shank X 1-1/4" dia. polished face. Built-in retaining spring. P/N 12-00741.....

BACK RIVETING PLATE



Back riveting requires a hard flat surface to act as a bucking bar while you set the shop head of the rivet. Our plate is a perfect hard & flat surface for "Back Riveting". 3/8" thick X 4" wide X 15" long. Low carbon steel plate with flat ground surface. Weight 10 lbs. P/N 12-00618.....

HOLE FLANGING TOOL



For forming flanges around lightening holes. Made from 2024 aluminum and hard black anodized. Ball bearing style rollers. Comes with spare set of rollers. P/N 12-00619.....

SPARE ROLLER-SET OF 2



Replacement rollers for our edge rolling & hole flanging tools (above). P/N 12-00621.....

WISS COMPOUND ACTION SNIPS



Famous for cutting ease, keeping their edge and making clean, sharp cuts. Hardened molybdenum steel blades, serrated jaws and vinyl comfort grips. Capacity 18 gauge (.049") steel. Length 9-3/4". Wt. 14 oz. P/N 12-01155.....



P/N 12-01155- Cuts left, from tight curves to straight..... P/N 12-01189- Cuts right, from tight curves to straight.....



P/N 12-01190- Cuts straight (or wide curves left or right in light stock)..... P/N 12-01189.....

IRWIN OFFSET SNIPS



Irwin offset snips handle virtually every cutting job in sheet metal - linoleum, carpet, tile and other materials. They are easier to use than conventional metal snips, and cut in 3 directions. Irwin snips feature forged steel blades, a unique curved handle for comfortable fit in the hand, and an exclusive pinchpoint wire cutter. They cut in three directions—straight, sharp angles in one direction, and 5" diameter circles in the opposite direction. Irwin offset snips make difficult cuts easy - they can make tight circular cuts, cut easily through corrugated metal, and cut solid and stranded wire. Available in right or left cutting models. IRWIN (Right Cutting)..... P/N 12-00187.....
IRWIN (Left Cutting)..... P/N 12-00186.....

TO

SHEET METAL TOOLS

SPEED DEBURRING & C'SINKING TOOL



Swivel action - makes deburr & c'sink holes fast & easy. Molded handle with 2" long plated steel "Dog-leg" shaft with 1/4"-28 threaded holder. Includes (1) 3/8" X 100° 3-flute burring cutter (part #1050) + 8" extension shaft for deburring the inside of flanges

& other hard to reach holes. P/N 12-00622
Handle and Extension Shaft sold separately
 Swivel handle only..... P/N 12-00623
 Extension Shaft only..... P/N 12-00624

BLUE SKY COUNTER SINK DEBURRING TOOL



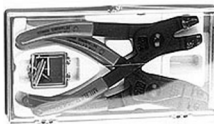
This is an aluminum handle that a counter sink bit will fit into; a clutch mechanism allows the bit to only turn in one direction. The normal "speed de-bur" handle cuts a very irregular pattern and will not countersink, or true up a countersink. This tool will do both countersinking and de-burring. Use any countersink with a 1/4" shaft. P/N 12-01753

HSS THREE FLUTE BURRING CUTTER - 100°



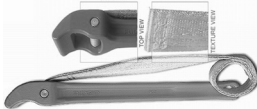
US made. High speed steel, precision ground, three flute burring cutter. 3/8" diameter X 100° with 1/4-28 threaded shank. Same style as a countersink but without the pilot. P/N 12-00625

SNAP RING PLIER KIT



Install or remove retaining rings of the Waldes Tru-Arc type with ease. Quality pliers made of heat-treated steel with vinyl covered handles. Kit includes two pair of pliers and two sets of four replacement tips to handle the most common sizes of both internal and external rings. Furnished in plastic box. P/N 4440R

STRAP WRENCH



Heavy malleable iron body with latex-treated nylon webbing. For gripping and turning of round, hex or square parts without marring the surface. Indispensable tool for use in close quarters where ordinary pliers cannot be used. Tool is 11-1/2" long with 18" strap. Capacity 3". Wt. 1-1/2 lbs. P/N 3004

TEMPORARY ASSEMBLY PINS



Initial fitting of control surfaces require multiple installation and removals of the parts to fit, trim, and adjust everything. These temporary assembly pins make the task quicker and easier. Pins are 3/16" diameter with tapered points and angle bends for easy installation. The pins are threaded so the pin holder can be removed — this is necessary to prevent damage should you move the control surface too far during fitting. To remove pins just screw holder back on pin and remove pin. Packaged in sets: 6 pins / 2 holders. P/N 12-00627

BOLT GRIP



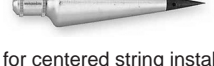
This new tool lightly grips the heads of bolts and screws for easier insertion into tight or blind spots. No more dropped or lost parts. Tool has one end for -3 (3/16") fasteners and one for -4 (1/4") fasteners. 12" overall length. P/N 12-00628

DOUBLE EDGE DEBURRING TOOL



Used to quickly deburr edges of sheets up to 1/8" thick. Save time and motion deburring edges of parts. Precision ground Carbide "V" shape blade with hex aluminum handle. Non-removable cutter style. P/N 12-00629

BRASS PLUMB BOB



Precision machined brass with clear lacquer finish and hardened replaceable tip. Top unscrews for centered string installation. Model: 6C235 Size: 8 oz, 4 7/8" L Finish: Clear Lacquer Characteristics: Replaceable Tip, Screw Top To Attach String (String Not Included) P/N 12-01711

EDGE MARKER BLOCK



This handy device holds a marking pen and has an adjustable stop for running along the edge of a part. The adjustable stop allows variable edge distance for rivet layout, etc. One thumbscrew holds the pen (pen sold separately) and the other thumbscrew holds the adjustable stop. Made from delrin (plastic) material. Comes ready to use with (1) Pilot marking pen. P/N 12-00630

SHOP HEAD RIVET GAUGE SET



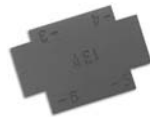
Set of four gauges for -3, -4, -5, & -6 rivets. Each gauge measures MINIMUM height and MINIMUM diameter of shop heads AFTER setting. Eliminates guessing if your rivets are properly set. Works for measuring both universal head and flush rivets. Precision machined to size from 2024 aluminum. Rivet size permanently stamped on each gauge. Color coded anodized finish. Instructions included. P/N 12-00631

EDGE ROLLING TOOL



For pre-bending skin edges on lap joints and butt joints before riveting. "Edge rolling" will prevent skin edges from curling up during riveting. Machined round body made from 2024 aluminum. Hard black anodized finish for wear resistance. Ball bearing style nylon rollers (non marking); + spare set of rollers and instructions included. P/N 12-00632

RIVET LENGTH GAUGE



One gauge measures -3, -4, -5, & -6 rivets. Used to check for proper length of rivets BEFORE setting. Eliminates measuring and guessing of rivet lengths. Works for both universal head and flush rivets. Precision machined to size from 2024 aluminum. Rivet sizes permanently stamped. Gold anodized finish. Instructions included. P/N 12-00633

STEELMAX MAGNETIC BASE DRILL



SteelMax® brand drills maintain rigidity and accuracy throughout the life of the drill. The rail system eliminates the need to adjust or maintain traditional gibs. In addition to saving on maintenance, cutter life is increased by reducing movement at the cutter tips. When cutters last longer, you save money every day you use SteelMax! **Features:** • Powerful, Portable Drill that cuts through mild steel up to 2 1/16" Diameter, with 2" Depth of cut and weighing only 37 lbs. • Unique low maintenance rail system reduces cutter run out and breakage without adjustments • Dual speed for cutting a variety of hole sizes as small as 1/16" up to 2 - 1/16". Uses adjustable chuck for twist drill bits up to 1/2". • Versatile, Light weight, and powerful, the D2's unique design allows for easy maintenance and repairs in the field, keeping it in service far longer than competitors with gib system designs Steelmax Magnetic Base Drill..... P/N 12-01718
 D1 Portable Magnetic Drill..... P/N 12-01811

STEELMAX METAL CUTTING SAW 9 INCH



More efficient than any portable metal cutting process you are using now! • **Increase Productivity** - No Milling or de-burring with near surgical dry-cut technology. • **Cuts a Variety of Metals, Plastic and Wood** - Bring your saw to the work-piece while cutting mild steel, stainless steel and aluminum as easy as it cuts plywood. • **Cool-to-the-Touch** - No waiting for your workpiece to cool down. Just cut it and handle it. • **Precise Cutting** - With integrated laser sighting system..... P/N 12-01716

STEELMAX DRYCUT SAW S14



Utilizing a 14" carbide tipped blade, the Steelmax S14 cuts through metal faster, safer and cleaner than abrasive chop saws in a fraction of the time and cost. Powered with a 15 amp motor and geared to turn slower than a chop saw, the S14 dry cutter cuts like a cold saw, but at a fraction of the cost. Sold standard with a 14" carbide tipped mild steel blade attached, heavy duty, industrial strength cast iron base and two position locking vise, this saw is ready for immediate action! Cuts solid mild steel up to 1" thickness; cut profiles: pipe, angles, channel with a depth of cut up to 4-3/4". Bevels to 45 degrees. Saves time and money giving cool cuts that need little to no finishing, eliminating any need for grinding or cool down time..... P/N 12-01717

TO

METAL WORKING TOOLS

SHOT BAGS



These shot bags are made out of .070/.090 thick top grain cowhide for extended life and to produce a blemish-free metal surface. These bags have suede outer or forming surface and a tanned inner surface to resist abrasive wear from the media. Convenient media filter and reinforced flap with velcro seal is provided. All bags are approximately 1.5" to 2" thick when filled. Can be filled with buckshot or silica sand (not included) found at most sporting good stores.

forced flap with velcro seal is provided. All bags are approximately 1.5" to 2" thick when filled. Can be filled with buckshot or silica sand (not included) found at most sporting good stores.

| Model No. | Size (inches) | Part No. | Price |
|---------------------|---------------|----------|-------|
| SB8 | 8" | 12-00995 | . |
| SB12 | 12" | 12-00996 | . |
| SB18 | 18" | 12-00997 | . |
| SBR18 (rectangular) | 18"x12" | 12-00998 | . |



PANEL BEATER HAMMER & DOLLY KIT

The most widely used selection of panel beaters and dollies for most metal shaping needs, professional grade in a molded plastic box. Each hammer is color-coded for either shrinking (blue) or stretching (red) forming tasks. The 3 panel beaters included are the dinging, shallow-domed face and pick hammer

combo. The dollies included are the thin toe, utility, curved and heel shapes, providing the user with the best combination kit on the market. See the individual sections on panel beaters and dollies for more specifications on each item. 8-piece kit includes: • DT2566, DT2560 & DDT2537 panel beaters • CP548, CP552, CP553, & CP554 dollies • Blow molded plastic case. All tools made from medium carbon steel, forged, heat treated and mechanically polished for years of continuous service. Weight: 16.5 lbs.; size: 16.5"L x 14"W x 4"H.

P/N 12-01011

T-DOLLIES



Simple, but necessary forming tool allows you to create new flanges or straighten out damaged flanges. Can be used effectively by taking to an existing body panel or locked in bench vise and create an exact radius edge using any flat faced panel beater or wood slapper. T-dollies are fabricated

out of carbon steel hardened and zinc plated to provide years of service life. Extra long flat handle. Heads have radius ends.

| Model No. | Size (inches) | Part No. | Price |
|------------------------|---------------|----------|-------|
| DCTD01 | 1"x 8" | 12-01019 | . |
| DCTD02 | 3/4"x 6" | 12-01020 | . |
| DCTD03 | 1"x 8" | 12-01021 | . |
| DCTD 3-pc. kit (8lbs.) | 1"x 8" | 12-01022 | . |

ARC360 HOLE CUTTER



The tools on the market for cutting lightning holes in your airframe parts have never impressed me much especially if the holes are larger than a couple of inches in diameter. Panel knock put punches and hole saws work well for holes that are aren't too big but it gets harder and more expensive as the size of the hole increases.

You can cut holes with a router but cutting holes with a router is a cumbersome ordeal. The router is really just too big a tool to be swinging 360 degrees easily. You can set it to cut holes down to around 1.5 inches and up to around 10 inches. The tool's small size allows you to easily see your work as you are cutting. If you want an arc you can start and stop anywhere you want. It will cut any thickness of sheet aluminum and I even made the Mustang-II flap handle notch plates in the photo out of .06 thick 4130 steel.

The cutting speed in 032 thick 2024-T3 aluminum is around 40 inches per minute so you can cut a 4-inch diameter hole in less than 20 seconds. P/N 12-01977

MODEL SLP1 MODEL SLP2



MODEL SLP3 MODEL SLP4



HARDWOOD SLAPPER

These slappers are made from grade A select midwestern grown hard maple for toughness, stiffness and durability. With an ergonomically designed grip area, the hand and wrist are positioned in a neutral and natural condition. Finished with protective oil that resists staining and guards against moisture penetration. 4 different shapes: gentle, medium, flat, and radius face. The new thinner cross-section of 2-1/4" allows work-

ing a tighter radius in more confined areas. Each slapper comes with a leather face cover to eliminate marring of the metal.

| Model No. | Shape Style | Overall Length | Surface Length | Face Width | Weight (Lbs.) | Part No. | Price |
|---|-------------|----------------|----------------|------------|---------------|----------|-------|
| SP1 | Gentle | 14" | 8.5" | 2.25" | 1.3 | 12-00999 | . |
| SP2 | Medium | 14" | 8.5" | 2.25" | 1.3 | 12-01001 | . |
| SP3 | Flat | 14" | 8" | 2.25" | 1.3 | 12-01002 | . |
| SP4* | Radius | 14" | 8.5" | 2.25" | 1.3 | 12-01003 | . |
| SLP-001L Replacement leather cover & hardware | | | | | | 12-01004 | . |

HAND FORMING DOLLIES



12-01010 12-01009 12-01008



12-01007 12-01006 12-01005

These professional series hand dollies are a complete selection of shapes and weights for most forming needs. These dollies can be used with panel beaters or wood slappers. Dollies weight and shape impacts the flow of the metal. Choose weights according to sheet metal thickness. Medium carbon steel, forged, ground, heat treated and mechanically polished for years of continuous use.

| Model No. | Weight (lbs) | Part No. | Price |
|-----------|--------------|----------|-------|
| CP548 | 2.02 | 12-01005 | . |
| CP552 | 2.85 | 12-01006 | . |
| CP553 | 2.55 | 12-01007 | . |
| CP554 | 1.97 | 12-01008 | . |
| CP555 | 3.94 | 12-01009 | . |
| CP556 | 3.40 | 12-01010 | . |



12-01027

12-01029

12-01028

12-01030

PANEL BEATER HAMMERS

These professional series panel beater hammers are uniquely balanced acting as a natural extension to the users own hand. Creating excellent feel and feedback each an every time you contact the metal. Each hamer style is color coded for easy recognition: **MODELS:** DT2537 & DT2566 are Stretching. **MODELS:** DT2560 & D2569 are Shrinking.

| Model No. | Head Wt./lbs | Overall Length | "A" | "L" | "B" | Part No. | Price |
|-----------|--------------|----------------|------|------|------|----------|-------|
| DT2537 | .67 | 13" | 1.6" | 5.5" | - | 12-01027 | . |
| DT2566 | .57 | 13" | 1.5" | 5.4" | - | 12-01029 | . |
| DT2560 | .70 | 13" | 1.6" | 3.8" | 1.5" | 12-01028 | . |
| DT2569 | .70 | 13" | 1.6" | 3.8" | 1.6" | 12-01030 | . |

BOSSING MALLET'S EXTENDED REACH



These extended depth plastic mallets allow deeper reach and a more aggressive and fuller finished shape. The UHMW polyethylene heads are lightweight, resistant to wear and non-marring. Hickory handles with full round shafts. When paired with shot bags, very creative, roughed out forms can be accomplished.

| Model No. | Small radius dia. | Large radius dia. | Overall head lgth | Head dia. | Weight (lbs.) | Part No. | Price |
|-----------|-------------------|-------------------|-------------------|-----------|---------------|----------|-------|
| DBM01 | 1/2" | 2-1/4" | 7" | 2" | .70 | 12-01031 | . |
| DBM02 | 3/4" | 1-3/8" | 8" | 2-3/4" | 1.3 | 12-01032 | . |
| DBM03 | 1" | 3" | 7" | 3" | 1.5 | 12-01033 | . |

TO

ECONOMY AIRCRAFT TOOLS



HAND RIVET SQUEEZER

Features includes an all-steel construction, adjustable set holder (accepts all sets with 3/16" shank), and long handles for increased force. The yoke is made of the highest quality tool steel, and by simply removing 3 pins you can change the yoke to match your riveting or dimpling application.

| Description | Part No. | Price | Description | Part No. | Price |
|-------------|----------|-------|-------------|----------|-------|
| 1" Squeezer | 12-01460 | . | 1" Yoke | 12-01457 | . |
| 2" Squeezer | 12-01461 | . | 2" Yoke | 1201458 | . |
| 3" Squeezer | 12-01462 | . | 3" Yoke | 12-01459 | . |

STAINLESS STEEL HAND SQUEEZER



This stainless steel hand squeezer made of quality stainless steel construction. Features include an adjustable set holder (accepts all sets and dies with 3/16" shank) and a locking lever arm. Yokes are easily interchangeable by simply removing three roll pins and designed to accept yokes and parts made by other stainless steel hand squeezer manufacturers.

1-1/2"P/N 12-01463
3"P/N 12-01464
.....

QUICK CHANGE PINS



Quick Change Pin. Makes changing yokes quicker & easier

3/4"P/N 12-01798
5/8"P/N 12-01799
.....

INTEGRAL WHOLE TYPE HAND SQUEEZER



A basic tool for all riveting operations. Quality steel construction with black oxide finish and all parts are heat treated. Adjustable set holder accepts dies and sets with 3/16" shank. 1-1/2" reach x 1-1/2" gap.

1-1/2"P/N 12-01465
.....

RIVET SET FOR SQUEEZER (FLUSH & CUPPED)



Made of steel and heat-treated for long wear and tool life. .187" (3/16") shank.

| Description | Part No. | Price | Description | Part No. | Price |
|-------------|----------|-------|-------------|----------|-------|
| Flush 1/8 | 12-01466 | . | Flush 1/2 | 12-01559 | . |
| Flush 3/16 | 12-01554 | . | Cupped 1/8 | 12-01561 | . |
| Flush 5/16 | 12-01556 | . | Cupped 5/32 | 12-01562 | . |
| Flush 3/8 | 12-01557 | . | Cupped 3/16 | 12-01563 | . |
| Flush 7/16 | 12-01558 | . | | | |

1-1/2" AND 3 YOKES



• Holds 3/16" die sets • Adjustable set holder • Stainless steel construction. 1-1/2"P/N 12-01547
3"P/N 12-01548
.....

DIMPLE DIES



For any .187 shank diameter squeezer.

3/32"P/N 12-01468
1/8"P/N 12-01564
5/32"P/N 12-01565
3/16"P/N 12-01566
.....

Economy Dimple Die Set Includes: 3/32", 1/8", 5/32", 3/16"
P/N 12-01467
.....

SCREW REMOVAL TOOL



* Useful in removing screws that are corroded or have stripped heads
* 401 Parker taper shank for use in rivet gun
* 3/8" square socket end with 1/4" hex adapter included
* Use standard Phillips or Slotted insert bits
* Rivet gun required
4" ToolP/N 12-01567
8" ToolP/N 12-01469
.....

MICRO-STOP



This tool permits you to set the desired cut depth to help eliminate mistakes and skin damage.

• 1/4" Shaft travel
• Depth adjustable in .001" increments
• 1/4"-28 Female Threads
• Rated for 3,000 RPM

P/N 12-01470
.....

HEAVY DUTY RIVET CUTTER



This high quality, durable rivet cutter features all steel construction and cuts 1/16" to 1/4" diameter rivets. It is adjustable for 1/4" to 3/4" long rivets.

P/N 12-01471
.....

ALUMINUM BODY MINI AIR VACUUM



A handy air powered vacuum works off an air compressor and is simple to use. Attached 12" clear plasticflex tube can easily get into tiny spaces to clean. The canvas bag is easily

removed for cleaning. P/N 12-01474
.....

CHIP CHASER



Ideal for removing chips and burrs from between metal after drilling rivet holes. Each chaser features a plastic molded handle and flexible steel blade with hook on the end. Blades are 5.5" and 2.5" long.

2.5"P/N 12-01597
5.5" P/N 12-01476....
.....

DOGLEG DEBURRING TOOL



Swivel action of this tool makes deburring holes fast and easy. Shaft includes a 1/4"-28 threaded holder.

P/N 12-01478
.....

BURNISHING SPOON



Designed to remove surface blemishes in aircraft sheet metal. Hard chrome plated. Comfort grip handle. P/N 12-01479
.....

CLECO PLIERS



Used in limited access areas, requires less travel per activation. P/N 12-01480
.....

SPRING TENSION CLAMPS (ZINC ALLOY YOKE OR STEEL YOKE)



Spring tension clamps can be applied in a fraction of the time required for ordinary screw clamps. The clamp, with 2" throat depth, has a Zamak alloy yoke and a steel spring which provides a 70 lb. clamping pressure. Designed for use with sheet holder pliers.

| Description | Part No. | Price |
|-------------|----------|-------|
| Zinc Alloy | 12-01481 | . |
| Steel 2" | 12-01482 | . |
| Steel 3" | 12-01483 | . |

SIDE GRIP CLAMPS



Designed to hold two or more work pieces together where no holes exist. Clamping force is applied at edge of work. Spring loaded, plier actuated. The lack of a takeup screw makes it impossible to over-tighten and damage the work surfaces or the clamp. There are 4 standard sizes : 1/2 x 1/2", 1/2 x 1", 3/4 x 1/2", 3/4 x 1".

| Description | Part No. | Price |
|-------------|----------|-------|
| 1/2" x 1/2" | 12-01484 | . |
| 1/2" x 1" | 12-01485 | . |
| 3/4" x 1/2" | 12-01486 | . |
| 3/4" x 1" | 12-01487 | . |

DRILL STOPS



Use when drilling in sheet metal to help eliminate drill breakage & surface marks.

Safely keeps drill from going too far through the work. Drill stops have a coiled spring to cushion the drill breakthrough & prevents the drill chuck from marring the work surface. Color coded for easy identification.
#10.....P/N 12-01488..... #20P/N 12-01489
#30.....P/N 12-01490..... #40P/N 12-01491
#1/4.....P/N 12-01492..... #5/16P/N 12-01493
.....

CYLINDER BASE NUT WRENCHES



Where torque application accuracy is critical these tools meet the requirement. They offer excellent rigidity and surpass other wrenches in overall quality and efficiency. Wrench Type A is for sizes 1/2", 9/16", 5/8", and 3/4" hex nuts. Wrench Type B is for 3/8" and 1/2" internal hex.

| | | |
|-------------------|--------------|-------|
| Type A 1/2"..... | P/N 12-01525 | ..... |
| Type A 9/16:..... | P/N 12-01568 | ..... |
| Type A 5/8"..... | P/N 12-01569 | ..... |
| Type A 3/4"..... | P/N 12-01570 | ..... |

TO

ECONOMY AIRCRAFT TOOLS

STRAP DUPLICATOR (BUSHING TYPE)



For drilling an accurate hole in overlapping sheets. The Bushing type duplicator is used by sliding the end with the pin between the sheets and locating the hole to be duplicated from inside. #10?#21?#30?#40?1/4 drill sizes, 6 1/4" or 13 1/4" lengths.

| Description | Part No. | Price | Description | Part No. | Price |
|-------------|----------|-------|--------------|----------|-------|
| #10 6-1/4" | 12-01494 | . | #10 13-1/4" | 12-01499 | . |
| #20 6-1/4" | 12-01495 | . | #20 13-1/4" | 12-01501 | . |
| #30 6-1/4" | 12-01496 | . | #30 13-1/4" | 12-01502 | . |
| #40 6-1/4" | 12-01497 | . | #40 13-1/4" | 12-01503 | . |
| 1/4" 6-1/4" | 12-01498 | . | 1/4" 13-1/4" | 12-01504 | . |

STRAP DUPLICATOR (PUNCH TYPE)



For drilling an accurate hole in overlapping sheets. The punch type duplicator comes with hardened marking pin. Permit the marking sheet metal from a hidden pilot hole. #10?#21?#30?#40?1/4 drill sizes, 6 1/4" or 13 1/4" lengths.

| Description | Part No. | Price | Description | Part No. | Price |
|-------------|----------|-------|--------------|----------|-------|
| #10 6-1/4" | 12-01505 | . | #10 13-1/4" | 12-01510 | . |
| #20 6-1/4" | 12-01506 | . | #20 13-1/4" | 12-01511 | . |
| #30 6-1/4" | 12-01507 | . | #30 13-1/4" | 12-01512 | . |
| #40 6-1/4" | 12-01508 | . | #40 13-1/4" | 12-01513 | . |
| 1/4" 6-1/4" | 12-01509 | . | 1/4" 13-1/4" | 12-01514 | . |

ECONOMY BLIND HOLE SPOTTERS



Size: 5/16" PN 12-01775 Size: 1/4" PN 12-01774 Size: 3/16" PN 12-01773 Size: 5/32" PN 12-01772 Size: 1/8" PN 12-01771

For inserting into drilled holes already bored and marking exact center for opposite hole. Available size: 5/16", 1/4", 3/16", 5/32" and 1/8"

| Description | Part No. | Price | Description | Part No. | Price |
|-------------|----------|-------|-------------|----------|-------|
| 5/16" | 12-01775 | . | 5/32" | 12-01772 | . |
| 1/4" | 12-01774 | . | 1/8" | 12-01771 | . |
| 3/16" | 12-01773 | . | | | |

EDGE BREAKER



This tool allows the quick removal of burrs and roughness from the edges of sheet metal. .25" or .187" in diameter grooved blade with safety shield. Safety-grip plastic handle. P/N 12-01527

HAND SEAMER



Large jaws are machined for smooth, parallel fit. Forms precise folds and seams. Has rounded jaws to prevent tearing when bending of aluminum and other light metals. Depth of throat 1". Width of jaws 3-1/2". Overall length 8". P/N 12-01528

AIR SWIVELS & REGULATOR TOOLS



Air Swivel Connector W/ Regulator (Pictured to the left) P/N 12-01530
Air Swivel Connector P/N 12-01529
Air Swivel Regulator P/N 12-01545

BRASS RIVET SET



This rivet set has a soft face to prevent damage to the fastener when inserted or removed. Fits into any standard rivet gun or air hammer that supports .401" shank tooling, 3 1/8" overall length. P/N 12-01543

RIVET GUN SHAFT REDUCER



Rivet set adapter sleeve, .401 shank. Made of hardened steel (SKD11) and is open at both ends to allow maximum riveting power. P/N 12-01544

ECONOMY SAFETY WIRE TWISTERS



These top quality twisting lock pliers with automatic return are economically priced and extremely durable. Features a sharp cutting edge and will twist up to .060" dia. safety wire. Length 6" & 9". Foreign made.
6" P/N 12-01472
12" P/N 12-01473

CAMLOC PLIERS



These Camloc Pliers are used to depress #2600, #2700 and #4000 series Camloc (C-LOCK) studs so they can be properly installed. Pliers are manufactured from forged steel and feature polished bearing surfaces to avoid scratching the stud as it's being installed. The grips are rubber cushioned for extra comfort and to reduce slipping. P/N 12-01475

CANNON CONNECTOR PLIERS



The tool features serrated jaws for improved gripping and a slip joint for improved leverage. Ideal for all common cannon connector applications. P/N 12-01531

SHOP HEAD RIVET GAUGE SET



Set of four gauges for -3, -4, -5, -6 rivets. Each gauge measures Minimum height and Minimum diameter of shop heads AFTER setting. Eliminates guessing if your rivets are properly set. Works for measuring both universal head and flush rivets. Precision machined to size from 2024 aluminum. Rivet size permanently stamped on each gauge. Color coded anodized finish. P/N 12-01533

RIVET LENGTH GAUGE



One gauge measure -3, -4, -5, -6 rivets. Used to check for proper length of rivets Before setting. Eliminates measuring and guessing of rivets lengths. Works for both universal head and flush rivets. Precision machined to size from 2024 aluminum. Rivet size permanently stamped. Blue anodized finish. P/N 12-01534

DRILL EXTENSION THREADED



Use these different length extensions in your 90° or 45° drills. 1/4"-28 male threads on one end and 1/4"-28 female threads on other.
2" P/N 12-01535
4" P/N 12-01536
6" P/N 12-01537

DRILL EXTENSION DUAL THREADED



Use these different length extensions in your 90° or 45° drills. 1/4"-28 male threads on one end and 1/4"-28 female threads on other. Comes in three different lengths 1", 2" & 4".
2" P/N 12-01541
4" P/N 12-01542

SLIM MICRO-STOP



A slim design that's only 11/16" outside diameter. Used for those narrow areas that can't be reached with a standard micro-stop. • 1/4" Shaft • 1/4"-28 Female Threads • Adjustable in .001" increments • 1/2" Cutter Capacity • Rates for 3000 RPM use. P/N 12-01790

MICRO-STOP (LONG NOSE)

This micro-stop reaches into very confined areas. • 5/16" Quick-change Shaft or regular chuck • 1/4"-28 Female Threads • Adjustable in .001" increments • 3/8" Cutter Capacity • Rates for 3000 RPM use. P/N 12-01789



MICRO-STOP (NYLON FACE)



• 1/4" Shaft • 1/4"-28 Female Threads • Adjustable in .001" increments • 11/16" Cutter Capacity • Rates for 3000 RPM use. P/N 12-01788

RADIUS CHECK



Radius Check is a hand-held tool which can be used to check the radius of parts and panels used in the construction or restoration of aircraft. Also used extensively in the restoration of antique and classic automobiles. P/N 12-21595

RADIUS OR FILLET GAUGES



16 leaves, especially for checking radius of inside and outside fillets and corners. Checks 1/32 to 17/64" by 64ths. P/N 432A

TO

ECONOMY AIRCRAFT TOOLS

ECONOMY RIVET GUNS



These popular 2X /3X /4X rivet guns used in aircraft manufacturing plants worldwide. "X" series rivet gun has an incomparable teasing triggers, allowing you to slowly begin riveting without damaging the skin. A lightweight aluminum handle with powder coat finish for comfort. Hardened & precision ground steel piston, cylinder, spool valve for long life. Includes spring retainer & brass air regulator.

| Length | BPM | Capacity | Bore | Shank | Stroke | Weight (lbs) | Part No. | Price |
|----------|------|----------|------|-------|---------|--------------|----------|-------|
| 6-11/16" | 2580 | 1/8" | 1/2" | .401" | 2-1/4" | 3.1 | 12-02034 | . |
| 7-5/16" | 2160 | 3/16" | 1/2" | .401" | 2-7/8" | 3.2 | 12-02035 | . |
| 8-1/2" | 1740 | 1/4" | 1/2" | .401" | 3-1/16" | 3.4 | 12-02036 | . |

ECONOMY FLUTING PLIERS



Narrow type fluting pliers are used for straightening out or coaxing sheet metal into the correct shape. This tool makes narrow and precise flutes in sheet metal.

P/N 12-01782.....

RIVET HOLDER

This tool holds your rivet, small bolt, or screw so you can get into those hard-to-reach areas.

P/N 12-01791.....



QUICK-CHANGE CHUCK

Allows tool change in seconds. Designed for drilling bits, countersinks, etc. with quick-change ends. 3/8" x 24 thread.

P/N 12-01778.....



C-SET

This C-Rivet Set bends around obstacles and allows you to reach into awkward areas for riveting. • 3/16" diameter hole for any squeezer sets or dimple dies with 3/16" shaft • .401 shaft

P/N 12-01776.....



60° C-SET

Excellent for limited access areas. • 60° Angle • .401 shaft

P/N 12-01777.....



FORD WRENCH



- General-purpore adjustable wrench in available in 2 sizes
- Sliding Jaw
- Forged from Crescent special Analysis Tool Steel
- Chrome-plated
- Precision Machined

9" Wrench P/N 12-01783.....
11" Wrench P/N 12-01784.....



SEALANT MIXER

Designed to quickly and efficiently mix all types of pre-filled Semkit® packages. Has a 1/4" shank. Chuck it up in your drill to mix Semkit® sealant tubes.

P/N 12-01792.....

RED BOX RIVET GUN TOOL KITS

RED BOX RIVET GUN TOOL KITS



- * 1pc Rivet Gun (Choose Size 2X, 3X or 4X)
 - * 1pc Brass Regulator
 - * 1pc Beehive Retainer
 - * 1pc Handi Retainer
 - * 4pcs 3.5" Straight Rivet Set (3/32", 1/8" 5/32", 3/16")
 - * 1pc Standard Flush Set (size: surface diameter 1", length 2-1/2")
 - * 1pc Marvel Air Tool Oil (Made in USA)
 - * 1pc Thread Seal Tape
 - * 1pc Air Tool Fitting
- 2X Rivet Gun Tool Kit P/N 12-02047.....
3X Rivet Gun Tool Kit P/N 12-02048.....
4X Rivet Gun Tool Kit P/N 12-02049.....

RED BOX FLUSH RIVET SET

P/N 12-02050.....



RED BOX 3.5" RIVET SET



- 3.5" Rivet (3/32") P/N 12-02051.....
- 3.5" Rivet (1/18") P/N 12-02052.....
- 3.5" Rivet (5/32") P/N 12-02053.....
- 3.5" Rivet (3/16") P/N 12-02054.....

TURNBUCKLE WRENCH

2 inch diameter turnbuckle wrench easily rotates turnbuckle while chain tool holds the cable ends in precise alignment and prevents them from rotating.

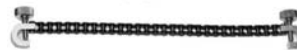
P/N 12-01795.....



TURNBUCKLE CHAIN TOOL

This tool consists of two clamps joined by sprocket type (bicycle) chain. When clamped to cable and fittings at each side of the turnbuckle, anchor the cable to allow free adjustment of the turnbuckle. The adjustment becomes a two hand instead of three hand adjustment.

P/N 12-01794.....



SPEED HANDLE 3/8"

Useful for quickly tightening and loosening a nut or bolt particularly where other types of wrenches will not reach.

P/N 12-01797.....



PHENOLIC SCRAPER

Scraper Blade, 2" wide x 6.5" long x 3/8" thick. Designed for use with a rivet gun (.401 shank). Phenolic scrapers are perfect for safely removing sealant, adhesives, stickers, labels, grime, and more.

P/N 12-01796.....



SKIN WEDGE

Made of 4130 steel and heat-treated to perfection. • 7" long x 1" wide • Body thickness 1/4"....

P/N 12-01793.....



HEX KEYS

Designed to use when installing Hi-Lok style fasteners. Includes set screw and Allen key.

- 1/8"..... P/N 12-01785.....
- 5/64"..... P/N 12-01786.....
- 3/32"..... P/N 12-01787.....



ECONOMY DRILL EXTENSION THREADED

Has a 5/16" quick change shaft on one hand and 1/4" -28 female threads on the other. Allows you to chuck threaded drill bits or countersinks into a quick-change chuck.

P/N 12-01781.....



TO

ATS TOOLS - PORTABLE COMPRESSORS



HOT DOG

- 6 Gallon Tank
- Runs at 3300 rpm
- 2 HP motor
- 4.1 - 5.1 @ 90 PSI
- Weight 57 lbs.
- Recommended for Pneumatic Tools

P/N 12-01407



PORTABLE COMPRESSORS

PANCAKE

- 4 Gallon Tank
- Runs at 3300 rpm
- 2 HP motor
- 4.1 - 5.1 @ 90 PSI
- Weight 62 lbs.

P/N 12-01408



TWIN TANKER

- Two 2 Gallon Tanks
- Runs at 3300 rpm
- 2 HP motor
- 4.1 - 5.1 @ 90 PSI
- Weight 60 lbs.
- Recommended for Paint Guns

P/N 12-01409

ATS AIR NIBBLER



ATS8300

- Cuts up to 16 ga (.060" / 15 mm) steel or aluminum
- Easily replaceable punch and die
- Weight 1.74 lbs (.79 kg)

P/N 12-01414

ATS PUNCH & FLANGING TOOLS



ATS8400

- Capacity 16ga (.060"/15mm) steel
- Punch Diameter 3/16" (5 mm)
- Flange width 1/2" (12 mm)
- Rubber comfort grip
- 9-3/4" (248 mm) Overall Length
- 2.75 lbs (1.25 kg)

P/N 12-01413

ATS AIR POWER RECIPROCATING SAW KIT



ATS8202K

- Cuts up to 16 ga (.060" / 15 mm) steel or aluminum
- .063" (16, mm) Stroke Length
- 10,000 Strokes Per Minute (SPM)
- Weight 2.1 lbs (1.35 kg)

P/N 12-01419

ATS 90 DEGREE ANGLE DRILL



ATS6132

- Spindle 1/4"-28 Thread
- Head Length 1.08" (2.7 mm)
- 2,800 RPM
- Head Width .65" (1.6 mm) .33 hp
- 10" (254 mm) Overall Length
- Variable speed control
- 1.6 lbs (.73 kg)

P/N 12-01422

ATS TOOLS ATS MNI ANGLE DIE GRINDER



ATS5105

- 1/4" (6.4 mm) Collet Size
- 5-1/2" (140 mm) Overall Length
- 1.1 lbs (.5 kg)
- 20,000 RPM Free Speed)

P/N 12-01416

ATS MINI DIE GRINDER



ATS5101

- 1/4" (6.4 mm) Collet Size
- Front exhaust keeps work area clean
- Very light weight .79 lbs (.36 kg)
- 26,000 RPM Free Speed)

P/N 12-01417

ATS 3" CUT-OFF TOOL



ATS8502

- 3" (75 mm) disc capacity, 3/8" (15 mm) mount
- Free speed 20,000 RPM
- Weight 1.74 lbs (.79 kg)

P/N 12-01420

ATS AIR HYDRAULIC RIVETER



ATS8805

- Pulling Force 2,300 lbs (1,045 kg)
- Rivet Capacity 3/16" aluminum or mild steel
- Stroke Length .63" (16 mm)
- Nosepieces: 3/32" (2.4 mm), 1/8" (3.2 mm), 5/32" (4.0 mm), 3/16" (4.8 mm)
- Weight 3.26 lbs (1.48 kg)

P/N 12-01423

ATS HEAVY DUTY AIR DRILL



ATS6101

- 3/8" (9.5 mm) Jacobs® Chuck
- Full Cage Gear
- 2,600 RPM
- Variable speed control
- .67 hp (.5 kw)
- Ergonomic Design for Maximum Comfort
- 7-1/2" (190 mm) Overall Length
- 2.07 lbs (.94 kg)

P/N 12-01418

ATS HD REVERSIBLE AIR DRILL



ATS6104

- 3/8" (9.5 mm) Jacobs® Chuck
- Full Cage Gear For Smooth Operation
- 2,400 RPM • Variable Speed Control
- Fully Reversible with Positive Stop
- 7-1/2" (190 mm) Overall Length
- .67 hp (.5 kw)
- 2.86 lbs (1.3 kg)

P/N 12-01421

ATS PALM DRILL



ATS6100

- 1/4" (6.4 mm) Jacobs® Chuck
- Two-stage (Low/High) Control Trigger
- 5-7/8" (150 mm) Overall Length
- 1.54 lbs (.7 kg)
- 2,800 RPM Free Speed

P/N 12-01424

TO

BOSCH POWER TOOLS



BOSCH 10.8V I-DRIVER

MODEL PS10-2 - Includes: (1) - Carrying Case (2) - 1.5" Power Drive Bits (1) - 30 Minute Charger (2) - Litheon™ 10.8V Batteries **Features:** • 80 in. - lbs. of Torque — Drives 100 3-inch screws per battery charge • Ultra-Compact Head Length — 3.5" total head length - 3 times shorter than most popular competitor • 90-Degree Articulating Head • 7+1 Electronic Clutch • Forward/Reverse Button — Equally useful at driving or removing screws • Quick Change Chuck- pull to insert or release 1/4" hex shank bits • Storage Hanger — Convenient tool storage between uses • Variable Speed Trigger — Revolutionary design provides increased sensitivity and control P/N 12-01754



BOSCH 10.8V POCKET DRIVER

MODEL PS20-2 - Includes (1) -- Carrying Case (2) -- 1.5" Power Drive Bits (1) -- 30 Minute Charger (2) -- Litheon™ 10.8V Batteries **Features:** • 80 in. - lbs. of Torque — Drives 100 3-inch screws per battery charge • Ultra-Compact Power & Design — Almost half the size of a 12V compact drill/driver • LED Light — For tight spaces and applications • Forward/Reverse Button — Equally useful at driving or removing screws • Quick Change Chuck — Prevents bit loss in drill or drive mode - pull to insert or release 1/4" hex shank bits • 10+1 Clutch — Enables precision driving and eliminates over torque in soft base materials. Max mode allows pilot and other small bore holes • Variable Speed Trigger — For increased sensitivity and control P/N 12-01755



BOSCH 10.8V LITHEON IMPACTOR FASTENING DRIVER

MODEL PS40-2 - Includes: (1) -- Carrying Case (2) -- 1.5" Power Drive Bits (1) -- 30 Minute Charger -- BC430 (2) -- Litheon™ 10.8V Batteries -- BAT411 **Features:** • 60% more torque than 18V drill/driver - 800 in.-lbs of max torque • Bosch Designed Hammer and Anvil System — Delivers 1,800 RPM/3,000 BPM • LED Light Ring — 3 LEDs illuminate work area for use in dark areas • Litheon™ 10.8V Batteries — • Spring-Loaded Impact Mechanism — Reduces user fatigue • Aluminum gear housing with protective rubber front • 1/4" hex drive with quick release • Ergonomic Soft Grip Handle — For extended comfort and control • Bumpers on Side of Tool — Protect work surface and prevent slipping • Variable Speed Trigger — For complete control P/N 12-01756



BOSCH 18V IMPACTOR CORDLESS IMPACT WRENCH

MODEL 22618 - Includes (2) -- 2.4A-h Batteries - BAT181 (1) -- 30 Minute Charger - BC130 (1) -- Tool Hook - IMPK-HOOK (1) -- Carrying Case - Included (1) -- Gear Box Cover **Features:** • Innovative Hammer & Anvil System delivers up to 1,950 in/lb of torque 1/2" Square Drive Anvil • Soft-grip handle, not the user, absorbs the impact during fastening applications — Reduces fatigue and stress, provides maximum cushioning and comfort • Cutting-edge, high-performance motor and all-metal gears — Super fast operating speed, delivering a category-best 3,200 BPM and 2,800 RPM • Optional Gear Box Cover — For Added Protection • Lightweight 4.6 pounds and 6.5 inches in length — Incredibly versatile for use in dozens of drilling, fastening and driving applications • Aluminum gear housing with protective rubber front Variable-speed trigger — For complete control • Externally accessible brushes — For easy brush replacement • Multi-purpose reversible tool hook • Multiple-position swivel LED lighting system — Increases visibility - great for dark or enclosed areas P/N 12-01757



BOSCH 18V IMPACTOR CORDLESS IMPACT WRENCH

MODEL 22618 - 12V Battery for medium-duty jobs. 14.4V Battery for heavy-duty jobs. The Most Powerful Impact Wrench In The Line Up! 18V Battery for heavy-duty jobs. Faster and more powerful than standard impact drivers. The most lightweight driver in the line up. 9.6V Battery for medium-duty jobs **Includes:** (2) -- 2.4A-h Batteries - BAT181 (1) -- 30 Minute Charger - BC130 (1) -- Tool Hook - IMPKHOOK (1) -- Carrying Case - Included (1) -- Gear Box Cover P/N 12-01758



BOSCH 18V COMPACT TOUGH 1/2 INCH DRILL/DRIVER

MODEL 34618 - Includes (2) 2.0A-h Batteries - BAT180 (1) 30-Minute Single Bay Charger - BC130 (1) Doubled-ended Bit Carrying Case **Features:** • 80 in.-lbs more torque, 150 RPM faster than previous generation • New ratcheting, single sleeve 1/2" Chuck - For one-handed bit changes • DuraShield™ housing • High torque mode produces 390 in.-lbs. • High speed mode produces 1,450 RPM • New Compact™ Tough Design • 20 Position Clutch • Variable-speed trigger • Ergonomic Soft Grip Handle — For extended comfort and control P/N 12-01759



BOSCH 18V CORDLESS JIGSAW KIT

MODEL 52318 - Includes (1) -- 2.4A-h Battery - BAT026 (1) -- 1-Hour Charger - BC004 (1) -- Carrying Bag - 2610914300 (2) -- Blades - T123X, T345XF (1) -- No Mar Overshoe - 2608000184 **Features:** One-Touch™ blade change system for quick blade changes • Patented Bosch blade retention • Powerful, Bosch built motor and magnesium gear housing • Large, die-cast aluminum foot • Variable speed trigger with ambidextrous lock-off switch • Ergonomic soft grip handle design with multi-position grip area P/N 12-01762



BOSCH 18V CORDLESS PLANER

MODEL 53518 - The Only Full Size Cordless Planer on the Market. Never worry again about running out of cord in the middle of a planing job! Sold as Tool Only (without battery, charger or carrying bag) so it can be efficiently added to any Bosch 18V Cordless System. Sold as Tool Only (without battery, charger or carrying bag) so it can be efficiently added to any Bosch 14.4V Cordless System. Includes: (1) -- Chip Bag - 2605411035 (2) Woodrazor® Blades - PA1202 (1) -- Edge Guide Fence -- PA1203 (1) -- 2.4A-h Battery - BAT026 (1) -- 1-Hour Charger - BC004 (1) -- Carrying Bag - 2610914300 P/N 12-01763



BOSCH 4-1/2 INCH PADDLE SWITCH GRINDER

MODEL 1810PS - Paddle switch with lock-on for better operator comfort and control. Directed air flow diverts dust away from switch and vital components. Includes: Guard, Vibration Control Auxiliary Handle, Flange Kit, Spanner Wrench, Abrasive Wheel Features; • Paddle Switch with Lock-on • Vibration Control Handle • AC/DC capability • Sealed switch • ServiceMinder™ brushes • Epoxy Coated Field Windings • 5/8" -11 Spindle • Tool-free adjustable guard • Spindle Lock • Directed Air Flow P/N 12-01764



BOSCH TOP HANDLE JIG SAW

MODEL 1590EVSK - ProVantage 3-year Protection Plan. Includes: • Precision for Wood Blade • Progressor® Wood Blade • Tight kerf blade -- T244D • Zero-clearance Insert • Non-marring Footplate • Carrying Case **Features:** • 6.4 Amps • Precision Control™ system • One-Touch™ blade change • Quick bevel adjust cast aluminum foot • Constant Response™ circuitry • T-shank machined plunger • Robust 3-point connection • No blade play • On/off blower switch • 4-position orbital control • Variable speed trigger • Variable speed dial • Lock on button • Adjustable dust blower keeps cutting line clear P/N 12-01765



5 INCH RANDOM ORBIT SANDER

MODEL NO. ROS20VSK - Features: • Best all-around sanding performance and convenience. • Twist-off translucent dust canister shows dust level and detaches easily. Ant-spillback design prevents dust from spilling on removal. • Bosch Microfilter system traps dust particles as small as 1/2 micron. • Hook-Tight™ hook-and-loop disk attachment ensures firm grip of standard hook-and-loop sanding discs. • Comfortable, ergonomic soft-grip top and body • Integral pad dampening system prevents swirl marks • Soft microcellular backing pad ensures smooth, fine finish on flat or contoured surfaces. • Variable-speed dial allows matching of speed to work piece and task. P/N 12-01766



BOSCH 3-1/4 INCH PLANER

MODEL 3365 - Includes: (2) Woodrazor™ Blades, Guide Fence, Blade Wrench, Chip Bag. **Features:** • Powerful 5 Amp Motor, 18,000 RPM. • Electronically-Counterbalanced Single-Blade System automatically positions blade at ideal cutting angle. • Eliminates uneven planing caused by misaligned blades. • Equipped with Bosch Woodrazor™ micrograin carbide blades, which resist fractures from nail and staple strikes. • Ratcheting Depth Knob. • No need to re-zero the depth. • Chip Ejection Switch. • Edge Guide Fence. • Has a protective shield that covers the section of blade not in use. • Lock-off Release Button. • Park Rest Stand • Double insulated, UL listed, complies to OSHA. P/N 12-01767



BOSCH PROGRAMMABLE HEAT GUN KIT

Model 1944LCDK - Features: • 12.5 Amps, 120-1,100°F. • Cool air setting. • Double insulated, UL listed, complies to OSHA. • Ergonomically-designed controls. • Infinite temperature range and blower speeds. • Integral stand. • LED temperature indicator. • Lightweight. • Multiple uses — Strip paint, shrink tubing or packaging, heat liquids, loosen fittings, soften caulking and surface finishes, thaw pipes. • Range of accessories. • Removable heat shield. P/N 12-01768

TO

SUNEX TOOLS

SUNEX PNEUMATIC TOOLS

1/4" DRIVE MINI AIR RATCHET WRENCH



| SX1068 Specification | |
|--------------------------------|-----|
| Free Speed (RPM) @90PSI | 230 |
| Torque (ft. lbs.) @90PSI | 25 |
| Square Drive | 1/4 |
| Min. Hose Size | 2/8 |
| Recommended Air Pressure (PSI) | 90 |
| Average Air Consumption (CFM) | 3 |
| Sound Level (dBA) | 87 |
| Length (In.) | 8 |

- * Lever throttle for positive speed control
- * Ball detent socket retainer
- * Rear exhaust
- * Also available: 1/4" head kit

P/N 12-01932

1/2" DRIVE IMPACT WRENCH



| SX634CZ Specification | |
|--------------------------------|--------|
| Square Drive (In.) | 1/2 |
| Max. Torque (ft. lbs @90PSI) | 220 |
| Working Torque (ft. lbs.) | 50-190 |
| Free Speed (RPM@90PSI) | 7,000 |
| Air Inlet (NPT) | 1/4 |
| Recommended Air Pressure (PSI) | 90 |
| Average Air Consumption (CFM) | 4 |
| Sound Level (dBA) | 103 |
| Length (In.) | 7 |

- * Rocket dog clutch mechanism
- * Built-in regulator for positive speed control
- * Balanced design for ease of handling
- * Protective PVC rubber cover
- * The most economical 1/2" Impact wrench

P/N 12-01936

3/8" DRIVE PISTOL GRIP IMPACT WRENCH



| SX821A Specification | |
|--------------------------------|--------|
| Square Drive (In.) | 3/8 |
| Max. Torque (ft. lbs @90PSI) | 75 |
| Working Torque (ft. lbs.) | 30-60 |
| Free Speed (RPM@90PSI) | 10,000 |
| Air Inlet (NPT) | 1/4 |
| Recommended Air Pressure (PSI) | 90 |
| Average Air Consumption (CFM) | 4 |
| Sound Level (dBA) | 84 |
| Length (In.) | 5 |

- * Ring socket retainer for rapid socket changes
- * Front bumper for added protection
- * Built-in regulator for added protection
- * Reliable dog clutch mechanism for dependable service
- * Reliable dog clutch mechanism for dependable service

P/N 12-01937

1/2" DRIVE HEAVY DUTY IMPACT WRENCH



| SX821A Specification | |
|--------------------------------|--------|
| Square Drive (In.) | 1/2 |
| Max. Torque (ft. lbs @90PSI) | 450 |
| Working Torque (ft. lbs.) | 25-350 |
| Free Speed (RPM@90PSI) | 7,000 |
| Air Inlet (NPT) | 1/4 |
| Recommended Air Pressure (PSI) | 90 |
| Average Air Consumption (CFM) | 4 |
| Sound Level (dBA) | 103 |
| Length (In.) | 7.4 |

- * High-powered pin clutch delivers over 450 ft. lbs. of maximum torque
- * Working torque range 25-350 ft. lbs.
- * Rear knob regulator and variable speed trigger allow precise speed control
- * Cushion grip design for comfort and control

P/N 12-01938

MEDIUM DUTY AIR HAMMER



| SX275B Specification | |
|--------------------------------|--------|
| Blows Per Minute | 3,000 |
| Bore (In.) | 1 1/16 |
| Stroke (In.) | 2-5/8 |
| Air Inlet (NPT) | 1/4 |
| Min. Hose Size (I.D.) | 3/8 |
| Recommended Air Pressure (PSI) | 90 |
| Average Air Consumption (CFM) | 4 |
| Sound Level (dBA) | 105 |
| Length (In.) | 6.75 |

- * Built-in regulator
- * Accepts .401" Parker taper shank chisels
- * An excellent general purpose hammer
- * Quick change retainer spring

P/N 12-01935

SHORT AIR HAMMER



| SX821A Specification | |
|--------------------------------|-------|
| Blows Per Minute | 4,500 |
| Bore (In.) | 1-5/8 |
| Stroke (In.) | 1-5/8 |
| Air Inlet (NPT) | 1/4 |
| Min. Hose Size (I.D.) | 3/8 |
| Recommended Air Pressure (PSI) | 90 |
| Average Air Consumption (CFM) | 4 |
| Sound Level (dBA) | 105 |
| Length (In.) | 5.5 |

- * Built-in regulator
- * Accepts .401" Parker taper shank chisels
- * Ideal for standard duty applications
- * 3 pc. chisel set included
- * Quick change retainer spring

P/N 12-01934

SUNEX SANDING TOOLS

1/4" MINI DIE GRINDER



| SXC201 Specification | |
|-----------------------------|--------|
| Collect Size (In.) | 1/4 |
| Length (In.) | 6.1 |
| Maximum Speed (RPM) | 25,000 |
| Air Inlet (In.) | 1/4 |
| Minimum Hose Diameter (In.) | 3/8 |
| Avg. Air Consumption (CFM) | 2.1 |
| Weight (Lbs.) | 0.9 |

- * Durable comfort grip
- * Twin bearing spindle increases precision and decreases vibration
- * 360° adjustable rear exhaust directs air away from work
- * Built-in speed regulator
- * Locking throttle lever for safety

PN 12-01939

1/4" MEDIUM DIE GRINDER



| SXC205 Specification | |
|-----------------------------|--------|
| Collect Size (In.) | 1/4 |
| Length (In.) | 7 |
| Maximum Speed (RPM) | 22,000 |
| Air Inlet (In.) | 1/4 |
| Minimum Hose Diameter (In.) | 3/8 |
| Avg. Air Consumption (CFM) | 3 |
| Weight (Lbs.) | 1.3 |

- * Durable comfort grip
- * Twin bearing spindle increases precision and decreases vibration
- * 360° adjustable rear exhaust directs air away from work
- * Built-in speed regulator
- * Locking throttle lever for safety

PN 12-01940

3" UTILITY CUT-OFF TOOL



| SXC209 Specification | |
|-----------------------------|--------|
| Wheel Size (In.) | 3 |
| Length (In.) | 7.6 |
| Maximum Speed (RPM) | 21,000 |
| Air Inlet (In.) | 1/4 |
| Minimum Hose Diameter (In.) | 3/8 |
| Avg. Air Consumption (CFM) | 3 |
| Weight (Lbs.) | 1.8 |

- * Durable comfort grip
- * Twin bearing spindle
- * 360° adjustable rear exhaust directs air away from work
- * Built-in speed regulator
- * Locking throttle lever for safety
- * High-torque motor for maximum efficiency

PN 12-01941

2" ANGLE GRINDER



| SXC606 Specification | |
|-----------------------------|--------|
| Wheel Size (In.) | 2 |
| Length (In.) | 7.4 |
| Maximum Speed (RPM) | 15,000 |
| Air Inlet (In.) | 1/4 |
| Minimum Hose Diameter (In.) | 3/8 |
| Avg. Air Consumption (CFM) | 3 |
| Weight (Lbs.) | 1.6 |

- * Durable comfort grip
- * 90° angle head for restricted areas
- * 360° adjustable rear exhaust directs air away from work
- * Built-in speed regulator
- * Locking throttle lever for safety
- * High-torque motor for maximum efficiency

PN 12-01942

4.5" ANGLE GRINDER



| SXC610 Specification | |
|-----------------------------|--------|
| Wheel Size (In.) | 4.5 |
| Length (In.) | 9.6 |
| Maximum Speed (RPM) | 10,000 |
| Air Inlet (In.) | 1/4 |
| Minimum Hose Diameter (In.) | 3/8 |
| Avg. Air Consumption (CFM) | 5 |
| Weight (Lbs.) | 3.3 |

- * Durable comfort grip
- * 100° angle head for restricted areas
- * 360° adjustable rear exhaust directs air away from work
- * Built-in speed regulator
- * Locking throttle lever for safety
- * High-torque motor for maximum efficiency

PN 12-01943

TO

SUNEX SOCKET SETS

1/2" DRIVE STANDARD 13 PIECE SAE IMPACT SOCKET SET



* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy molded storage tray
2650 Includes: 7/16" 1/2" 9/16" 5/8" 11/6" 3/4"
13/16" 7/8" 15/16" 1" 1-1/16" 1-1/8" 1-1/4"
P/N 12-01945.....

1/2" DRIVE DEEP 13 PIECE SAE IMPACT SOCKET SET



* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy molded storage tray
2651 Includes: 7/16" 1/2" 9/16" 5/8" 11/6" 3/4" 13/16"
7/8" 15/16" 1" 1-1/16" 1-1/8" 1-1/4"
P/N 12-01946.....

1/2" DRIVE STANDARD 14 PIECE METRIC IMPACT SOCKET SET



* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy molded storage tray
2652 Includes: 10mm 11mm 12mm 13mm 14mm
15mm 16mm 17mm 18mm 19mm 21mm 22mm
26mm 27mm
P/N 12-01947.....

1/2" DRIVE DEEP 14 PIECE METRIC IMPACT SOCKET SET



* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy molded storage tray
2653 Includes: 10mm 11mm 12mm 13mm 14mm
15mm 16mm 17mm 18mm 19mm 21mm 22mm 26mm
27mm
P/N 12-01948.....

1/2" DRIVE DEEP SPINDLE NUT 4 PIECE METRIC IMPACT SOCKET SET



* Deep design for GM & Chrysler spindle nut applications
* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy molded storage tray
2838 Includes: 30mm 32mm 34mm 36mm
P/N 12-01951.....

1/2" DRIVE WHEEL LOCK REMOVAL KIT



* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy molded storage tray
2840 Includes: GM Hubcap Lock Remover, GM Sprocket Hubcap Remover, Ford & Chrysler Hubcap Lock Remover, Large Univ. Locking Lug Nut Remover, Large Wheel Cover Lock Remover, Remover for Stripped 18mm Lug Nuts, Oversize Wheel Lock Remover, GM "M" & "F" Body Wheel Lock Remover, Lug Nut Remover Punch
P/N 12-01952.....

3/8" DRIVE DEEP 25 PIECE SAE IMPACT SOCKET SET



* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy molded storage tray
3325 Includes: 12 Standard Sockets: 5/16" 3/8"
7/16" 1/2" 9/16" 5/8" 11/16" 3/4" 13/16" 7/8" 15/16"
1"
12 Deep Sockets: 5/16" 3/8" 7/16" 1/2" 9/16" 5/8"
11/16" 3/4" 13/16" 7/8" 15/16" 1" P/N 12-01954.....

3/8" DRIVE MASTER 29 PIECE METRIC IMPACT SOCKET SET



* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy duty blow mold case
3329 Includes: 14 Standard Sockets: 8mm
9mm 10mm 11mm 12mm 13mm 14mm 15mm
16mm 17mm 18mm 19mm 21mm 22mm 14
Deep Sockets: 8mm 9mm 10mm 11mm
12mm 13mm 14mm 15mm 16mm 17mm
18mm 19mm 21mm 22mm
P/N 12-01955.....

3/8" DRIVE MASTER DEEP 28 PIECE SAE & METRIC IMPACT SOCKET SET



* CR-MO alloy steel for long life
* Fully guaranteed (excludign adapter)
* Heavy duty blow mold case
3360DD Includes: 14 Deep SAE Sockets: 5/16"
3/8" 7/16" 1/2" 9/16" 5/8" 11/16" 3/4" 13/16"
7/8" 15/16" 1" 14 Deep Metric Sockets: 8mm
9mm 10mm 11mm 12mm 13mm 14mm 15mm
16mm 17mm 18mm 19mm 21mm 22mm 1/2"
(F) x 3/8"(M) Adapter 3" Extension
P/N 12-01956.....

1/2" DRIVE DEEP MASTER 29 PIECE SAE & METRIC IMPACT SOCKET SET



* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy duty blow mold case
5153DD Includes: 13 Deep SAE Sockets:
7/16" 1/2" 9/16" 5/8" 11/16" 3/4" 13/16" 7/8"
15/16" 1" 1-1/16" 1-1/8" 1-1/4" 14 Deep Metric
Sockets: 10mm 11mm 12mm 13mm 14mm
15mm 16mm 17mm 18mm 19mm 21mm
22mm 26mm 27mm 2 Deep Flip Sockets: 3/4"
x 13/16 19mm x 21mm
P/N 12-01949.....

1/2" DRIVE MASTER 39 PIECE METRIC IMPACT SOCKET SET



* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy duty blow mold case
2669 Includes 19 Standard Sockets: 9mm
10mm 11mm 12mm 13mm 14mm 15mm
16mm 17mm 18mm 19mm 20mm 21mm
22mm 23mm 24mm 26mm 27mm 30mm 19
Deep Sockets: 9mm 10mm 11mm 12mm
13mm 14mm 15mm 16mm 17mm 18mm
19mm 20mm 21mm 22mm 23mm 24mm 26mm 27mm 30mm
P/N 12-01950.....

1/2" DRIVE EXTRA THIN WALL 9 PIECE SAE & METRIC WHEEL PROTECTOR IMPACT SOCKET SET



* Durable outer sleeve and insert protects high polished wheels and lug nuts from damage
* Fully guaranteed
* Heavy duty blow mold case
* CR-MO alloy steel for long life
2849 Includes 6 SAE Sockets: 3/4" (light green) 13/16" (purple) 7/8" (green) 15/16" (brown) 1" (silver) 1-1/16" (black) 3 Metric Sockets: 17mm (blue) 19mm (yellow) 21mm (red)
P/N 12-01953.....

TO

SUNEX WRENCH SETS

7 PIECE JUMBO SAE COMBINATION WRENCH SET



- * High density, dropped forged alloy steel for strength
- * Raised panel design
- * Comes with sturdy metal clip for storage

9707 Includes: 942-1-5/16", 956-1-3/4", 944-1-3/8", 960-1-7/8", 948-1-1/2", 964-2", 952-1-5/8"
P/N 12-01967

14 PIECE SAE COMBINATION WRENCH SET



- * Canvas pouch included
- * Raised panel design
- * High density, dropped forged alloy steel for strength

9714 Includes: 712-3/8", 726-13/16", 714-7/16", 728-7/8", 716-1/2", 730-15/16", 718-9/16", 732-1", 720-5/8", 734-1-1/16", 722-11/16", 736-1-1/8", 724-3/4", 740-1-1/4"
P/N 12-01970

14 PIECE ANGLE HEAD SAE WRENCH SET



- * Canvas pouch included
- * Fully polished drop forged alloy steel
- * 15° and 60° angled ends for added convenience

9914 Includes: 991401-3/8", 991408-13/16", 991402-7/16", 991409-7/8", 991403-1/2", 991410-15/16", 991404-9/16", 991411-1", 991405-5/8", 991412-1-1/16", 991406-11/16", 991413-1-1/8", 991407-3/4", 991414-1-1/4"
P/N 12-01975

14 PIECE ANGLE HEAD METRIC WRENCH SET



- * Canvas pouch included
- * Fully polished drop forged alloy steel
- * 15° and 60° angled ends for added convenience

9914M Includes: 991404M-6mm, 991408M-13mm, 991403M-7mm, 991409M-7/8", 991402M-8mm, 991410M-15mm, 991401M-9mm, 991411M-16mm, 991405M-10mm, 991412M-17mm, 991406M-11mm, 991413M-18mm, 991407M-12mm, 991414M-19mm
P/N 12-01976

8 PIECE FLARE NUT CROWFOOT WRENCH SET



- * 3/8" Drive
- * Fully polished drop forged alloy steel
- * Mounted on a convenient storage rail

9708 Includes: 970802-3/8", 970810-5/8", 970804-7/16", 970812-11/16", 970806-1/2", 970814-3/4", 970807-9/16", 970818-7/8"
P/N 12-01968

7 PIECE JUMBO STRAIGHT CROWFOOT WRENCH SET



- * Fully polished drop forged alloy steel
- * 1/2" Drive
- * Reusable blow mold storage tray

9720 Includes: 97732-1", 97734-1-1/16", 97736-1-1/8", 97738-1-3/16", 97740-1-1/4", 97760-1-3/8", 97744-1-1/2"
P/N 12-01971



6 PIECE JUMBO METRIC CROWFOOT WRENCH SET

- * Fully polished drop forged alloy steel
- * 1/2" Drive
- * Reusable blow mold storage tray

9722 Includes: 97746-1-5/8", 97752-2", 97748-1-3/4", 97754-2-1/8", 97750-1-7/8", 97756-2-1/4"
P/N 12-01972



10 PIECE METRIC FLARE NUT CROWFOOT WRENCH SET

- * Fully polished drop forged alloy steel
- * 3/8" Drive
- * Mounted on a convenient storage rail

9710M Includes: 971010-10mm, 971015-15mm, 971011-11mm, 971016-16mm, 971012-12mm, 971017-17mm, 971013-13mm, 971018-18mm, 971014-14mm, 971019-19mm
P/N 12-01969



8 PIECE JUMBO METRIC STRAIGHT CROWFOOT WRENCH SET

- * Fully polished drop forged alloy steel
- * Mounted on storage rail for convenience
- * Reusable blow mold storage tray

9730 Includes: 97324-24mm, 97328-28mm, 97325-25mm, 97329-29mm, 97326-26mm, 97330-30mm, 97327-27mm, 97332-32mm
P/N 12-01973



SUNEX TOOLS

SX-225RA AIR DRILL

3/8" reversible. Muffled handle exhaust. Heavy-duty, industrial rated geared chuck.
P/N SX225RA

SX-232A ANGLE DIE GRINDER

1/4", right angle. Rear exhaust. Built in regulator lever throttle for positive speed control
P/N SX232A.....



SX-230A DIE GRINDER & ACCESSORIES

1/4" air die grinder. Built-in regulator. Exhaust directed away. Lever throttle for positive lever control.
Die Grinder..... P/N 12-01124.....



SX-229B AIR NIBBLER

Cuts metal without distortion up to 18 gauge. Lever throttle for easy operation. Compact design.
P/N 12-01123



X-227B HEAVY DUTY METAL SHEARS



Muffled handle exhaust. Heavy-duty, ball and needle construction. Pneumatic.
P/N 12-01122.....

TO

SUNEX TOOLS

SUNEX 20 TON CAPACITY AIR BOTTLE JACK



Dimensions (In.)-6.5 x 8.9

* Designed for operating either manually or pneumatically * Air hose can swivel in any direction * Fitted with safety valve to prevent overloading * Two piece handle allows for easy pumping * Extension screw gives added height when necessary * Minimum air pressure required is 90 PSI, 7 Bars * Double spring return 4920BAH Specifications: Capacity (Tons)-20, Power Lift (In.) -7, Closed Height (In.) -10.5, Raised Height (In.) -20.1, Add. Screw Adj. (In.)-3.5, Base P/N 12-01958



SUNEX C-CLAMPS

*4" * Provides sure, non-slip clamping on all shapes * Drop-forged steel for greater strength and durability * Zinc-plated acme thread screw for accurate control P/N 12-01944

4 PIECE 3/8 INCH DRIVE UNIVERSAL SPARK PLUG SOCKET SET



* All four sized spark plug sockets in one convenient set * Fully polished chrome vanadium alloy steel for durability * Universal joint design for easy access in confined areas * Rubber inserts hold spark plug securely during installation and removal * Includes new 9/16" size * Convenient blow mold case * Fully guaranteed 87602 Specifications: 8844-9/16, 8844-5/8, 8844-3/4, 8844-13/16 P/N 12-01966

8 PIECE PROFESSIONAL SCREWDRIVER SET - ORANGE



* Includes 5 flat tip drivers and 3 Phillips tip drivers * Hardened chrome vanadium shafts * Vapor blasted magnetic tips * Packaged in heavy molded plastic tray for storage * Hex bolsters on most sizes for extra turning power 87602 Specifications: 98061-3/8" x 8", 98062-5/16" x 6, 98063-1/4" x 4", 98064-3/16" x 3", 98065-1/4" x 1-1/2", 98066-#2 Phillips x 4", 98067-#1 Phillips x 3", 98068-#2 Phillips x 1-1/2" P/N 12-01974

SUNEX DELUXE CREEPER



5. Height (Headrest Up)-9.5, Shipping Weight (lbs.)-29.0, Bed Size-30.625 x 16.5 x 2.5

* 1" Rugged steel tube construction * Oversize frame for added comfort * Tapered frame and head rest for extra clearance in tight areas * 3-1/2" Heavy duty chrome finished casters with rubber tread * 5-Position stick shift headrest adjustment system * Rear drop frame design for extra leg comfort 8515 Specifications: Length (In.)-45.5, Width (In.)-19, Height (Headrest Down)-11.5, Shipping Weight (lbs.)-29.0, Bed Size-30.625 x 16.5 x 2.5 P/N 12-01964



SUNEX SERVICE CART WITH LOCKING TOP & DRAWER

* 8016 - 3 Drawer Unit * 8011 - Large Locking Screwdriver/Pry Bar holder * 8004 - Side Work Bench * 8014 - Leg extension Drawer liner sold separately Note: This item is purchased as a complete unit with the accessories listed above. 8013ADLX Specifications: Load capacity (lbs.)-350, Shipping weight (lbs.)-115.5, Color: Blue-8013ABDLX, 8844-13/16-13/16" P/N 12-01962

SUNEX SERVICE CART WITH LOCKING TOP & DRAWER



* This combination makes for the ultimate cart * The locking drawer and locking top are keyed the same, so the user only has one set of keys * Clip-on roller-bearing slides on drawer * Large, easy to maneuver 4" wheels: 2 locking and 2 standard, Chrome 16 gauge steel frame, Durable powder coated finish, 3" deep shelves, Available colors: red, blue, black & yellow 8013A Specifications: Load capacity (lbs.)-350, Shipping weight (lbs.)-69.5 P/N 12-01963



SUNEX 6 INCH VISE

* 2 locking mechanism for stability * Made from cast iron with steel handle threads 87602 Specifications: Base Swivel- 360 deg. P/N 12-01961



SUNEX 3/8 INCH CUTTING WHEEL - 5 PCS.

* For general purpose metal cutting 3" x 1-1/16" double reinforced * Use with 3/8" arbor * Do not exceed 20,000 RPMs * Comply with ANSI B7.1/OSHA regulations 87602 Specifications: Diameter (In.)-3, Qty. Included -5, Max RPM -25,000 P/N 12-01965

6 INCH BENCH GRINDER WITH LIGHT



* Bright, flexible work light * Has two 6" grit wheels: coarse 36 and medium 60 * Each wheel has protective spark guard and adjustable eye shield * Mounting holes and rubber feet make grinder easy to mount on a stand (optional - part #5003 or 5005) or use on an approved worktable or workbench * Conveniently placed, easy to use on/off switch * Long, 6-foot power cord * Cast iron base for durability * Ball bearing construction for smooth operation * 1/2" Arbor accepts standard 6" wheel * UL & CSA Listed * Includes: eye shields (RS500119B) & tool rests (RS500135B) 5001A Specifications: Power-1/2 HP Motor, No Load speed .3450 RPM Motor -3.5 Amp, Voltage -115V/60Hz, Shipping Wt. (Lbs) -22 P/N 12-01959



5 TON CAPACITY 8-WAY, 2-3 JAW REVERSIBLE PULLER

* Can be assembled to make a two or three jaw puller when additional stability is needed * Reversible jaw design for added versatility and a broader range of pulling capability * Ideal for pulling gears, bearings, pulleys and other press fit parts 3908 Specifications: Maximum reach (in.)-5.5, Maximum spread (in.) -7 P/N 12-01957



3/16 INCH HEAVY DUTY RIVET GUN

* Sets all conventional, standard blind rivets and all structural blind rivets, mono bolts and t-rivets up to and including 3/16" diameter in all materials * Comes with nose pieces in 3/32", 1/8", 5/32", and 3/16" sizes * Features a pulling (traction) power of 1,983 lbf @90PSI * Forged aluminum handle * Nose pieces stored conveniently underneath base of gun * Minimum air pressure required is 90 PSI, 7 Bars * Includes blow molded storage case SX0918T Specifications: Air Pressure (PSI) -75-90, Stroke Length (In.) -11/16, Height (In.) -12-3/8, Weight (Lbs.) -3.70, Min. Hose Size (I.D.) -3/8, Air Inlet Size (NPT) -1/4 P/N 12-01933

TO

AN WRENCHES - DIGITAL THERMOMETERS

SOFTORQ CARBON FIBER AN WRENCHES



SofTorq currently offers the following patented scratch-resistant product: * Designed to meet the torque requirements for fastening your aluminum anodized hydraulic A/N fittings * Made from a special formulation of fiber-glass layered with carbon fiber for strength and durability * Comes in SAE, Metric, and AN sizes * Designed, Assembled, and Made in the U.S.A. * Patented in design Benefits: * Will not severely scratch the specialty coating or damage aluminum



anodized hydraulic A/N fitting like metal AN wrenches would when the tools are used for its intended purposes. * Scratched or damaged fittings lead to the dangers of corrosion and reduced product life * Reduce flight weight when carried on-board aircraft

INDIVIDUAL

| Mfg. P/N | Size | Part Number | Price |
|----------|--------|-------------|-------|
| AN4 | 9/16 | 12-02039 | . |
| AN6 | 11/16 | 12-02040 | . |
| AN8 | 7/8 | 12-02041 | . |
| AN10 | 1" | 12-02042 | . |
| AN12 | 1-1/4" | 12-02043 | . |
| AN16 | 1-1/2" | 12-02044 | . |

SET

| Mfg. P/N | Part Number | Price |
|-------------|-------------|-------|
| AN4 to AN16 | 12-02045 | . |
| AN6 to AN16 | 12-02046 | . |



HANDHELD ANTI-ICING AND DEICING SPRAYERS

Handheld Deicing Sprayers are aircraft-portable pressure sprayers appropriate for defrosting and light deicing operations. They are commercial grade, polyurethane, controlled-pressure sprayers designed to spray hot SAE Type I deicing fluid directly on your aircraft to remove frost, and light snow & ice. They are equipped with a 2 piece brass wand, flat-fan spray pattern, high-capacity, interchangeable nozzle tip that sprays 1.2 gpm of deicing fluid at 20 psi. They will also accept our optional 120-volt, 1100 to 1700 watt electrical immersion heaters to quickly heat the fluid within the sprayer tank to 160

| Description | Dimensions | Part No. | Price |
|---------------|---------------------|----------|-------|
| 1 Gal Sprayer | 7" Dia. x 17" H | 12-21605 | . |
| 2 Gal Sprayer | 8.5" Dia. x 19.5" H | 12-21610 | . |
| 3 Gal Sprayer | 9.5" Dia. x 21" H | 12-00499 | . |

To heat Deicing fluid you need to purchase a heater below.

| Heaters | | | | | |
|---------|-------|------|------------------|----------|-------|
| Voltage | Watts | Amps | Application | Part No. | Price |
| 120 | 1,100 | 9.2 | 12-21605 Sprayer | 12-02087 | . |
| 120 | 1,400 | 11.7 | 12-21610 Sprayer | 12-02088 | . |
| 120 | 1,700 | 14.2 | 12-00499 Sprayer | 12-02089 | . |

DEICING CARTS



Powered Deicing Carts are designed specifically for FBO, Air Charter, Corporate, Cargo, and Flight School operations for all general aviation aircraft. They will quickly and efficiently spray aircraft ground deicing or anti-icing fluid on your aircraft prior to takeoff. These portable, 3-wheeled carts are powered by either a small gasoline engine or a 12-volt electric pump. While both types will spray deicing or anti-icing fluid, they each have different characteristics which make them more appropriate for one type of fluid over the other.

| Gas powered engines | | | |
|--|----------|-------|--|
| Description | Part No. | Price | |
| 40 Gallon 3.5 Hp gas Engine with 2500 watt heater and pintel ring. | 12-02083 | . | |
| 60 Gallon 3.5 HP gas engine with 2500 watt heater and pintel ring. | 12-02084 | . | |
| Electric powered engine | | | |
| Description | Part No. | Price | |
| 25 Gallon 12 volt Electric Cart with self Containment kit and pintel ring. | 12-02085 | . | |
| 60 Gallon 12 volt Electric Cart with self Containment kit and pintel ring. | 12-02086 | . | |

MICROTEMP DIGITAL INFARED THERMOMETERS



Digital, non-contact infrared thermometers are used for hundreds of practical applications and are essential tools for professional automotive and aviation technicians.

Infrared Thermometers (IRTs) are great automotive and race tuning diagnostic tools-and are great for countless diagnostic tasks. Check track surface temperatures, tire temps, brake rotors, header and exhaust temps, air intake temp, heating and A/C vents. Think you have a leaky window? Find the link with a Microtemp IRT.

Applications:

- Engine Block Temperature
- Compressors and Turbochargers
- Any Cylinders Misfiring
- Batteries and Electrical Connections
- Cooling System Diagnostic
- Heating & AC System / Vent Testing
- Engine Diagnostics
- Brake Diagnostics (Rotor Temp)
- Window Defrosters
- Alignment (Test Tire Temp)
- Bearing Temp
- Exhaust and Catalytic Converters
- All Cylinders Running At Same Temp?

| Model | Description | Part No. | Price |
|--------|--|----------|-------|
| MT-002 | Temp Range: -27F - 428F (-33C - 220C); Compact Pocket Size, Metal Case | 12-01656 | . |
| MT-EXP | Temp Range: -58F - 752F (-50C - 400C); Laser Target, Pistol Grip | 12-01657 | . |
| MT-100 | Temp Range: -27°F - 230°F; Distance to Spot Ratio (D:S) 1:1, Accuracy +/-2°F, Response Time: 1 Second, Dimensions: .75" x 3.25", Battery Type 2 LR44 | 12-01994 | . |



WIDE RANGE DUAL PORT DIGITAL THERMOMETER

Jumbo Display with four digit LCD, Dual Channel K type ports T1/T2, Accepts K/J thermocouples, Fast response, Hi/Lo temperature alarm, Temperature hold, Instrument displays in °F/°C/Kelvin- absolute temperature

Features

- Jumbo Display with four digit LCD
- Dual Channel K type ports T1/T2
- Accepts K/J thermocouples
- Fast response
- Hi/Lo temperature alarm
- Temperature hold
- Min./Max./Avg.
- Clock setting
- Relative temperature mode
- Low Battery and Overload indicators
- Auto Power off
- Protective rubber housing
- Instrument displays in °F/°C/Kelvin- absolute temperature

Specifications

- Temp/ range: "K" -148°F to 2372°F, "J" range -148° to 1832°F
- Temperature Accuracy: ± 0.1% + 1°F
- Temperature Resolution: 0.1° up to 99.9° and 1° thereafter
- Sampling rate: 1 second
- Battery Life: 550 hours
- Operating Conditions: 32° to 122°F, 0-80% RH
- Storage Conditions: -4° to 140°F, 0-80% RH
- Weight: 415 grams with batteries
- Dimensions: 164 x 76 x 32mm
- Four AAA 1.5V Batteries

P/N 12-01893.....

TO

ENGINE TOOLS

VALVE WOBBLE TEST FIXTURE

The Valve Wobble Test Fixture for parallel valve Lycoming engines is used to comply with Lycoming SB-388a. Quality made of aluminum and alloy steel, it is easy to use with no set screws or feeler gauges required. Allows direct reading of wobble from dial indicator. Note: Will work on an angle valve engine.



Fixture without indicator P/N 12-21500
 Fixture with indicator P/N 12-21505

DISTRIBUTOR BLOCK SPRING INSTALLATION TOOL

This tool facilitates the proper installation of contact springs on Bendix magnetos. The O-ring locator ring assures proper location of the tool in the contact tower. Features knurled body grip and ball plunger grip. Made of alloy steel



P/N 12-21510

VALVE SPRING COMPRESSOR

This tool is used to compress valve springs during valve removal and installation. It is ergonomically designed for shop and field use and comes with special pivot pin. Features alloy steel construction with nickel plating.



P/N 12-00202

ELECTRODE SPREADING TOOL

This tool is used to increase the electrode gap on all massive electrode spark plugs. It is constructed from heat treated alloy steel and is nickel plated.



P/N 12-51520

SPARK PLUG SERVICE KIT

Our spark plug service kit includes the Precision Gap gapping tool which is easy to use, features fine thread adjuster and ball pressure tips, and works on all massive electrode plugs. Also includes the 18mm Thread Cleanout Tool with spring loaded jaws which offer maximum thread penetration & control carbon build-up in threads. Completing the Kit is a double-end Gap Plug Gauge which features an aluminum handle and is easy to use. Kit comes complete with durable birchwood storage case.



P/N 12-21525

THROTTLE SHAFT BUTTERFLY SCREW STAKING TOOL

This quality made alloy steel tool facilitates the proper staking of throttle shaft butterfly screws and eliminates the possibility of damaging the carburetor during staking. The tool can easily be operated by one person on the bench without chisels, special fixturing or hammers. All wear components are easily replaceable for long service life.



P/N 12-21528/ea.

BENDIX MAG LOCK

This Bendix Mag Lock works on S4 and S6 and other Bendix Mags. To use simply place a cotter pin loosely into lower plunger hole. Screw sleeve into magneto case. Align red slot in plunger parallel to mag tooth gear. Remove cotter pin to engage gear tooth. Dimension: 2-3/4" x 1/2" x 3/4"



P/N 12-02243

SAFETY MAGNETO LOCK TOOL

This handy tool fits most Bendix magnetos and prevents damage to distributor gear teeth brought about by accidental turning of the engine during magneto installation. Use for E gap or engine timing. Body taper locks into timing window. Polyurethane rubber throughout.



P/N 12-21535

LYCOMING TIMING POINTER

This tool is used to align timing numbers and marks to the crankcase parting line on Lycoming engines. It permits timing from the marks on the aft side of the flywheel. A spring clip holds the tool to the flywheel.



P/N 12-21540

CONTINENTAL O-200 TIMING POINTER

This tool is used to align timing numbers and marks to the crankcase parting line on the Continental O-200 engine. It is held to the propeller flange with magnets, and eliminates the need for all other timing angle devices and TDC indicators. Quality made from delrin and tool steel.



Greatly simplifies the timing of new magnetos

and periodic timing checks. P/N 12-21545

SIDEWINDER SPEED WRENCH

The Sidewinder Speedwrench specialty tool was developed to counter the frustrations of using standard socket wrenches especially in applications where excessive repetitions are required to install or remove long bolts; or where there is not enough resistance involved to allow the ratchet to function; or where there is not enough working space for efficient use of the standard ratchet wrench. The sidewinder can cut work time in half for professional mechanics and aircraft builders. Now being used by major racing teams, the Sidewinder is a revolutionary addition to every tool box.



1/4"P/N 12-21109
 3/8"P/N 12-21100
 1/2"P/N 12-21110

ENGINE OVERHAUL STAND

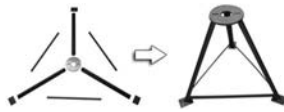
This inexpensive engine overhaul stand is ideal for actual overhaul and for storage of engines. Constructed of heavy duty steel, it features three legs which allow it to sit level on uneven floors and comes complete with an adapter spacer block. The stand is 24" tall with made for user installed casters and comes predrilled for Continental A-65 through O-520 series engines and Lycoming 65 through O-720 engines. A quality engine stand at an affordable price.



P/N 12-21555

ENGINE OVERHAUL STAND KIT

The engine stand kit has all of the components to construct an engine stand. Beginning at the top; the engine stand kit includes (1) The top plate. Designed to bolt down the engine flange to the stand. (2) Three legs that are pre-cut to the proper angle. (3) Three spreader bars to hold the base of the stand from spreading apart. (4) Three feet to stabilize the base and allow installation of casters. The kit is ready to weld. 24" tall when finished..



P/N 12-01364

TWISTER DAMAGED NUT & BOLT REMOVERS

These handy Twister tools work with a socket or wrench and removes nuts regardless of the stud length. No chisels, hammers, drilling, or torches are required. No more busted knuckles! The flush face design allows the remover to grip on the smallest of surfaces, and only 3/4" of working space is required. The same set works on both standard and metric damaged bolts and nuts as well as on collar and flange nuts. Deep Socket. Made from high quality tool steel.



| Part No. | Nut or Bolt Size | Price |
|----------|------------------|-------|
| 12-00152 | 7/16" or 10 mm | . |

TO

TOOLS

LYCOMING BAFFLE SPRING COMPRESSOR



Our top quality Lycoming Baffle Spring Compressor speeds up the removal & installation of cylinder baffle springs. It eliminates the danger of broken or bent cylinder fins caused by use of screwdrivers and punches. This tool is easy to use and features 2 pivot locations for parallel and angle valve cylinders.

P/N 12-30200

VALVE SPRING COMPRESSOR TOOL



This unit will work on Continental 65 thru 0300, and some 0-470's. Lycoming 0320 & 0360, and most any cylinder with a vertical valve constructed head.

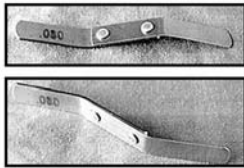
It is extremely simple to use. Place Spring Compressor in drill press, and a length of wood in cylinder (to keep valve seated). Depress and remove valve stem clips, and spring. Removes valves in a minute. P/N 12-02072

LYCOMING VALVE SPRING COMPRESSOR



This cast aluminum alloy valve spring compressor fits Lycoming parallel valve and angle valve horizontally opposed engines. An excellent tool at an economical price. P/N 12-21520

LYCOMING TAPPET GAUGE



Similar to Lycoming Gauge ST23, this tappet gauge is Rockwell hardened to 48-52 and precision ground to .028 and .080. This gauge is a must for professional aircraft mechanics. P/N 12-00918

EAR ISLAND REMOVAL TOOL



When substantial quantities of material have to be removed from the exhaust port, it may be necessary to also remove the island around the exhaust stud area. The ear island removal tool and pilot can be used to accomplish this without the use of power tools. P/N 12-17608

ECONOMIZER VALVE SETTING TOOL



The economizer valve adjusting tool is a simple, functional gage that eliminates the hassle of using a depth mic. The tool is precision made to assure required accuracy. P/N 12-17500

DRILL PILOT SLEEVE & BOLT HOLE BULLET

DRILL PILOT SLEEVE - Great for getting drill point centered, for drilling off rivet heads. Eliminates scoring of material and paint. Set of 3 (3/32, 1/8, & 5/32) Used with #40, 30, & 20 Drill Bit P/N 12-02092



BOLT HOLE BULLET - Every tool box should have a set. Simply tap bullet into bolt hole requiring alignment, and tap bullet on through with proper AN Bolt Set of 3 (1/4, 5/16, 3/8 7/16 and 1/2inch) P/N 12-02093

LINK® TOOLS LOCKING SOCKET SETS



7-PC LINK 1/4 & 3/8 INCH PROFESSIONAL UPGRADE AND DELUXE PROFESSIONAL SET

LINK Tools are available as professional upgrade sets for customers that wish to upgrade their tool chests with just a few LINK Tools. Additionally, a variety of sets with sockets and bits are available in convenient mobile cases. Adding a few LINK Tools upgrades your entire tool chest! The revolutionary LINK Tools are forged from solid steel, with a distinctive chrome finish for outstanding durability and strength. LINK Professional Upgrade Sets are available and work with all detent sockets.

Increase the productivity of every tool in your chest! **Comes with:** Locking Ratchet • Locking Unidriver® tool • Locking U-Joint • Locking Palm Wrench • 2" Locking Extendor™ Bar • 3" Locking Extendor™ Bar (1/4" Drive Only) • 6" Locking Extendor™ Bar • 9" Locking Extendor™ Bar ***available in deluxe set with Ratcheting Unidriver**

| Description | Part No. | Price |
|--|----------|-------|
| 3/8" (38007) Up-grade Set | 12-01702 | . |
| 3/8" (38009) (with Ratcheting Unidriver) Deluxe Up-grade Set | 12-01703 | . |
| 1/4" (25007) Up-grade Set | 12-01704 | . |
| 1/4" (25009) (with Ratcheting Unidriver) Deluxe Up-grade Set | 12-01705 | . |
| Electric Tool Adapter 3"L | 12-01706 | . |



41-PC. LINK® 3/8" DRIVE SYSTEM SET

The revolutionary 3/8" Drive LINK® System tools are forged from solid steel, with a distinctive chrome finish. The set includes: [1] Universal Joint, [1] Unique UniDriver™ Drive, [1] LINK Automatic-Locking Ratchet, [2] Extendors™ (2 and 6-inch), [2] Spark Plug Sockets (5/8 and 13/16-inch), [9] SAE 6-Point Sockets (5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, and 13/16-inch), [11] Metric 6 Point Sockets (8, 9, 10, 11, 12, 13, 14, 15, 16, 17, and 18-mm), [5] Socket Mounted Hex Bits (3/16, 5/16, and 3/8-inch, and 6 and 10-mm), [5] Socket Mounted Torx or Star Bits (T-25, T-30, T-40, T-45, and T-50), [4] Socket Mounted Screwdriver Bits (5-mm slotted, 9/3" slotted, #1 Phillips and #2 Phillips), and a Case. P/N 12-00807



41-PC. LINK® 1/4" DRIVE SYSTEM SET

LINK® extensions and sockets will not pull apart until you unlock them. A small pull on the locking device lets the socket or extension fall free. The new 1/4" Drive Quick-Lock™ Set comes with 12 pt. sockets in a new custom-fitted carrying case that floats and contains storage space. The set includes the following 6 Link-Lock™ Drive Tools: [1] Universal joint, [1] All-metal UniDriver® [1] 36-tooth Slide Button Quick Release Positive Locking Ratchet, [3] Extendor™ Extensions (1.5, 3, 6-inch); 16 12-point Sockets: [8] SAE (5/32, 3/16, 7/32, 1/4, 9/32, 5/16, 11/32, and 3/8 inch), and [8] Metric (4, 5, 6, 7, 8, 9, 10, 11 mm); 19 dingle piece machined steel socket bits: [6] Torx (T-8, T-10, T-15, T-20, T-25, T-27), [9] Hex (5/32, 3/16, 7/32, and 1/4 inch, 3, 4, 5, 6, and 7mm), [4] Screwdriver (#0 and #1 Phillips, 5.5 and 6.5 mm slotted); and a custom-fitted Case with storage space. P/N 12-02840



LINK® TOOLS PALM WRENCH & SPEEDER

LINK® extensions and sockets will not pull apart until you unlock them. A small pull on the locking device lets the socket or extension fall free. The locking device is similar to those found on air hose co plings, but is a lot easier to lock and unlock. Hand spin, then attach your ratchet to torque down. Not with old fashioned ball bearings, but a space age case-hardened nickel plated steel pin. Or, leave the Palm Wrench on your ratchet and use it as a handy spinner! Exceeds 130% of ANSI standards. P/N 12-00808

2" Palm Wrench/Speeder 3/8-in. Drive P/N 12-00809



LINK® BRACE STYLE SPEEDER 16.5 INCH

Just the accessory for tight places where there's not much room to turn. Hand spin, then attach your ratchet to torque down. Made of aluminum and steel. Highly polished and nickel chrome-plated for durability, rust resistance, and beauty. Exceeds 130% of ANSI standards. 1/4" Drive, 16.5" Speeder #25557. P/N 12-01701



LINK® 1/4" DR. LOCKING ELECTRIC-TOOL ADAPTER

For use with your battery-operated electric drill or screwdriver to always get secure locking and quick speed on your sockets and attachments. One end goes into the chuck of your power tool and the other clicks into a socket, socket-mounted accessory, or other LINK drive tool with the same Quick-Lock technology that gives you Hand-To-Work locking. P/N 12-00933

TO

ENGINE TOOLS



PRECISE-GAP SPARK PLUG GAPPING TOOL

Precise Gap is a simple tool to gap two-, three- or four electrode 18 mm sparkplugs. Only 2" overall - comfortably handheld. Precision made of stainless steel. "T" handle adjusters move the ground electrodes closer to the center electrode until wire feeler identifies proper gap. Adjusters have fine thread with ball tips for precise movement. Don't buy an inferior imitation at a higher price!

P/N 12-11600

.016 NOMINAL GAP PLUG GAUGE



Many customers have indicated that they have had difficulty obtaining setting wires for gaging the plug gap. We now provide a handy tool at reasonable cost. No need to buy extra gauge sizes that you don't need. Furnished with protective end caps.

P/N 12-17100.....



THREAD CLEANOUT TOOL

In servicing spark plugs, a common problem is carbon accumulation in the jug threads. Cleaning these threads regularly can save big money by preventing thread damage and the need to pull the jug and install thread inserts. This specially designed tool works very well to limit this problem. It provides maximum depth penetration and its unique spring action assures that there will be no enlargement of the existing thread pitch diameter.

P/N 12-17200



COMPASS ADJUSTING TOOL

The compass screwdriver is a great little tool that is totally non-magnetic, but also overcomes the shortcomings of solid brass or aluminum tools. This tool has a nice hex aluminum handle and a stainless steel driver insert. No need to worry about damaging the tip on a frozen compensator screw, and you can also remove the cover plate screws with the same tool.

P/N 12-17300

THROTTLE SHAFTBUSHING KNOCKOUT



The throttle shaft bushing removal tool is very competitively priced and will help you avoid a jury-rigged operation that could damage an expensive carburetor body. Now there is no reason not to have one. They are available and affordable.

P/N 12-17400

SPRING TOOL



Get a handle on those springs! The "C" shaped tip fit the bend in spring end and won't slip. Can be used to install and remove springs on anything!

P/N 12-16945

TEMPEST AA473 OIL DRAIN TOOL



Tired of messy oil filter changes? Tempest oil drain tool with a twist of the knob drills a hole in the filter and allows the oil to drain out of the filter into your container. No mess, easy to do and inexpensive.

P/N 12-02248



S4-1 RACE REMOVAL TOOL

A & P mechanics will find this S4 outer bearing race removal tool to be very effective and well priced. Hemispheres held together by the "O" ring are inserted together behind the bearing race. The pilot is then inserted to expand and lock the halves & push out the race. You'll like its simplicity and ease of use.

P/N 12-17601



S4-2 RACE REMOVAL TOOL

The S4 magneto drive end inner race removal tool works in conjunction with a standard bearing puller. The split gripper ring fits behind and around the race and is captured in the puller ring by 2 opposing set screws. A groove on the puller ring provides the point of attachment for the puller arms.

P/N 12-17602.....



S4-3 RACE REMOVAL TOOL

The S4 magneto seal installation, inner and outer race installation tool is three tools in one and is proportioned in such a way that it is easily accommodated by most small bench arbor presses.

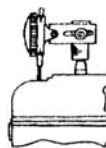
P/N 12-17603

TIMING JUMPERS



The timing jumpers are easily used for timing magnetos without removing the breaker box cover. Simply remove the "P" lead and replace with timing jumper. Then hook up timing light leads. These handy devices have proven to be a real time saver and, in some cases, an outright necessity. **SOLD IN PAIRS**

Bendix S4..... /pr.
P/N 12-17700.....
Bendix D2200, D3000, D3200, S6
P/N 12-17710..... /pr.



MAGNETO ROTOR BEARING SETTING GAUGE

Determines condition of excess bearing clearance and allows for precise adjustment of new bearings to prevent over or under preload. Available with or without dial indicator. Choice of 3/8-16 or 3/8- 24 threaded shaft fittings.

| Kit Description | Thread | Part No. | Price |
|------------------------|--------|----------|-------|
| Setting Gauge & Ind. | 3/8-16 | 12-17801 | . |
| Setting Gauge & Ind. | 3/8-24 | 12-17802 | . |
| Setting Gauge & Ind. | Both | 12-17803 | . |
| Setting Gauge, No Ind. | 3/8-16 | 12-17901 | . |
| Setting Gauge, No Ind. | 3/8-24 | 12-17902 | . |
| Setting Gauge, No Ind. | Both | 12-17903 | . |

STRUT LIFT JACK



In many instances, simple tire changing, bearing packing, etc., can be a real problem unless the wheel can be lifted in a safe, secure manner. The strut lift shown accomplishes this easily. A specially designed lift pad securely captures the strut elbow or gear leg. The compact jack can be stored in your toolbox.

P/N 12-18000

TO

ENGINE TOOLS

PISTON RING COMPRESSOR SET



The most efficient, versatile and dependable tool of its kind on the market. Designed to operate both vertically and horizontally. Fine-tooth ratcheting lock permits bands to be contracted in extremely small increments. Positive lock insures a free hand. Eliminates broken rings during installation. Set includes compressor pliers and the two bands (1123, 1125).

| P/N | Size | Engine Application |
|------|------------------|--------------------------------------|
| 1123 | 3-7/8" to 4-1/8" | Cont. A-65, C-85, C-90, 0-200, 0-300 |
| 1125 | 4-3/8" to 4-5/8" | Cont. E-225, IO-470 |

Set P/N 12-10900
 Pliers P/N 1114
 Individual band # 1123 P/N 1123
 Individual Band # 1125 P/N 1125



PISTON RING FILER

A portable rotary filer. Sizes any make, type, size of ring with machine shop accuracy. Turning crank files both ends at the same time.

P/N 12-11000
 Replacement Cutter File
 P/N 12-11100



CYLINDER BASE NUT WRENCHES (CONTINENTAL)

Made of top quality tool steel. 12 Point with 1/2" square drive, 13" long. Set of 4 P/N 12-11200
or order individual wrenches below.

LYCOMING & CONTINENTAL CYLINDER BASE NUT WRENCHES

| Wrench Part # | Size | Engine Application | Price |
|---------------|-----------|--|-------|
| 2882 | 9/16" Hex | C-85, 0-200, 0-300, G0-300, E-185, E-225, 0 & IO-470, IO-360, IO-520 | . |
| 2882-2 | 1/2" Hex | A-65, C-85, 0-200, 0-300, G0-300, E-185, E-225, IO-360 | . |
| 2882-3 | 5/8" Hex | A-65, 0-470, IO-520 | . |
| 2882-4 | 3/4" Hex | No longer used on Cont.; Used on Lyc. 0-390D, D2 and all wide deck Lyc engines | . |

CYLINDER BASE NUT WRENCHES



1/2" Allen Head Hex... P/N 64942
 3/8" Allen Head Hex... P/N 64943

FOR ECONOMY WRENCHES SEE PAGE 613



ATS SPARK PLUG GAPPER

Sure-Gap is designed for use on all massive electrode aircraft spark plugs. Saves time and money, eliminates guessing of plug gap, prolongs plug life and ensures peak performance. 18mm. 1lbs shipping weight.

P/N 12-01682.....



ATS SPARK PLUG GAP GAUGE

Convenient Gap Gauge for all Champion and Autolite massive electrode spark plugs. Slider design keep gauge wires stowed away when not in use.

• Retractable slider design

- Includes wires for .015", .019", .018", and .022"
- Works with all Champion and AutoLite Massive Electrode Spark Plugs
- Replacement Wire Gauges are available. 1lbs shipping weight.

P/N 12-01692.....



ATS SPARK PLUG GAPPER & GAUGE 415K

A low-cost efficient gap setting tool for closing gaps on massive-electrode Aviation Spark Plugs. Great design allows it to clamp on to your workbench for easy gapping.

Features

- Manufactured from 4160 Tool Grade Steel
- CNC Machined surfaces for exact alignment
- Includes ATS450 Feeler Gauge
- Clamps to workbench for easy one-handed operation
- Compatible with all Champion, and AutoLite Massive Electrode Spark Plugs
- 2lbs shipping weight. P/N 12-01691

ATS SPARK PLUG THREAD CHASER



Chaser cleans threads in spark plug hole of dirt, carbon build-up, and metal particles. Double ended for both 14mm and 18mm threads. Neoprene band on hex drive holds tool securely in any 13/16" deep-well spark plug socket. 1lbs shipping weight.

P/N 12-01683.....

ATS MAGNETIC SPARK PLUG SOCKET



The new Spark Plug Socket features a thin-walled design to get into the tightest confines. Magnetic interior guarantees that you won't accidentally drop the plug during installation or removal. Works with all Champion and Autolite Aviation Spark Plugs.

- Works with all Champion and Autolite Aviation massive electrode Spark Plugs
- Thin-Walled design to get to the tightly spaced plugs.
- Magnetic interior holds spark plugs and keeps them from falling out
- 7/8" Socket
- 3/8" Drive
- 3-1/2" Overall Length
- Made of Chrome Vanadium Steel
- 1lbs shipping weight.

P/N 12-01693.....



ATS SPARK PLUG CLEANER

Cleans any size plug without changing grommet. Has 2-way valve (blast or air) and comes complete with abrasive powder. Ready to use.

P/N 12-01684.....



AIRCRAFT SPRUCE PLUG MAINTENANCE KIT

The Aircraft Spark Plug Maintenance Kit includes an aircraft spark plug tray, air-powered spark plug cleaner, feeler gauge, spark plug gap setting tool, aircraft spark plug socket, a set of 8 spark plug gaskets and a bottle of spark plug thread lubricant and anti-seize compound.

| Kit Includes: | | |
|---------------|--------------------------------|----------|
| Qty. | Description | Part No. |
| 1 | A/C ASSEMBLY SCRAPER KIT | 12-00977 |
| 1 | SPRK PLG CLEANER ATS12 | 12-01684 |
| 1 | ATS PLUG GAPPER ATS116 | 12-01682 |
| 1 | ATS SPRK PLG GAP GAUGE ATS450 | 12-01692 |
| 1 | ATS MAG SPRK PLG SOCKET ATS950 | 12-01693 |
| 8 | CPR SPRK PLG GKT M674 AN4027-1 | 07-00877 |
| 1 | CHAMP ANTI-SIEZE 4OZ 2612.S | 2612 |

P/N 12-02250.....

TO

SPARK PLUG & FILTER TOOLS



CT-415AV GAP SETTING TOOL

A low-cost efficient gap setting tool for closing gaps on massive electrode type aviation spark plugs. May be used as a hand tool, mounted on a bench or held in a vise. Furnished with one adapter for 18mm spark plugs. (P/N GT-204) and one CT-450 gap gauge. Wt. 1-1/2 lbs., 7-1/2" high. P/N 12-00796

CT-450 RETRACTABLE GAP GAUGE



High-impact red plastic case contains four sets of accurate, retractable "go" and "no go" wire gauges: 2 sets .015-.019 (.016 Nom.) 2 sets .018-.022 (.019 Nom.) Length: 3-1/2". Wt. 1-1/4 oz P/N 12-00797.....



CT-457 FINE WIRE GAP SETTING TOOL

Designed exclusively for adjusting fine wire electrode sparkplug gap. Two sizes of slots fit all platinum or iridium electrodes for quick adjustment. Red plastic case. P/N 12-00798



LEAD-MASTER WRENCH SETS

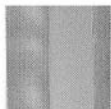
Reduce time to remove and install sparkplug ignition leads. Permit shortarc turning due to 12-point grip head.

CT911 3/4" "T" Handle Box Wrench P/N12-00799.....
 CT912 7/8" "T" Handle Box Wrench P/N12-00801.....
 3/4" & 7/8" Open End Box..... P/N12-00802.....



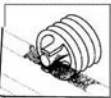
CT-907 "PLUG-MATE" MAGNETIC SPARK PLUG SOCKET

A companion tool to the "Plug-Master" and other 3/8" square drive wrenches. Built-in magnet holds plugs. Chrome plated. 3-1/2" long, 7/8" deep hex socket. Wt. 8-1/2 oz. P/N 12-00804.....



SCREEN CLEAN SPARK PLUG CLEANER

The new Screen Clean tool works great for field cleaning of spark plugs. It is non-abrasive and can be used for several cleanings. Simple to use—just work the bi-fold edge through the gap with several strokes before setting the gap. Actually removes deposits blasting cannot reach. P/N 12-15610



SPARK PLUG TRAY



This unique spark plug tray is quality made of PVC plastic. Each holding position has 18 mm thread so that plugs screw in for positive holding. This tray permits simultaneous inspection of either the electrode or barrel end of plugs, protects plugs from damage, and can be stored in any position. Optional carrying strap attaches to ends. P/N 12-30185.....

PLUG-A-LONG SPARK PLUG TRAY



Holds 12 spark plugs each hole stamped with cylinder number also marked top and bottom so each plug can be identified easily, no mix-ups. Plugs can be serviced and returned back to where they were removed. a must for aircraft mechanics. Made from 18 gauge steel. Blue powder coat finish. Dimensions: W=4.0", L=8.0", H=2.6. P/N 12-00974

ECONOMY SPARK PLUG GAPPING TOOL



This handy spark plug gapping tool is made from heat treated stainless steel for long life. To adjust the spark plug gap, simply place the tool into plug with ground electrode between the forks, push up on the tool bending the ground electrode closer to the center electrode setting nominal gap of .016". P/N 12-21352



OIL FILTER DRAIN TOOL

This oil filter drain tool permits draining spinon oil filter prior to removal from the engine. Just clamp on to rear of filter with cutter, punch small air bleed at the top of the housing with anice pick, remove cutter and oil will drain freely in-can or hose-extended funnel. P/N 08-04200

MODEL 2500 GAP SETTING TOOL



Complete with accessories, gauges and instructions for use. A precision gap setting tool for all massive electrode sparkplugs. Permits simultaneous adjustment of 2 opposite prongs without removing the spacing gauge. P/N 12-15500



CT-446 SPARK PLUG TRAY

Steel tray holds up to 12 plugs. Speeds handling of used or new plugs. Holes numbered to correspond with engine cylinders. Protects against shielding barrel contamination. Dims: 5"H x 8"L x 3.5"W. Wt. 1 lb.

(12 plug tray) P/N 12-00795.....
 (18 plug tray) P/N 12-00162.....

CT-475AV AVIATION SPARK PLUG TESTER



Designed to clean and test all 14 and 18mm massive and fine-wire electrode aviation sparkplugs. Cleaner uses dry-abrasive air blast which quickly and effectively removes conductive deposits. The new "solid state" ignition test system produces a very stable ignition test voltage for greater accuracy and reliability. Contains a built-in automatic water trap. Size: 11.5"H x 16-3/8"W x 12-1/8"D. Requires 125-180 PSI compressed air and 115V 50/60 Hz AC. Power consumption: 35 W. For use with 230V, a cord is required (special order). P/N 12-00794

230V power supply and power

MODEL 2600A VIBRATOR/CLEANER



Champion now makes it easier than ever to clean heavily lead-fouled spark plugs with this new, improved Vibrator/Cleaner. Each unit is shipped with all accessories required for cleaning fine-wire and 2-prong massive electrode aviation spark plugs. This unit features quick-change cleaning head assemblies, easy and inexpensive replacement of single cutter blades, improved heavy duty top-mounted switch and improved vibrator motor for faster cleaning and maximum durability.

Model 2600A P/N 12-15600

NO. 91893 ABRASIVE COMPOUND



For use in CT-475AV Dry Abrasive Cleaner/Tester. Contains 1 full charge (15oz.). Note: This main item no longer ships with a tip unless it is ordered separately. P/N 91893

ACCESSORIES

622 CHAMPION RUBBER TIP



P/N 12-94023

TO

SPARK PLUG TOOLS – OIL CAN CUTTERS



ULLMAN UNIVERSAL SPARK PLUG GAP GAUGE

This gap gauge provides easy accurate spark plug adjustment. Features flanged edge for electrode bending and beveled round hole for opening gap. 1-1/2" diameter. Wt.: 0.8 oz. Scaled from .020" to .100". Pewter plating makes the inches more legible for user to read. Also available in metric scale (0.5 mm to 2.4 mm). Gap gauge (inches) P/N 12-21375



CHAMPION CT-482 SPARK PLUG EROSION GAUGE

Champion CT-482 spark plug erosion gauge provides an easy, accurate method of determining whether your plugs have reached their maximum wear limit. Simply recap the used

plug to .016 nominal, then attempt to insert the electrode assembly through the chamfered hole in the gauge, as shown. Penetration of the hole by the electrode assembly indicates the plug has exceeded its recommended wear limits and should be replaced. The CT-482 is calibrated to reject plugs after their electrodes have eroded to at least one-half their original thickness. Although aviation spark plugs will continue to fire past this wear point, the rate of electrode erosion will increase as a result of non-parallel gaps and reduced sparking area. This leads to intermittent misfire, increased ignition system wear, and possibly costly unscheduled maintenance. P/N 12-00791

"GET THE LEAD OUT" SPARK PLUG VIBRATOR CLEANER



Anyone that cleans a lot of spark plugs knows that a spark plug vibrator cleaner is the only way to go to break up and clean out stubborn lead deposits. A spark plug abrasive cleaner is great for the finish cleaning, but it just won't take care of the lead deposits found down around the plug porcelain. Aircraft Spruce now offers an inexpensive way to professionally clean spark plugs. This 115V vibrator cleaner is small, light weight, easy to use. It is great for the pilot or mechanic that wants to carry one along — just in case. 90 day guarantee. P/N 12-21355

Extra Cutter Blades P/N 12-01147 /ea.

SPARK PLUG CLEANER



This economical spark plug cleaner cleans any size spark plug without changing the grommet. Features a 2-way valve and comes complete with abrasive powder and bag.

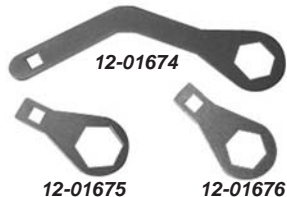
Cleaning Kit-2.2 lbs. P/N 12-00786
Extra Powder-1.8 lbs. P/N 12-00787
Extra Bag-0.06 lbs. P/N 12-00788

CT-709 OIL FILTER ADAPTER WRENCH



The CT-709 tool, designed by a professional aircraft mechanic makes the job easier. Manufactured from tool quality steel, the wrench features both 3/8" and 1/2" drives, as well as "flip over" reversibility. For Cessna adapter for 150 Series through 300 Series Aircraft. P/N 12-00792

CHALLENGER OIL FILTER TORQUE WRENCH



Challenger CP102 Oil Filter Wrench Torque Wrench Adapter 1" L P/N 12-01674
Challenger CP103 Oil Filter Wrench Torque Wrench Adapter 30 MMS P/N 12-01675
Challenger CP102 Oil Filter Wrench Torque Wrench Adapter 1" ST P/N 12-01676

OIL EASY WRENCH



The "Oil Easy Wrench" is specifically designed to remove the oil filter on any aircraft using the Teledyne Continental IO-520 or IO-550 engine. In fact, it is a universal oil filter wrench that works great on any piston engine airplane! Recommended at the Malibu Mirage Owners and Pilots Association (MMOPA) maintenance seminar!!! On IO-520's & IO-550's engines, it's the only wrench that can get between the top of the oil filter and the pressure pump and still provide enough leverage to remove the old (usually stuck) oil filter by hand. And because you are able to remove the old filter without any damage, your inspections of the old filter are more accurate, without any contamination from more extreme filter removal methods. P/N 12-01552

CHAMPION CT-456A INSPECTION LIGHT



The angled bulb socket is kept out of the viewing field of the magnifier providing a large viewing area. With a 2.75 magnification, it provides an extremely long focal length, ideal for viewing into spark plugs or igniter leads. It can also look into drilled or tapped holes on a part making it easy to spot burrs or foreign matter in items such as valves & fittings. P/N 12-00793

ACS OIL CAN CUTTER



This unit has the capacity of both P/N AFC-470 & 12-21395. It also uses the same replacement blade as the 12-21395. Anodized "Red" for corrosion resistance. Base can be clamped in a bench vise if desired. s black anodized. P/N 12-01048

TEMPEST OIL FILTER CAN CUTTER



This universal cutter from Tempest is easy to use and is a great addition to any toolbox. It's made from high quality aircraft aluminum, making it lightweight and very durable. Works on all aircraft spin-on oil filters. Adapter pin easily removed for 'male' filters. P/N 12-01392

Tempest Oil Can Cutter Blades. P/N 12-01393

AIRWOLF AFC-470 OIL CAN CUTTER



Every A&P knows the importance of cutting every single oil filter open after an oil change. The problem up to now was oil filters were difficult to open and the tools to open them were expensive. This is no longer the case with the Airwolf AFC-470 oil filter cutter. The AFC-470 is the easiest and quickest way to determine the current health of your engine. The Airwolf AFC-470 oil filter cutter is constructed out of a solid 6" billet of super strong 6061-T6 aluminum, hard anodized to resist scratches

and wear. Stainless steel rollers allow the oil filter to spin effortlessly during cutting. And finally, our specially designed razor sharp cutter wheel hardened to 60 Rockwell, will make quick work of opening any oil filter. This filter is designed to last a lifetime. Fits new style oil filters. P/N 12-00789

Replacement Cutting Wheel..... P/N 13-03958

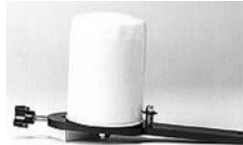
HAND CRANK OIL FILTER CUTTING TOOL



This tool was designed to eliminate much of the mess that occurs with small handheld oil filter cutting tools. Very simple to operate, it is excellent for individual aircraft owners as well as FBO's and maintenance shops where a lot of filters need to be cut. Simply clamp in a vise, screw on the filter, turn the cutter into the filter and hand crank to open the filter. The rugged construction enables this tool to operate trouble free for years. P/N 12-00122

Replacement Cutting Wheel..... P/N 12-01685

AVIATION OIL FILTER CUTTER



This aviation oil filter cutter will open any size oil filter canisters for your inspection. To use the tool, place the filter in a vice, attach the tool to the top of the filter, and rotate 4 to 6 turns to open the canister. The cutting wheel will stay sharp for about 50 uses, and is easily replaced when dull. The tool is made from 6061 aluminum with

a purple anodized finish. The tool is ready to use on any oil filter with a male or female thread. Oil filter cutter P/N 12-21395
Replacement cutting wheel P/N 12-21396

TEMPEST AA471 OIL FILTER MEDIA CUTTER



Tempest's new AA471 provides a low cost, efficient and safe tool that every mechanic will want to put in their tool box. Strong guard and non-retractable blade to secure the media and ensure an accurate cut. P/N 12-01854

TO

SPARK PLUG TOOLS – OIL FILTER TOOLS

AUTOLITE SPARK PLUG TOOLS



T-240 SPARK PLUG TRAY - Holds up to 12 plugs in numbered holes that correspond to cylinder location.
P/N 12-00702.....



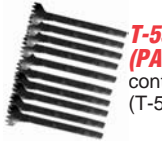
T-245 SPARK PLUG EROSION GAGE - Determines whether plugs have reached their maximum wear limit.
P/N 12-00703.....



T-551 SPARK PLUG CLEANER / TESTER (115 VAC)
- Tests plugs at 24,000V, and up to 150 psi to simulate engine conditions. P/N 12-00704.....



T-552 SPARK PLUG CLEANER / TESTER (220 VAC)
- Tests plugs at 24,000V, and up to 150 psi to simulate engine conditions. P/N 12-00705.....



T-550-10 SPARK PLUG CLEANING TOOLS (PACK OF 10) - Removes lead deposits and other contaminants, when used with a vibrator cleaner tool (T-559).
P/N 12-00706.....



T-554 AUTOLITE SPARK PLUG FEELER GAUGE - Sliding tabs check spark plug gap in decimals of an inch.
P/N 12-00707.....



T-555 SPARK PLUG THREAD CHASER - Unique apring action assures preservation of existing thread pitch diameter.
P/N 12-00708.....



T-556 SPARK PLUG THREAD LUBRICANT & ANTI-SEIZE COMPOUND - Helps to prevent galling and lubricates threads during installation.
P/N 12-00709.....



SPARK PLUG DEEP SOCKETS - T-557-1 3/8" drive w/ magnet P/N 12-01428.....
T-558 1/2" drive w/o magnet P/N 12-00712.....



T-559 SPARK PLUG VIBRATOR CLEANER (115 VAC) - Cleans out stubborn lead deposits.
P/N 12-00713.....



T-560 SPARK PLUG CLEANER - Complete with powder and bag. Features a 1-way valve.
P/N 12-00714.....



T-570 SPARK PLUG TOOL KIT - Includes a spark plug tray (T-240), erosion gage (T-245), cleaning tools (T-550-10), feeler gage (T-554), 3/8" drive deep socket with magnet (T-557) vibrator cleaner (T-559), and spark cleaner (T-560).
P/N 12-00715.....

BB PRODUCTS FC-2000 OIL FILTER CAN CUTTER



Features: • Cuts all Champion and Kelly Aerospace 3.7" Dia. oil filters • Rugged 6061-T6 aluminum construction • Roller bearings provide smooth rolling action • Hardened hardware throughout • No parts or adapters to change • Made in USA - Hundreds sold!
P/N 12-00923-1.....
Replacement Cutter Wheel P/N 12-01689.....

BB PRODUCTS FMC-2000 OIL FILTER MEDIA CUTTER



This patented tool is designed to hold Champion Aerospace brand Aviation oil filter spools, and to allow cutting the paper filter media at each end of the spool without holding the filter spool by hand. Using this tool reduces the risk of cutting one's hands while cutting the filter media as well as reducing the time necessary to accomplish this task. The filter media is rotated in a special holder that is supported by roller bearings. A knife, with a retractable safety cover is brought into position to make a clean cut of the filter media at each end. The filter media can then be removed for inspection. Patented.
P/N 12-00925-1.....

BB PRODUCTS FH 2000 OIL FILTER HOLDER



The FH-2000 oil filter holder is designed to hold all Champion, Kelly Aerospace and Tempest Oil Filters for cutting.
P/N 12-00924-1.....

TOMS OIL FILTER CUTTING TOOL



Tom's oil filter cutting tool will allow you to inspect your filters in an efficient manner. Most filter cutters work like a pipe or tubing cutter in that you have to go around and around the filter, adjusting cutter depth with each pass. Although you could do that with this tool, the real beauty of this new product is that the cut can be easily made in one pass. The task of inspecting filters can be a bit messy but it is also quick and easy to do and should be part of

your regular maintenance program.

The tool, as supplied, is wet up for Lycoming oil filters that have a threaded insert sticking out of the out of the end of the filter. This should cover almost all Lycoming engines, however, some of them and almost all Continental engines do not have this insert. A "center bolt" supplied with the tool can be used in these cases. To use the tool on smaller filters, such as Rotax filters, remove the cutter handle and reposition the pivot bolt to the inner hold on the base handle. The "center bolt" may have to be used on these filters as well. This tool will also work on a number of automotive filters.
P/N 12-01697.....

MODEL 7000 OIL FILTER CUTTER



• Accepts both male & female styles of aircraft oil filters, and many automotive sizes. • Ball bearing rollers make it easy to turn the filter • Effective design helps insure a straight cut (the filter does not try to spiral off the cutter) • Heavy duty construction (designed for daily commercial use) • Aircraft quality aluminum construction • Replaceable hardened steel cutter wheel • Contoured knob is easy to turn, even with oily hands • Accepts oil filters 3 1/8" to 4" in diameter, which includes most aircraft oil filters such as Champion: CH48103, CH48104, CH48108, CH48109, CH48110 AND CH48111 • The cutter may be completely disassembled, and all parts are replaceable. P/N 13-03145.....
Replacement cutter Wheel P/N 13-05737.....

MODEL 7100 OIL FILTER KNOB



• Slips onto the hex of an aircraft oil filter • Large diameter knob for a strong grip even with oily hands. • Allows many filters to be installed and removed without using a wrench. • Works in tight spaces, you do not have to swing a wrench • Knob will accept a 3/8" drive ratchet handle to help remove very tight filters (ratchet handle not included) • Stainless steel core durability (your ratchet goes into stainless steel, not plastic). • Use a torque wrench to accurately tighten a new filter to the proper torque. • Handle can be used as a base to support the filter, holding it upright so the oil does not spill out. • Color: bright yellow. P/N 13-03146.....

MODEL 7300 OIL DRAINER



Make your oil changes less messy. Drain your oil lines and filter before removing the filter. Works with most Lycoming engines and remote filter installations, and some Continentals. When you drain the oil from the engine, you are only emptying the oil sump. Generally quite a bit of oil remains in the filter and oil lines (if you have a remote mounted filter). A remote mounted filter installation can easily hold a quart of oil in the filter and lines after the engine is drained. This oil will come pouring out when the filter is removed, making a mess in the engine compartment. Cleaning up this mess often takes longer than the actual oil change. The Oil Drainer clamps over the center of the oil filter. A hardened steel rod pierces the filter can and allows the oil to be neatly drained into your catch bucket. After the oil is drained, you can remove the filter with much less mess.
P/N 13-03147.....

OIL FILTER WRENCH



The 1" hexes of the wrench easily fit Champion oil filters. The hexes are rotated 15 degrees from each other so by turning the wrench over or flipping it end-for-end you can easily find an orientation that allows you to get on the filter, even the tightest engine compartment. It's 6 inch overall length allows you to turn it tight locations, and the shorter length helps prevent over-tightening the filter during installation.
P/N 12-01638.....

TO

SPECIALTY TOOLS

ULLMAN MAGNETIC PICK-UP TOOLS



These Ullman pick-up tools with Powercap offer a unique combination of features which make them ideal for work around aircraft. The stainless steel telescoping handle is strong, long, and lightweight, and the comfortable, textured cushion grip keeps handle secure even in wet or oily hands. The head features a compact industrial strength magnet for retrieving heavy objects in tight places. The powercap shields magnet side so that the head can be easily guided past ferrous metal objects. Available in 3 convenient sizes.

- HT-1** lifts 1-1/2 lbs, over 2 lbs with POWERCAP™ telescopes from 6-5/8" to 33-1/4" P/N 12-21385.....
- HT-2** lifts 3-1/2 lbs, over 5 lbs with POWERCAP™ telescopes from 6-5/8" to 33-1/4" P/N 12-21386.....
- HT-3** lifts 5 lbs, 10 lbs with POWERCAP™ telescopes from 6-3/4" to 30-1/4" P/N 12-21387.....



CHP4-L HOOK & PICK SET - has picks that are 9.75" long with textured cushion grips. These longer picks are ideal for working in hard to reach awkward areas. P/N 12-00716.....



MSR-3 MEGAMAG SOCKET RACK - has a strong magnet on the front of the racks that keeps 1/4", 3/8" & 1/2" drive sockets together, organized and ready to use. The magnetic force on the back holds the rack loaded with sockets to most flat metal surfaces. P/N 12-00717.....



GMC-2 DUAL PURPOSE TOOL - contains a MegaMag Pickup Tool that lifts 16 lbs. and a 2.25" Inspection Mirror with a metal base that mounts in seconds and brings hidden areas into full view. P/N 12-00718.....

STEELMAX MAG-IT MAGNETIC PICK-UP TOOL

Safely remove metal chips and debris from machinery and work areas using SteelMax Mag-It® magnetic pick-up tool. The Mag-it® slide action lever quickly demagnetizes the tool, which releases chips for disposal. 10 inch Pick-Up.....P/N 12-01714.....

15 inch Pick-up.....P/N 12-01715.....

EXHAUST PORT RESURFACING TOOL

The exhaust port resurfacing tool is designed to recondition port surfaces where no more than .010" of material need to be removed. It is easily bracketed and aligned to the port in reference to the rocker cover surface. Execution of the cutting operation only requires hand power. No air or electrical power is required. Mounting bracket adapters are available for the following engines: A&C series continentals, Lycoming Parallel Valve, Lycoming Angle Valve, others on request.....P/N 12-17605.....

A & C Series Continental Bracket.....P/N 12-17609.....

Lycoming Parallel Valve Bracket.....P/N 12-17610.....

Lycoming Angle Valve Bracket.....P/N 12-17611.....

Cutter Head Inserts.....P/N 12-17607.....

EAR ISLAND REMOVAL TOOL - When substantial quantities of material have to be removed from the exhaust port, it may be necessary to also remove the island around the exhaust stud area. The ear island removal tool and pilot can be used to accomplish this without the use of power tools.....P/N 12-17608.....

DELUXE HEAT GUN

This handy tool gives you a fast, drum-tight, mirror smooth finish. It's ideal for heat-shrinkable covering films. Get a professional finish with less time and effort. 1-yr warranty. Features: •Includes removable wide nozzle •1000W heating power •Heavy-duty fan motor •Textured, composite hand-grip •3-position, hot/cool/off switch •Adjustable air intake baffle •Wt: 15 oz •5.5' AC power cord w/2-prong plug. P/N 12-00527.....

THE CORE RECESSOR

The core recessor is a new product with the purpose of serving as an efficient tool that makes the process of removing core cells in Nordam Panels and composite fiberglass more efficiently. Thus, it reduces time for edge fillers, which are necessary procedures to customize aircraft cabinets, floorboard, vanity's headliners, valance panels, etc. Is light weight, easy and safe to use. Core panels from 1/8 to 3/4 inch with no adjusting. Requires no electricity. Core Recessor.....P/N 12-02270.....

Core Recessor Mini.....P/N 12-02271.....

HANDY MAG RETRIEVAL TOOL



The Handy Mag is the size of a pen and can be carried in a shirt pocket. It telescopes out to an extended length of 32" and the magnet on the tip can pick up objects over 2 lbs. Excellent for retrieving dropped tools or parts in engine compartments or other unreachable areas. Tough stainless steel body. P/N 12-14550...../ea

AMAZING ROD SAW



Tiny particles of tungsten carbide, one of the toughest and hardest substances in the world, have been bonded to a steel rod to produce the Rod Saw. Fits standard 12" hacksaw frame. Use when regular hacksaw will not work. Lets you cut steel, rock. Not recommended for soft materials. P/N 12-01180.....

EXHAUST DESICCATOR PLUGS FOR EXHAUST STACKS



Quality made polyurethane rubber plug won't wear out and provides a positive seal in the exhaust pipe. Desiccator housing contains interchangeable desiccator canisters. Desiccant never needs to be removed from canister for drying. Removal flag and cap attach to external end of plug when in use. During storage, flag cap fits on desiccator chamber. Limits internal engine damage caused by corrosion. Fits 2" dia. exhaust pipes. Other sizes available as a special order. Minimum special order 5 pieces. P/N 12-30212..... ea.

HIGH CAPACITY EXHAUST DESICCATOR



2.5 times the desiccant capacity of previous design. One piece construction allows the desiccant to be contained in the core of the plug. Made of durable high quality urethane rubber that will last almost indefinitely. P/N 12-01057...../ea

GOLDENROD DEHUMIDIFIER



This compact, low-voltage dehumidifier is an ideal way to eliminate dampness and mildew in aircraft which can cause mildew growth in carpet and upholstery and wreak havoc with electrical systems. In stall under the instrument panel or on the deck between seats. If installed in the engine compartment, Goldenrod will eliminate moisture which leads to rust, keep ignition wiring dry, and facilitate cold weather starts. In the hangar, Goldenrod can protect parts, tools, supplies, and components. Operates on standard 110V current 24 hours per day but uses four times less power than a standard light bulb. Safe and effective. Available in four lengths.

| Part No. | Length | Watts | Approx. Coverage Up To | Price Ea. |
|----------|--------|-------|------------------------|-----------|
| 12-30225 | 12" | 8 | 100 cubic feet | |
| 12-30230 | 18" | 12 | 200 cubic feet | |
| 12-30235 | 24" | 15 | 300 cubic feet | |
| 12-30240 | 36" | 25 | 500 cubic feet | |

EVA-DRY DEHUMIDIFIER



This is a product that is the answer to a very common problem in Aircraft, HUMIDITY!!! The Eva-dry is a 100% renewable, wireless, mini dehumidifier that requires no power to operate. It works with a Silica gel that absorbs moisture from where ever it is placed. There is an indicator window on the front of the unit that will change from blue to pink as the units absorbs moisture. Once the crystals have turned pink it is time to renew. To renew, simply fold down the hidden plug on the back of the unit and plug it in to any a/c outlet for 8-10 hours. A heating element will be activated which will evaporate the moisture. The Eva-dry has a 10 year life span and has a 5 year mfr. Warranty. Size: 6.25" X 4.75" X 1.25". P/N 12-01621.....

SCROOGE CLAMP



By attaching this mechanism to any brace, piece of wood or steel, it can be made adjustable simply by turning the handle. It works like a C-Clamp that will push or pull. It can be used in place of a bar or pipe clamp, and can be made any length by using a 2x2 or 2x4 piece of lumber. Using it, any object or aircraft part can be moved into its exact required position, within a 1/64 of an inch, simply by turning the handle. It is a large turnbuckle with attachment plates at either end. It can be used to plumb walls, square up framing, pull together studs and joist (or push them apart) and straighten warped structural members for fixing in place. It can exert up to 2000 lbs of force with 80 lbs of force on the turnbuckle handle. In most common use, one plate is screwed to a 2x4 and the other to a stud wall or post. The free end of the 2x4 is then nailed or screwed to a joist deck, floor, etc. Maximum travel is 7-3/4". P/N 12-00636.....

TO

TOOLS

WING STAND



This wing stand is ideal for aircraft homebuilders or restorers needing to safely store and protect aircraft wings during the project. It accommodates virtually all shapes and sizes of wings and is available at a very economical price. We ship this wing stand direct to you from the factory (freight collect). Dims: 72"l x 44"h x 36"w. Assembly req. Each stand holds 2 wings.
P/N 12-21390/lea

AEROROLLER-1000



AeroRoller makes movement of your aircraft or wheeled equipment easy. Aircraft can be loaded on AeroRoller without jack and minimum effort is required to move aircraft when on rollers. AeroRoller is constructed of Industrial 1/4" steel plate. Heavy duty Duraform 360° swivel castor wheels means no flat spots. Brake castor lock parking location. Each unit can carry 1000 lbs.

Manufacturer's warranty covers defective parts & labor.
2-Roller Set.....P/N 13-00071
3-Roller Set.....P/N 13-00072

TENNSMITH BRAKES & SHEARS



HAND BRAKE & STAND - Versatile, economical hand brake designed for straight forming of mild steel in thicknesses of 22 gauge & lighter. Made in the U.S.A by Tennsmith. Bends material up to 48" wide. Wts: brake: 280 lbs. Optional stand: 95 lbs. Ideal for bending materials used in light aircraft construction. Shipped direct to you from factory in Tennessee.

Model S48-22 hand brake.....P/N 12-20700
Optional Stand.....P/N 12-20705

UNIVERSAL HAND BRAKE & STAND - Tennsmith's heavy duty universal hand brake is a great tool for a wide range of sheet metal binding and forming operations in 12 gauge and lighter mild steel. The brake is ideal for both box and pan and straight bending in hold and cold rolled plate, stainless steel, aluminum, and heavy plastic. Welded steel plate construction for strength and rigidity. Bends material up to 48" wide Wts: brake:

1330 lbs. Optional stand: 95 lbs. Shipped truck collect direct to you from factory in Tennessee.

Model HBU48-12 Hand Brake.....P/N 12-20710
Optional Stand.....P/N 12-20705

FOOT SQUARING SHEAR - Tennsmith squaring shears offer precision shearing and rugged construction. These shears feature traction, ground alloy tool steel blades to prevent material movement during shearing. Will shear material up to 16 gauge mild steel and up to 20 gauge stainless steel. Both blades are adjustable and back gauge gives highly accurate readings. Wts: Model 36: 700 lbs. Model 53: 950 lbs. Shipped truck collect to you direct from factory in Tennessee.

Model 36 Shear (Max. Cutting Width 37") P/N 12-20715
Model 52 (Max. Cutting Width 52").....P/N 12-20720

TENNSMITH - These products are shipped truck, priced F.O.B. McMinnville, TN. Allow 4-6 weeks for delivery

LAP JOINT JOGGLE TOOL

FOR UP TO .032 ALUMINUM SHEET - To use the Lap Joint Joggle Tool, install washers to adjust joggle set-back from edge of sheet. Start at one end of sheet and pull smoothly along edge to be joggled. Keep back plate of tool firmly and squarely against edge of sheet for smooth and parallel joggle. To break a sheet edge, insert sheet just one bearing depth (.4") then bend down as desired as tool is pulled along edge. Adjustments - For set-back, add or subtract washers. For different material thickness, loosen bolts, spread or close. For use on aluminum sheet up to .032 thickness.
P/N 12-30275



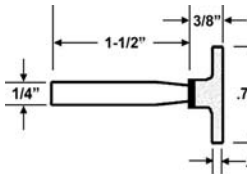
NON-CONTAMINATING SCRAPER

Our Non-Contamination Scraper is suitable for all airframe scraping operations. It will not contaminate delicate aluminum parts with steel particles which can induce corrosion. It is easily resharpened with a mill file and the .060" thick heat treated aluminum blade is easily replaceable. Features positive wood grip handle. P/N 12-30205



SEAT TRACK CLEANER

Maintaining adjustable cockpit seats, or passenger seating secured in notched tracks, requires removing the dirt and grit that have become embedded in the tracks. Rex-Cut Products has developed a thin-profile mounted wheel specially designed to accomplish this job efficiently and safely. The seat track cleaners are manufactured using layers of reinforced nonwoven cotton fiber and abrasive grain which are bonded into discs. When mounted on a die grinder they are able to fit inside the seat tracks. Designed for cleaning all the interior surfaces of the track without having to change discs, one disc will remove caked on sludge, dirt and grit while removing minor burrs and rough edges. The seat track cleaners are non-loading on aluminum and leave superior surface finishes. Available in 54 and 80 grits in aluminum oxide grain mounted on a 1/4 x 1/2" shank.
54 Grit Seat Track Cleaner.....PN 12-00955
80 Grit Seat Track Cleaner.....PN 12-00952



THE TOOL GRIP - TOOL AND CRAFT HOLDER

The Craft Grip is designed to hold tools or other items in the same manner as the Pen Grip. It differs only in the method of attachment. The attachment device is a u-shaped clip that fits over the edge of many surfaces and holds the organizer in place. These cups snap firmly onto the gripping unit. Its most popular uses are car and truck visors, tool boxes, painting easels and many other locations without harming or being permanently attached to the surface Available in Black or White.

Get a Grip Tool Grip (Black).....PN 12-00953
Get a Grip Tool Grip (White).....PN 12-00954



THE PEN GRIP - PEN AND TOOL HOLDER

The Pen Grip attaches to almost any surface with double stick tape. Just peel off the backing on the attached double stick adhesive, press firmly onto the surface to which you want it attached and insert your tools. The unique gripping fingers hold all sorts of pens, pencils, & tools in many different positions, even upside down. Like the Tool Grip, The Pen Grip is available in White and Black.

Get a Grip Pen Grip (Black).....PN 12-00961
Get a Grip Pen Grip (White).....PN 12-00962



WIRE SPOON

Features: • Wire threader designed for threading wires into an already tied harness • 300 Series stainless steel construction • Made in America for superior quality
P/N 12-01801



TO

NOTCHERS

ACCU-JIGGER TUBING NOTCHERS



Constructed of 6061T6 hard anodized aluminum extrusions, steel, and cast iron with two 2750 lb. rated roller needle bearings, the Accu-Jigger rigidly holds the holesaw and tube to produce accurate, chatterless cuts. Accu-Jigger, with Single Point Technology, is able to notch tubes that "Fit Right The First Time" as fast as those produced from custom tooling. It employs a flip up Tube End Stop, (2) 1° step, pin settable Angle Indexes and standard bimetal holesaws to accurately notch the ends of tubes used in aircraft fuselages and engine mounts. Notches tubes up to 1" diameter with up to 2" holesaw at angles from 30 to 90°. Spin Angle settable 0 to 359°. Meant to be driven by 1/2 inch chuck hand drill or mounted to a drill press.

1" diameter capacity.....P/N 12-00377
2" diameter capacity.....P/N 12-00529

MAGNETIC BIT CADDY



A non-spill bit holder at your fingertips. 36 individual 1/4" and 5/16" screwdriver bits may be stored in this magnetic-based organizer. Remains solid at any angle placement while holding bits in their respective slots.P/N 12-01083

THE SPINNING RATCHET



This tool is a combination tool providing a ratchet wrench for power and a spinning action for speed. All types of accessories can be used with this wrench, such as extensions on either end, or flexible drives. The drive handle can be removed to make a very compact tool for restricted areas. The ratchet pawl is made from annealed steel to allow it to fail before the ratchet gear as it is a low cost item. The spinning gears are protected by a shear pin that will fail before the bevel gears, again a low cost item replacement, rather replace one or both of the bevel gears if they become over loaded. The pawl is pointed on one to distinguish the on or off motion. 3/8" driveP/N 12-00742

PNEUMATIC HIGH SPEED DRILL



This heavy duty pneumatic drill will give years of consistent service. Due to speed and design this drill is excellent for deburring or grinding when used with mounted wheels or points. When used with a mounted wire brush it functions as an excellent scaler. As a drill it is adaptable to wood, plastic, rubber, aluminum, brass and sheet metal where contact is brief. Drilling capacity: Steel - 1/8", plastic -3/16", wood - 1/4". Specifications: 13,000-17,000 RPM @ 80-150 PSI. 4-vane motor. Air supply: 4 CFM @ 80 PSI. Wt. 2 lbs.

5 oz. 1/4" chuck. Model 10.....P/N 12-01659

THE 3RD HAND WELDING CLAMP



A simple yet rugged tool, The 3rd Hand was designed to hold round or square tubing in place during the welding process. Originally used for aircraft engine mount and airframe fabrication work, it has many other applications. This steel fixture is infinitely adjustable due to its full swiveling clamp. Each model comes with 3 different length arms (3.5", 5.25" & 7.5") Hose clamps are not provided.

Model 01 (for tube size 3/8" - 2.5").....P/N 12-00736
Model 02 (for tube size 3/4" - 4").....P/N 12-00737
Model 03 (for flat sheets or plates)P/N 12-00747

MAGNETIZER / DEMAGNETIZER



This versatile tool saves you time and trouble by instantly magnetizing or demagnetizing you tools & parts on the job. Reliable, powerful permanent magnets for a super long life, and its compact size, shatterproof plastic shell, this tool will fit easily in your tool box. This tool allows easy, precise handling of small steel parts in confined spaces, collects metal items from inaccessible places, leaves 1 hand free for positioning the work piece, demagnetizes instruments & electronics components. Size: 2.1"x2"x1.1". Wt. .22 lb.P/N 12-16835

OL' JOINT JIGGER



OL' JOINT JIGGER MODEL RTN-100 TUBING NOTCHER - Ol' Joint JiggerTM quickly notches tubing of up to 2" O.D. in less than 30 seconds. Great for assembling and welding tubing in your garage or workshop. Adjusts in single degree increments to make up to 60° angle notches. Automatic round tubing centering and alignment. CNC machined steel construction. Bi-metal hole saws not included. Use with your 1/2" hand drill. U.S.A. Ship Wt. 9 lbs. P/N 12-01107



RTN-BASE (UNIVERSAL DRILL PRESS MOUNT) - For use with RTN100 only. Allows for set up and dedication of a small drill press for tube notching. Adjustable for out-of-square tables, the RTN-Base also makes it easy to lay the notcher over horizontally, still bolted to the table, to handle long or cumbersome tubing that can't be notched in a vertical position. Minimum requirements: 1/3HP drill press with 3-1/2" to 4" of travel and 14" from the table or base to the chuck. (Bolts for attachment included) U.S.A. Ship Wt. 3 lbs. P/N 12-00691



OL' JOINT JIGGER MODEL RTN-1000 DELUXE ALUMINUM TUBING NOTCHER - Ol' Joint JiggerTM combines precision performance, versatility and comfort for quickly notching tubing of up to 2" O.D. in less than 30 seconds. Enhanced vibration-reducing design and dual-axis base allow for either work bench or drill press mounting to provide the professional or hobbyist with the ultimate in tubing notchers. Laser-engraved protractor allows adjustments in single degree increments to make up to 60° angle notches. Automatic tube centering and alignment. Anodized aircraft-grade aluminum construction. Bi-metal hole saws not included. Use with your 1/2" hand drill or drill press. U.S.A. Ship Wt. 9 lbs. P/N 12-01108

RTN NOTCHER REPLACEMENT PARTS & HOLESAWS

| Description | Part No. | Price |
|-----------------------------------|----------|-------|
| 5/8"-18 Thread Adapter | 12-00020 | . |
| Main Arbor/Shaft (1/2"-20 Thread) | 12-00021 | . |
| Bushings for Arbor Support (pair) | 12-00022 | . |
| 5/8" Holesaw | 12-00023 | . |
| 3/4" Holesaw | 12-00024 | . |
| 7/8" Holesaw | 12-00025 | . |
| 1" Holesaw | 12-00026 | . |
| 1-1/8" Holesaw | 12-00027 | . |
| 1-3/8" Holesaw | 12-00029 | . |
| 1-1/2" Holesaw | 12-00030 | . |
| 1-3/4" Holesaw | 12-00032 | . |
| 1-7/8" Holesaw | 12-00033 | . |
| 2" Holesaw | 12-00034 | . |

HOLESAW ASSORTMENTS

| Description | Part No. | Price |
|--|----------|-------|
| 1", 1-1/8", 1-1/4", 1-3/8", & 1-1/2" | 12-00035 | . |
| 1-1/8", 1-1/4", 1-3/8", 1-1/2" & 1-5/8" | 12-00036 | . |
| 1-1/4", 1-3/8", 1-1/2", 1-5/8", & 1-3/4" | 12-00037 | . |
| 1-3/8", 1-1/2", 1-5/8", 1-3/4" & 1-7/8" | 12-00038 | . |

PIPEMASTER WELDER'S TOOL FOR CONTOUR FITS



Pipemaster gives aircraft builders the ability to cut a piece of tubing on both ends and have it fit its intended location on the first try. Tedious hours of grinding and misfit joints can be eliminated producing exact welds and stronger airframes. Features spring temper stainless steel pins, aluminum inner shell, and rugged ABS housing. Simply slip over the pipe, push down, transfer and cut, and the tubing is ready to weld. Pipemaster transfers the exact outline of the pipe joint in just seconds. Use for penetration cuts as well.

| Part No. | Tubing O.D. | Price | Part No. | Tubing O.D. | Price |
|----------|-------------|---------|----------|-------------|-------|
| 12-00102 | 3/4" | . | 12-00109 | 1-1/2" | . |
| 12-00103 | 7/8" | . | 12-00111 | 1-5/8" | . |
| 12-00104 | 1" | . | 12-00112 | 1-3/4" | . |
| 12-00105 | 1-1/8" | . | 12-00113 | 1-7/8" | . |
| 12-00106 | 1-1/4" | . | 12-00114 | 2" | . |
| 12-00107 | 1-5/16" | \$49.80 | 12-00116 | 2-3/8" | . |
| 12-00108 | 1-3/8" | . | | | |

TO

NOTCHERS - SURFACE TREATMENT KITS

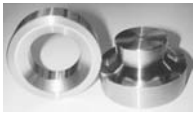
JMR NOTCHERS



Made in the U.S.A! • Highest quality, most versatile notcher on the market • Capacity greater than notchers costing 10-20x more! • Notches faster and better than any end mill/belt notcher • Manufactured from bar stock not plate, to increase strength 1.125" induction hardened shaft supported by Timken™ bearings • Custom designed shaft seals prevent bearing/shaft damage •

Replacable hole saw mounting threads • Timken™ thrust bearing increases clamping force (at pivot) while reducing wrench pressure, making angle changes easy • Capable of notching in a 210° arc • 2.5" tube, 2" pipe capacity • Double v-clamp vise allows square to be held flat or corner to corner • Will hold thin wall tube without distortion • May be clamped on tube/pipe to bore holes • Great hole saw life of any notcher (Average 200+ cuts)* • Multiple mounting positions • Designed for prototype and production work • Engraved degrees and stainless steel pointer ensures accuracy • Aluminum bronze acme threaded bushing on clamp. P/N 12-01389

JMR DIMPLE DIES



Made in the U.S.A! • Made from heat treated 4142 steel • Will dimple .125" 4130 • All corners radiused • Set of 7 includes fi, fl, 1, 1/4, 1 fi, 1 fl, 2". P/N 12-01390

JMR MANUAL BENDER



Capacity greater than benders costing 10-20x as much!! • Dies available in 120 and 240 • Will bend .250 wall 4130 Tube • Dies are all billet • Follower blocks case hardened .050 min. • Lifetime guarantee against breakage on dies • All pins made from heat treated 4140 • Aluminum bronze bushings at pivot points • Light weight and portable - 110 volt • Built for industrial use, yet affordable enough for everyone! P/N 12-01388.....

MBX KITS AND ACCESSORIES

MONTI MBX Surface Treatment Systems

PATENTED TECHNOLOGY - MBX Systems are different from conventional surface treatment systems in that MBX Systems are based on several physical principles. Flexible brush-belts are inserted loosely into a cage-like adaptor system and secured with safety arms. The centrifugal force created by rotation causes the brush-belt to tighten and work as if suspended on a cushion of air. Advantages: Vibration-free operation: The vibration of the wire bristles that occurs when the bristles strike the target surface is absorbed by the air-cushion. The bristles re-strike the target surface at rest (without vibration). This achieves the maximum kinetic energy.

MBX BRUSH-BELT TECHNOLOGY - MBX Belts consist of individual, U-shaped crimped wire bundles anchored in a polyamide fabric. Made of spring steel, the wires have hardened tips that strike the target surface individually during rotation.

ADVANTAGES - High safety level: The U-shaped anchor points of the individual crimped bundles prevent wire bristles from being thrown clear. No heat development: Avoid toxic fumes and no smearing during the removal of sticky materials. No grinding: No removal of healthy material, no deformations. Flexibility: High degree of adaptability when working on contoured areas or areas with sharp edges. Optimal performance: Because of their design, each wire tip strikes the target surface twice per rotation. Long service life: Specially hardened wire tips with a hardness up to 68 HRC (Rockwell hardness) provide for a level of hardness never before achieved with conventional brush technology.

MBX PNEUMATIC DRIVE UNIT - Easy handling, lightweight - 1.1 kilograms, high torque, safe to use! Specially developed for the MBX brush-belt and MBX Vinyl Zapper systems. The high output rpm of the compressed-air turbine (21,000 rpm) is reduced to 3,500 rpm by means of a planetary gear and toothed belt; torque increases. This gives our MBX pneumatic drive units an optimised power profile. MBX brush-belts and MBX eraser wheels work as a direct extension to the drive shaft, i.e., there is no lateral centre of gravity and MBX drive units operate in-line. Work in hard-to-reach areas or in the removal of tough, thick, sticky materials (e.g. compounding materials, underbody corrosion) with optimal ventilation.

MBX PNEUMATIC STARTER SET



For the removal of seam sealant, corrosion, paint, vinyl decals, glue on aluminum and alloy. **SET 1** -- MP-3500 - MBX Pneumatic Power Tool S (3500 rpm) with adapter system for 23mm belts/31mm rubber eraser. • AA-0011 - Adapter for 11mm wire belts • BS M11X - V2A Wire Belt, Med., 11mm angled tips • BS-F11 - V2A Brush Belt, Fine, 11mm • RE-0023 - Rubber Eraser, 31mm P/N 12-01394

MBX ELECTRIC STARTER SET



For the removal of seam sealant, corrosion, paint, vinyl decals, glue on aluminum and alloy.

ME-3200 - MBX ELECTRIC POWER - Tool A (3200 rpm) with adapter system for 23mm belts/31mm rubber eraser • AA-0011 - Adapter for 11mm wire belts • BS-M11X - V2A Wire Belt, Med., 11mm angled tips • BS-F11 - V2A Brush Belt, Fine, 11mm • RE-0023 - Rubber Eraser, 31mm P/N 12-01396

MBX BRUSH BELTS



Medium (11 or 23 mm) For the removal of seam sealant & corrosion on aluminum bodies



Fine (11 or 23 mm) For the removal of paint on aluminum bodies.

MBX Belts are made of a high-performance polyamide fabric - tension resistant up to 440 kilograms. Individual bristles made of spring steel or stainless steel are anchored U-shaped in the flexible polyamide fabric. The materials used for the production of MBX Belts offer top safety and durability due to the high flexibility of the MBX Belts. No clogging - no heat built-up - no grinding. The high masses due to centrifugal force during rotation are absorbed safely by MBX Adapter Systems. MBX Medium have angled tips to create a sandblast effect. 11mm is for especially hard-to-reach-areas such as a 90° angles.

BS-M11X Med. Blue 11mm Brush P/N 12-01402

BS-M23X Med. Blue 23mm Brush P/N 12-01403

BS-F11 Fine Blue 11mm Brush P/N 12-01404

BS-F23 Fine Blue 23mm Brush P/N 12-01405

MBX VINYL ZAPPER



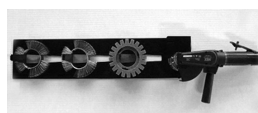
"The rotating toothed eraser wheel", patented For the removal of self-adhesive foils and materials, wide-area decoration, adhesive residue on decorative strips and lettering on OEM-painted surfaces made of metal, aluminium, glass, fibreglass (gel coats) - and most amazing: NO PAINT DAMAGE. The centrifugal force created by rotation makes the MBX Vinyl Zapper work as if suspended on a cushion of air. Advantages: Faster working speeds of up to 3,500 rpm Conventional rubber eraser wheels operate only at circa 1,500 rpm. No paint damage, no smearing despite speeds of 3,500 rpm Toothed wheel design. Easy handling. Vibration-free, smooth running (compare a solid rubber tire with an air-filled tire). Increased performance. The working surface of the MBX Vinyl Zapper is strongly enlarged by the application of pressure to the work surface. This improves performance (compare to a car tire containing only a small amount of air). Long service life Wide construction. Vinyl Zapper 31mm Toothed Wheel Construction Removal of elements such as vinyl decals & DOT tape from metal surfaces, fiberglass, plate glass, wood, aluminum, OEM paint finish. P/N 12-01406

MBX VINYL ZAPPER KITS



MBX Vinyl Zapper Kit is for removing vinyl decals and graphics on metal glass and fiber glass. It is available with either a pneumatic tool or an electric tool.

| Description | Part No. | Price |
|---|----------|-------|
| MBX Electric Vinyl Zapper Kit USSE-01-05 MBX Electric Tool, 1-23mm Adaptor, 3 Vinyl Erasers | 12-02037 | . |
| MBX Pneumatic Vinyl Zapper Kit USSP-01-05 MBX Pneumatic Tool, 1-23mm Adaptor, 3 Vinyl Erasers | 12-02038 | . |



STORAGE STATION

For storage of up to 15 wire belts or 9 rubber erasers and one MBX Power Tool (machine, belts, erasers not included). P/N 12-01399

TO

CLECOS - HOLE SAWS - CRIMPING TOOLS

CLECO SHEET HOLDERS



K-SERIES SPRING CLECOS - Sheet holders provide the quickest method for holding sheets together for drilling or riveting. Drill the size hole needed for the rivet and insert the sheet holder. The holders listed comprise the most common sizes. Material thickness range 0" - 1/4". Use with sheet holder pliers. **10% discount on 50 pcs., 15% discount on 100 pcs.**

| Description | Size | Part No. | Price |
|--------------|-------|----------|-------|
| M-3/32 CLECO | 3/32" | 12-01140 | . |
| M-1/8 CLECO | 1/8" | 12-01138 | . |
| M-5/32 CLECO | 5/32" | 12-01141 | . |
| M-3/16 CLECO | 3/16" | 12-01139 | . |

KK-SERIES SHORT BODY SPRING CLECOS - A shorter overall body to use in areas of limited space. 0-1/4" grip range. Made in USA

| Description | Size | Part No. | Price |
|---------------|-------|----------|-------|
| CC-3/32 CLECO | 3/32" | 12-02073 | . |
| CC-1/8 CLECO | 1/8" | 12-02074 | . |
| CC-5/32 CLECO | 5/32" | 12-02075 | . |
| CC-3/16 CLECO | 3/16" | 12-02076 | . |

KHD-SERIES LONG REACH SPRING CLECOS - Designed for clamping thicker material. 0-1/2" grip range. Made in USA

| Description | Size | Part No. | Price |
|----------------|-------|----------|-------|
| CHD-3/32 CLECO | 3/32" | 12-02077 | . |
| CHD-1/8 CLECO | 1/8" | 12-02078 | . |
| CHD-5/32 CLECO | 5/32" | 12-02079 | . |
| CHD-3/16 CLECO | 3/16" | 12-02080 | . |

CLECO KEEPER



Fabricated of durable polypropylene, the Cleco Keeper is prepunched to hold up to fifty sheet metal fasteners.

Allows the builder to extract and install Clecos from the storage bin to the work with one hand. Compact, the Cleco Keeper measures 8"L x 3"W. Helps eliminate misplaced fasteners and makes inventory of available fasteners quick and accurate. Available in three models to hold 3/32", 1/8", or 5/32" clecos. For 3/32" clecos.....P/N 12-10116
For 1/8" clecos.....P/N 12-10117
For 5/32" clecos.....P/N 12-10118
For 3/16" clecos.....P/N 12-00604

NO-MAR"

REUSABLE CLECO BOOTS

Eliminates surface marring both on painted and unpainted surfaces. Easily slips on plier operated style clecos, one size fits all. Yellow polyurethane color. 25 pcs./pkg. P/N 12-00626



CLECO SHEET HOLDER PLIERS

These pliers are designed to grip and actuate all standard sizes of sheet holders and tension clamps. New manufacture. P/N 12-10105



CLECO REVERSE PLIERS

Used in limited access areas. requires less travel per activation. Model TP74B. P/N 12-00370



PNEUMATIC CLECO INSTALLATION TOOL

This new pneumatic cleco installation tool features a lever throttle, 360° swivel mount, quiet operation, a straight handle, and a 6ft. polyurethane lead hose. The ergonomic design and its ease of operation allow for quick insertion of all button or plunger type fasteners, including side grips. Wt. 12 oz. Length: 5 1/8", Air Inlet: 1/4". P/N 12-01120

COUNTERBORE



This 5/8" diameter boring tool, has 1/4" diameter pilot. A 10" thread extension is used for boring holes in hard-to-reach places. Primary use is in the installation of the landing gear on the LongEZ and Cozy aircraft. 3/4" bore does not have 1/4" pilot and must use the pilot received with the 5/8" boring tool. 5/8" dia. w/pilot.....P/N 12-00219
3/4" dia. w/o pilot.....P/N 12-00220

HEAVY-DUTY SHOE SAW ARBORS



ARBOR - Use for hole saw sizes 5/8" through 1-3/16". 3 milled flats prevent slipping in chuck. Pilot hole size 1/4". Has 1/4" shank. P/N 12-01993



QUICK CHANGE ARBOR - Use for hole saw sizes 1-1/4" and larger. The Quick Change 7/16" shank prevents slipping in chuck. Pin drive construction permits fast interchanging of hole saws without removing arbor from chuck. Pilot drill size 1/4". P/N 49-56-7055

STURDY STEP SAFETY PLATFORM



This 22" square platform puts you at the right height so you can work comfortable and safely. Heavy duty construction for years of dependable use. With the Side-Kick, your Sturdy-Step is even more useful. It attaches to the Step in seconds and keeps all of your hand tools and small parts at your fingertips.

Features: Holds up to 350 lbs. • Rubber non-slip feet • Meets all of OSHA safety requirements •

The top & bottom steps feature perforated tread areas to help prevent slips • Yellow traction markers are also placed on the edge of each step for added safety. P/N 12-00206

ACCESSORIES FOR THE STURDY-STEP

SIDE KICK TRAY - Tray holds many small tools and allows you to work without making several trips to the work bench or tool box. Attaches to Sturdy-Step with one Phillips head screw and a special clip. Wheels allow you to move the step without lifting or dragging. P/N 12-00207

KICKSTAND - Adds extra stability and increases maximum load capacity to 25 lbs. P/N 12-00209

SPRING-LOADED CASTER SET - Caster assemblies make it easier to move Sturdy-Step without lifting or dragging. Each caster is equipped with a special spring. When you step on the Sturdy-Step, it settles onto the rubber feet, making it a stable, work platform. Set includes 4 caster assemblies, installation hardware & instructions. P/N 12-00208

WHEEL AND HANDLE KIT - Attaches to the Sturdy-Step quickly and easily. Wheels allow you to roll the step freely without lifting or dragging; no more back bending, no marred floors. Tip of handle is 44" from ground. Net weight: 7 lbs. P/N 12-00211

HEAVY-DUTY BI-METAL HOLE SAWS



Milwaukee hole saws provide an economical means of extending the useful range of portable drills, drill presses and lathes. High speed cutting edges welded to steel bodies produce clean, accurate holes All hole saws listed cut to standard 1.25" depth. Order appropriate arbor for use with each size hole saw.

| Hole Dia. | Part No. | Use w/Arbor No. | Price |
|-----------|------------|-----------------|-------|
| 5/8" | 49-56-0620 | 12-01993 | . |
| 3/4" | 12-02001 | " | . |
| 7/8" | 12-01992 | " | . |
| 1" | 49-56-1000 | " | . |
| 1-1/8" | 12-01991 | " | . |
| 1-3/16" | 49-56-1180 | " | . |
| 1-1/4" | 49-56-1250 | 12-02001 | . |
| 1-3/8" | 49-56-1370 | " | . |
| 1-1/2" | 12-01990 | " | . |
| 1-5/8" | 49-56-1620 | " | . |
| 1-3/4" | 49-56-1750 | " | . |
| 1-7/8" | 49-56-1870 | " | . |
| 2" | 49-56-2000 | " | . |
| 2-1/4" | 49-56-2250 | " | . |
| 3-1/8" | 49-56-3120 | " | . |

SUPERCHAMP IV CRIMPING TOOL

The professional quality crimping tool. This versatile hand tool has a separate set of crimping dies for insulated terminals and splices in wire sizes No. 22 to No. 10 AWG. It has a terminal locator to position insulated terminals during crimping and an in-nose cutter for tight locations. This tool is a wire stripper and has a built-in heavy duty bolt cutter. Color coded dies in tool nose correspond to color on terminal insulation sleeve to insure die selection. A stud gauge and wire stripping gauge are important on the tool body. Cushioned handles. P/N 604252-1

BANTAM ROTA-CRIMP TOOL

The AMP Bantam Rota-Tool crimps uninsulated terminals and splices for No. 8 to 1/0 sizes. The correct die position is selected by rotating dies to correct AWG number. Dies are fixed in tool to avoid loss. Compact, rugged and easy to handle. 15" long. Wt. 5 lbs. Not for certified Aircraft use. P/N 601075

3M™ CRIMPING TOOL TH-440

High carbon, heat-treated steel crimping tool that has a unique design that provides a high strength/weight ratio that crimps a broad range of 22-10 AWG terminals and connectors. P/N 12-01146

TO

TOOLS - CUTTERS

TWO STEP STUD EXTRACTORS



Our Two Step Stud Extractors are the simplest way to remove broken studs and require only 1/8" of the broken stud for removal. Simply tap stud remover on stud or frozen bolt with a hammer or mallet, and then remove stud by attaching a wrench to the hex portion of the remover. Just hammer on and screw out. Built to

last from case hardened steel. Stud Extractors available in sizes listed below.

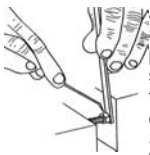
| Part No. | Size | Price Ea. | Part No. | Size | Price Ea. |
|----------|-------|-----------|----------|---------------|-----------|
| 76001-76 | 3/16" | . | 76008-76 | 5/8" | . |
| 76002-76 | 1/4" | . | 76009-76 | 3/4" | . |
| 76003-76 | 5/16" | . | 76010-76 | 7/8" | . |
| 76004-76 | 3/8" | . | 76011-76 | 1" | . |
| 76005-76 | 7/16" | . | 76012-76 | Set 3/16-1/2" | . |
| 76006-76 | 1/2" | . | 76013-76 | Set 9/16-1" | . |
| 76007-76 | 9/16" | . | | | |

SPOTFACE KIT



The Spotface Kit tool makes a flat spot for screws. This tool is specifically modified to provide rail cap clearance for use on seat rails. Cutter comes with 1/8", 5/32", 3/16" pilots. P/N 05-04429

THE PRECISION SURE START TOOL



A tool to assist starting a nut onto a bolt in tight fitting areas. Simply screw the nut onto the SureStart tool, place the tool next to the bolt threads and using a small screwdriver or scribe, rotate the nut off of the SureStart tool and onto the threads of the bolt. The aluminum handle may be bent to suit a specific job. Kit accommodates Sizes: #6-32, #8-32, #10-32, 1/4-28, 5/16-24, 3/8-24, 7/16-20 and 1/2-20 nuts. Constructed with aerospace grade aluminum and hardware. Made in the USA Patent Pending. P/N 12-01360

TAPER PIN REAMERS



Brown & Sharpe Taper pin reamers for installation of AN385 and

AN386 aircraft taper pins. Straight shank, straight flute. High speed steel. No. 596 Straight Flute.

| B&S Taper No. | Diameter | | Flute Length | Part No. | Price |
|---------------|-----------|-----------|--------------|----------|-------|
| | Small End | Large End | | | |
| 1 | .1974 | .3176 | 2-7/8" | 12-01622 | . |
| 3 | .3099 | .4510 | 3-3/8" | 12-09900 | . |
| | .3474 | .5017 | 3-11/16" | 12-10000 | . |
| 5 | .4474 | .6145 | 4" | 12-10100 | . |
| 6 | .4974 | .6808 | 4-3/8" | 12-10200 | . |

NYLON FLANGES IN BATTERY BOX MODIFICATION KIT



-Improve Starting Performance. -Easier Removal & Installation of Battery. -May prolong life of battery and starter. -Less expensive to modify existing box than to replace. -Compatible with our famous "Low Loss" Cable Kits! -Eliminate extra connection on outside of the battery box. -Do away with the troublesome braided negative strap. Experimental.....P/N 11-02892
STC'd/PMA'd.....P/N 11-02893

BATTERY TERMINAL TOOL



The Right Tool for the Job. * Prevents damage to battery posts. * Steel frame, fits battery wing nuts securely. * Insulated to eliminate shorting, sparks or possible explosions. * Foam grip handle eliminates slipping. * Great gift for pilot or mechanic. P/N 12-16200

OLFA ROTARY CUTTER



Ergonomic 45mm rotary cutter features a unique comfortable handle design for both left- and right-handed use. Features include the dual-action safety lock that allows the blade to be locked open for comfort and closed for safety. Accommodates the Olfa straight, wave & pinking blades. The cutter is a rolling razor blade used to cut fabrics into shapes, strips and pieces. Guaranteed forever. Suggested uses: cut fiberglass, composite materials, delicate cloth, fabric, paper, leather, etc.

Rotary CutterP/N 01-00302
RB45-1 Replacement Blade onlyP/N 01-00300
RB45-1 Replacement Blade pk of 5.....P/N 01-00301
Rotary Pinking Blade.....P/N 12-01709
Good For: general quilting, sewing and craft projects. Great for cutting out patterns, reduces fraying. Can be used in industrial applications.

OLFA STAINLESS STEEL SCISSORS



The OLFA stainless steel scissors (7" overall length) are rapidly growing in popularity in both consumer and industrial applications. Extremely high quality stainless steel blades meet perfectly for precision cutting. The material being cut is held in place by one

blade which is serrated, providing positive control. Ideal for use on such varied materials as paper, fabrics, plastic, rubber, & aircraft composites. P/N 01-00303

OLFA CUTTING TOOLS



OLFA L-2 CUTTER - A sure-grip heavy duty cutter which features a ratchet wheel blade lock & an anti slip rubber grip insert. P/N 12-00258



OLFA NOL-1 CUTTER - Heavy duty 'hand setter' utility knife which features a ratchet wheel blade lock. Unique cushion handle provides comfortable grip. Cutter..... P/N 12-00257
Replacement Blades (5 pack)..... P/N 12-00261



OLFA H-1 CUTTER - Extra heavy Duty sure grip cutter features largest blade available, ratchet lock to prevent slipping, rubber grip insert for positive control, and a rope loop to secure cutter to belt or work table. Cutter P/N 12-00259
Replacement blades (5 pack)... P/N 12-00260

AUTO-LOCK STAINLESS PROFESSIONAL KNIFE



Accommodates both left- and right-handed users. Features locking slide blade, stainless steel handle and built-in pocket clip/blade snapper. A perfect steel cutter where rust is a concern. Lifetime Guarantee. Cutter P/N 12-00339
Replacement blades (10 pack)... P/N 12-00340

45MM ROTARY PINKING BLADE - 1-pack (PIB45-1) Circular rotary replacement pinking blade designed to place "teeth" on the edge of fabric to reduce raveling and to add a unique edge to any project. Very popular with crafts and memory book development. Also great for use with Polar Fleece! This blade is made of stainless steel for sharpness and durability. For Deluxe 45mm Rotary Cutter (RTY-2/DX) and Pinking Cutter (PIK-2). 1 blade per pack. PN 12-01709



TO

GENERAL SPECIALTY TOOLS



CIRCULAR HOLE CUTTER

General's circle cutters produce precision circles in sheet metal, brass, copper, soft steel, aluminum, plastic, wood and composition materials. Bodies are constructed of heat treated tool steel for durability. All Circle Cutters have replaceable pilot points. The replaceable cutter blades are made of high-speed steel for precise and clean cuts. Circle Cutters are adjustable for cutting variable diameter holes. A hex wrench is included for diameter and depth adjustments.

- #4 Cutter P/N 12-10600
- Extra 3/16" Blade P/N 12-10700
- Pilot Drills for #4 Cutter P/N 12-10800



JEWELERS' SCREWDRIVER KITS

The Screwdriver and Hobby Kit includes five interchangeable blades and a heavy duty knurled handle. Loaded with the most popular jeweler's-sized Slotted and Phillips tips and a scratch awl, this modestly priced set is great for model making and other small-scale applications.

P/N 12-19600



SWIVEL HEAD PIN VISE

The Swivel Head Pin Vise provides fingertip control of small tools when working with jewelry, electronics or models. The double-ended collet offers two distinct sizes for holding a variety of drill bits, reamers and taps. For added control, this Pin Vise has been design with a knurled aluminum body for a sure grip while the swivel head turns smoothly against your palm.

P/N 92



STEEL PROTRACTORS

General's heavy duty steel protractors are trusted by machinists and draftsmen worldwide to deliver crucial measurements with unwavering accuracy. The 6" adjustable arm is ideal for setting bevels, taking measurements and transferring angles. Ultra-fine etched graduations read from 0 to 180 degrees in forward and reverse directions, and will not wear or rub off. Made of ground stainless steel for precision and durability.

P/N 17



POCKET CALIPERS

Although small in stature, these 4" Slide Calipers deliver the same accuracy and precision as some of our larger models. The rugged, stainless steel construction, coupled with a compact design makes these Slide Calipers a great addition to any workbench or toolbox. This item provides inside and outside readings in both 1/16" and 1/32" graduations. In addition, there is a decimal equivalents chart on the caliper's back side for help in making measurement calculations.

16ths & 32nds P/N 729

16ths & MM P/N 12-01633



WIRE STRIPPERS & CUTTERS

Just dial the size and avoid damaging wire, especially when used repetitively. Spring opening jaws can be locked in closed position to protect cutting edges. Made of tool steel, equipped with vinyl cushion grip handles. Individually carded.

P/N 69



FEELER GAGES

Blades are made of tempered steel of exacting tolerances. Each blade has its size etched in both decimals of an inch and millimeters. Nickel plated case has knurled locking nut. No. 230 has 26 3x1/2 in. leaves of the following sizes: .0015, .002, .0025, .003, .004, .005, .006, .007, .008, .009, .010, .011, .012, .013, .014, .015, .016, .017, .018, .019, .020, .021, .022, .023, .024 and .025 in.

P/N 230



REVOLVING PUNCH

This revolving punch is excellent for punching round holes in baffle seal prior to riveting in place. Also works well on leather, plastic, rubber, canvas, & cardboard. Punch sizes: 5/64", 3/32", 7/64", 1/8", 5/32", 3/16".

P/N 72

6 INCH ELECTRONIC DIGITAL CALIPER

The Thread Repair Files help breathe life back into bolts, screws or fittings that have been damaged due to cross-threading or corrosion. Made of high carbon steel, the Repair Files offer eight different thread pitches. In addition, the Thread Repair Files can also be used as a screw pitch gage.

P/N 12-01880



STEEL RULES

General's industrial quality Steel Rules are precision made with etched fine black graduations for easy reading and long life. The two finishes available are polished stainless steel or satin chrome. Front graduated in 10ths, and 100ths, back in 32nds and 64ths. Quality 12 inch (30cm) flexible stainless steel rule. Precision made. Fine black etched graduations.

- 6" Long, 15/32" Wide P/N 616
- 12" Long, 15/32" Wide P/N 1216



PERMANENT ALNICO MAGNETS

These industrial grade Alnico (Aluminum/Nickel/Cobalt) Magnets are built for heavy duty use and will not naturally demagnetize over time like other magnets. They are handy in a plethora of applications and work settings. The horseshoe-shaped Power Alnico Magnets are available in 2 distinct sizes with extraordinarily strong pull capacities ranging up to 13 lbs.

- No. 370-1 Pocket Magnet, 3/4 oz., approx. 1 lb. pull P/N 370-1
- No. 370-2 Power Magnet, 2 oz., approx. 13 lb. pull P/N 370-2



WIRE & SHEET METAL GAUGES

#20 WIRE GAUGE - The Wire Gage helps you to accurately determine the thickness of American Standard wire from 0 to 36. The Gage works with all non-ferrous wires, metals and rods such as copper, brass and aluminum. This heavy duty tool is made from hardened and tempered steel, and is stamped with wire sizes on the front and their decimal equivalents on the back.

#20 American Standard Wire Gauge - For gauging non-ferrous wire & metal like copper, brass, aluminum, etc. P/N 12-02384



#21 U.S. STANDARD SHEET METAL GAUGE - The Sheet Metal Gage is for gauging uncoated sheet, plate iron and steel, based on weights in ounces per square foot. gauge numbers are in U.S. Standard. Numbers 0-36 (.325"- .007"). Made of hardened steel, with a satin finish for easy reading. Decimal equivalents on the back side. Measures 3-1/4" in diameter. P/N 21

SCREWDRIVER HANDLE SCRATCH AWL

If you're looking for a quality, yet economic awl, then check out our Screwdriver Handle Scratch Awl. Featuring a 3-5/8" steel blade and a durable plastic handle, this Scratch Awl makes a great addition to any workbench of toolbox.

P/N 12-01873

UTILITY AUTOMATIC CENTER PUNCH

The Utility Automatic Center Punch is our most economical model, offering a light-weight aluminum body and a hardened steel point. The punch is great for use on various metals and woods, and is impact adjustable.

P/N 12-01874



TRAMMEL POINTS

General's adjustable trammels accurately measure and mark distances that are too great for conventional compasses and dividers. Trammels will accurately transfer measurements, scribe arcs and lay out circles. Points can be replaced with pencils, ballpoint pens, crayons or soap-stone sticks for marking various materials.

P/N 520



DRILL GAUGES

General's Drill Gages help you to quickly and accurately identify the sizes of stray drill bits in your workshop. These gages can be extremely useful with older, unmarked bits or ones that are too small for markings. Each heat treated, heavy steel gage is machined to close tolerance for spot-on accuracy. The bit sizes and decimal equivalents are permanently etched to the face to provide years of dependable use.

| Part No. | No. | Description | Price |
|----------|-----|---|-------|
| 12-00518 | 13 | Number size drills 61 to 80 | . |
| 12-00519 | 14 | Fractional size drills 1/16" - 1/2" x 64ths | . |
| 12-00378 | 15 | Number size drills 1 to 60 | . |

TO

GENERAL SPECIALTY TOOLS

COTTER PIN PULLER



General's Cotter Pin Puller helps you to easily and safely remove steel cotter pins from confined areas. The compound bend design facilitates use of the tool with either a pull or a twist motion. In addition, the heavy duty screwdriver handle provides a familiar, comfortable grip.

P/n 12-01892.....

PRECISION MAGNETIZER/DEMAGNETIZER



Our Precision Magnetizer and Demagnetizer transforms standard screwdrivers, tweezers and tool bits into powerful magnetic pickups. This dual-sized device can magnetize screwdrivers for installing small screws in jewelry, or demagnetize a set of tweezers for working with sensitive electronics. In addition, the innovative step design allows you to control the level of magnetism that is imposed upon your tools.

P/N 12-01890.....

ARCH PUNCH SET



Our extensive selection of Arch Punches are machined to create tolerances for creating precise holes in gasket material, rubber and soft metals. These industrial-quality tools are hand forged to ensure the longevity and accuracy of the cutting edge. This seven-piece set includes some of our most popular punch sizes and is conveniently packaged

P/N 12-01891.....

in a vinyl storage pouch.

INSPECTION MIRRORS

PN 12-01888



PN 12-01887

PN 12-01889

General's Inspection Mirrors are known for their seemingly limitless uses both around the home and in the shop. For instance, an Inspection Mirror can be used to check behind an armoire for lost keys or beneath an engine block for a missing bolt. The Inspection Mirrors come in a variety of sizes and lengths, and feature dual ball-and-socket joints for infinite angle adjustments of the mirror.

1-1/4 Diam
2-1/4 Diam
3-1/2 Oblong

P/N 12-01887.....
P/N 12-01888.....
P/N 12-01889.....

3-PIECE TELESCOPING SPEED-CHUCK INSPECTION SET



Our Speed-Chuck Inspection Sets feature a 26" telescoping wand and an assortment of interchangeable tools including mirrors, magnifiers, LED lights, clips and magnets. Simply pull back on the Speed-Chuck's spring-loaded collar for effortless swapping of attachments. What's more, every Speed-Chuck Inspection Kit comes in a molded zipper case for simple storage.

P/N 12-01885.....

TELESCOPING ALLIGATOR CLIP



The Telescoping Alligator Clip is often used as a third-hand tool in electrical repair for holding and positioning wires. It is also commonly employed around the home for lighting pilot lights and barbeques. The extendable shaft reaches up to 24-1/2" for working in cramped areas, or to provide a safety buffer for lighting a gas grill or furnace. The tool condenses to 5-1/2" and is equipped with pocket clip for those on the go.

P/N 12-01884.....

5PC EXTRA LONG DRIVE PIN PUNCH SET



Our Drive Pin Punches have been machined to exacting tolerances for accurate driving without damaging the pin or hole. The punch ends are ground square to sit flush on the top of the pin. Made of hardened tool steel with a knurled body, General's Drive Pin Punches can either be held by hand or with our Punch and Chisel holder. This five-piece set features extra-long 3-1/2" shafts for reaching deeply recessed pins.

P/N 12-01875.....

5-PC PRECISION ULTRAREACH STAR SCREWDRIVER SET SLOTTED & PHILLIPS



Our UltraTech Precision Screwdriver Sets were assembled in conjunction with industry tradesmen to offer the most comprehensive and reliable solutions. This five-piece set includes Slotted and Phillips screwdrivers in two distinct handle sizes. The color-coded ring on each screwdriver helps you to easily identify the blade type when working arduously in the field.

P/N 12-01881.....

5-PC PRECISION ULTRAREACH STAR SCREWDRIVER SET



Our UltraTech Precision Screwdriver Sets were assembled in conjunction with industry tradesmen to offer the most comprehensive and reliable solutions. This five-piece Torx set features a great assortment of blades in two distinct handle sizes. The color-coded ring on each screwdriver helps you to easily identify the blade type when working arduously in the field.

P/N 12-01882.....

THREAD REPAIR FILE



The Thread Repair Files help breathe life back into bolts, screws or fittings that have been damaged due to cross-threading or corrosion. Made of high carbon steel, the Repair Files offer eight different thread pitches. In addition, the Thread Repair Files can also be used as a screw pitch gage.

P/N 12-01879.....



PRECISION PENCIL COMPASS

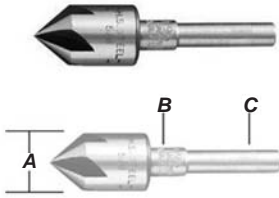
The Precision Pencil Compass is a robust scribing and marking tool with a jaw capacity of up to 9". The fulcrum spring handle makes this tool great for making contours, circles and edge marks. A carpenter's favorite.

P/N 12-01872.....

TO

GENERAL SPECIALTY TOOLS

5 FLUTE ROSE PATTERN COUNTERSINKS



Designed with the perfectionist in mind, our Rose Pattern Countersinks are a must have for any close-tolerance woodworking or machinist project. The 5-flute design reduces chatter and easily pierces steel, brass, aluminum, plastic and wood. The stepped shank

can be used with either a 1/4" or 3/8" chuck.

| A | B | C | PN | Price |
|------|------|------|----------|-------|
| 1/2" | 3/8" | 1/4" | 12-01863 | . |
| 5/8" | 3/8" | 1/4" | 12-01864 | . |
| 3/4" | 3/8" | 1/4" | 12-01865 | . |

6 INCH CONTOUR GAGE



General's 6" Contour Gage is designed for precise surface duplication in woodworking, fine carpentry and other professional genres. The 35 ultra-thin leaves per inch assure that you are getting an exact replication of your copied shape. The Contour Gage is capable of duplicating surfaces up to 3-1/2" deep. Instructions: 1. Press Contour Gage against surface

to be copied. 2. Trace the formed contour gage onto your cutting material. 3. Cut the material. 4. Fit into place.

P/N 12-01870

UTILITY TUNGSTEN CARBIDE TIP SCRIBER/ETCHING PEN



The power of our Utility Scriber and Etching Pen is eclipsed only by its affordability. This durable scriber is a terrific pickup for making quick and accurate marks in the hardest work pieces. In addition, the Utility Scriber includes a permanent magnet affixed to the cap for retrieving and cleaning loose metal shavings. P/N 12-01876

PLAIN TAP WRENCHES



The standard Tap Wrenches are perfect for creating straight and accurate thread holes in your work piece. The fixed T-Handle provides a large gripping surface for generating maximum leverage. This versatile tool can also be used with reamers, drill bits, screw extractors and other hand-turned tools.

| Tap Capacity | Length | Part No. | Price |
|------------------------------|---------------|----------|-------|
| NO. 0 TO 1/4" (1.6 TO 6.3mm) | 2-1/4" (57mm) | 12-01877 | . |
| NO. 12 TO 1/2" (6 TO 12mm) | 3-3/4" (95mm) | 12-01878 | . |

RATCHET OFFSET SCREWDRIVER



An Offset Ratchet Screwdriver is a useful tool to have on hand as it provides greater leverage compared to a traditional screwdriver. The swift ratcheting motion allows you to remove and install screws with ease, and the offset head provides odd-angle access in obstructed areas. This item features two Slotted screwdriver blades and a reversible ratchet.

P/n 12-01883.....



PRECISION OILER

Our Precision Oiler is a highly accurate lubrication tool intended for anyone working with small mechanical parts. The needlepoint tip allows for the precise placement of oil in confined areas. The smooth thumb actuator lets you control the release of lubricant from the reservoir in small droplets. In addition, the Precision Oiler includes a screw-on cover and pocket clip for use on the go. P/N 12-01894



LONG NEEDLE NOSE PLIERS

The Needle Nose Pliers are long and slender in construction, allowing access into both remote and crowded areas. A great retrieval and positioning tool, the Needle Nose Pliers are a staple of hands-on professionals world wide.

P/N 12-01886



6 INCH FLEX ECONOMY RULER 3/4 WIDE

Our Economy Steel Rules are ideal for a variety of home and office uses, offering the same accuracy you've come to expect from any General tool. Each rule is 6" in length and is offered in five distinct sets of Metric and English graduations. In addition, several of our Economy Steel rules are equipped with pocket clips for use in the field.

P/N 12-01133

REPLACEMENT BLADE OIL CAN CUTTER

General Tool's Gold Standard Cutting Wheels are made from tempered, bearing tool steel for smooth, exact pipe cuts. The slim-line surface geometry ensures fewer inner surfaces burrs and less chance for outer surface distortion. The RW122 is designed for larger capacity cutters on iron pipe and other tough surfaces..... P/N 12-01159



CUTTER PLUG WOODWORKING

General's Plug Cutters produce accurate plugs for covering screw holes in decking, flooring and fine furniture. Plug cutters are great for creating a decorative effect in any woodworking project and can also be used to repair nicks, scratches and dents. Each cutter is made from hardened alloy steel and will fit in both hand-held power drills and drill presses.



- 3/8.....P/N12-01866
- 1/2.....P/N 12-01867
- 5/8.....P/N 12-01868

JOGGLE-360 FABRICATION TOOL

Noah Industries has introduced the Joggle-360 into its lineup of innovative metal aircraft fabrication tools. The Joggle-360 will joggle round openings for inspection plates with joggle widths up to 0.562 inch and straight joggle offsets up to 0.625 inch. The tool features hardened steel rollers that form the joggle while gliding around the opening or along the edge by ball bearings that eccentrically adjust for joggle width.

Instruction:

1. Adjust the guide rollers to the desired set back or width of joggle by rotating the Eccentric Guide Roller Adjustment Screws with an Allen wrench.
2. Place the Joggle-360 onto the work that you are going to joggle and tighten the Tension Knob.
3. For straight joggles, run the Joggle-360 back and forth along the work tightening the Tension Knob as required until you achieve the desired joggle depth. Jogging a hole is the same process. Be sure to keep the Guide Rollers in contact with the edge of your work.
4. When the joggle is finished, loosen the Tension Knob and remove the tool from your work.

Note: You may need to tighten the Eccentric Lock Screws from time to time in order to keep the Eccentric Guide Rollers from rotating during use. P/N 12-02252

TO

DRILLS - TAPS - DIES

AIRCRAFT GRADE SUPER COBALT DRILLS

These super cobalt hi-speed jobber length aircraft drill bits feature heavy duty construction to Type J aircraft specifications. Use to drill hard, tough metals, stainless steels, iron based and titanium alloys, and certain plastics. Hardness of cobalt permits speeds 30% over regular H.S.S. drills. Cobalt drills demand rigidly held, positive feed drilling equipment.

| Part No. | Drill Size | Price Ea. | Part No. | Drill Size | Price Ea. |
|----------|------------|-----------|----------|------------|-----------|
| 12-04212 | 42 | . | 12-04221 | 19 | . |
| 12-04213 | 41 | . | 12-04222 | 12 | . |
| 12-04214 | 40 | . | 12-04223 | 10 | . |
| 12-04215 | 36 | . | 12-04224 | "D" | . |
| 12-04216 | 33 | . | 12-04225 | 1/8" | . |
| 12-04217 | 30 | . | 12-04226 | 5/32" | . |
| 12-04218 | 28 | . | 12-04227 | 3/16" | . |
| 12-04219 | 27 | . | 12-04228 | 1/4" | . |
| 12-04220 | 23 | . | 12-04229 | 5/16" | . |
| 12-14221 | 21 | . | 12-04235 | #35 | . |

12" LONG DRILL BITS

These 12" long drill bits are for use with standard electric drills for the hard to reach jobs.

| Drill Size | Size | Part No. | Price |
|------------|---------|----------|-------|
| 3/32" | (.094") | 12-05200 | . |
| 1/8" | (.125") | 12-05300 | . |
| 3/16" | (.188") | 12-05400 | . |
| #10 | (.194") | 12-05500 | . |
| 1/4" | (.250") | 12-05600 | . |

MALE THREADED DRILL BITS

Male threaded drill bits of high speed steel screw into female spindle of angle drill or snake drill.

| Drill Size | 10-32 Thread | Price | 1/4-28 Thread | Price |
|------------|--------------|-------|---------------|-------|
| #10 | 12-05701 | . | 12-05702 | . |
| #20 | 12-05801 | . | 12-05802 | . |
| #21 | 12-05901 | . | 12-05902 | . |
| #30 | 12-06001 | . | 12-06002 | . |
| #40 | 12-06101 | . | 12-06102 | . |

ANGLE DRILL ATTACHMENT

Quickly connects to any drill chuck. Makes a convenient, inexpensive close-quarter tool. 3/16 drill capacity. Specify threaded spindle size: 5/16-24 (P/N 12-18503), 1/4-28 (P/N 12-18501) or 10-32 (P/N 12-18502)

Angle Drill w/ Key Chuck (1/4-28 Only).....P/N 12-18511

ANGLE DRILL KIT - Includes tool case, 24" flexible attachment, 4 threaded drills, collet adapter, 90° angle drill, straight drill attachment, 4 collet drills. P/N 12-18505

SNAKE DRILL ATTACHMENT

Heavy-duty 90° flexible drilling attachment. Overall length 26". 3 Female threaded spindle sizes.
1/4-28P/N 12-06500

W/Key Chuck (5/32"cap.).....P/N 12-06800

CONE JAW CHUCK

Heavy duty yet mini size fits any angle drill or attachment with 1/4" x 28 threads. It's just what you need for close quarter drilling. Features: •Capacity from 1/16" to 1/4" 3/4" length, 0.13 lbs •Wrench included. P/N 12-00245

ANGLE DRILL COLLET & CHUCK KIT

This 10-piece kit gives you 3 different methods of drilling in tight spots. Each shank is 1/4" x 28 which will thread into most drill spindles that angle attachments and angle drills are supplied with. 0.25 lb. KIT INCLUDES: • (4) #200 collets & adapters - drill sizes 11, 21, 30, & 40 • (4) threaded drill bits (1-1/4" length) - drill sizes: 10,21,30,40 • (1) Cone jaw chuck Model TP258P/N 12-00368

HAND THREAD TAPS

There are three basic types of straight thread taps:
PLUG TAPS - used for ordinary threading and have a 3 to 5-thread chamfer, or relief, at the point.
TAPER TAPS - have 8 to 10 threads chamfered for easy starting and are used for tough threading jobs.
BOTTOMING TAPS - with their short chamfer (1 to 1-1/2 threads), are used where the thread must go to the bottom of the hole.
Specify Plug, Taper or Bottoming Tap.

| PLUG TAPS | | | |
|-----------|-----------|------------|---|
| Die Size | Left-Hand | Right-Hand | |
| 6-32 | 12-07601 | 12-07701 | . |
| 8-32 | 12-07801 | 12-07901 | . |
| 10-32 | 12-08001 | 12-08101 | . |
| 1/4-28 | 12-08201 | 12-08301 | . |
| 5/16-24 | 12-08401 | 12-08501 | . |
| 3/8-24 | 12-08601 | 12-08701 | . |

| TAPER TAPS | | | |
|------------|-----------|------------|---|
| Die Size | Left-Hand | Right-Hand | |
| 6-32 | 12-07602 | 12-07702 | . |
| 8-32 | 12-07802 | 12-07902 | . |
| 10-32 | -- | 12-08102 | . |
| 1/4-28 | 12-08202 | 12-08302 | . |
| 5/16-24 | 12-08402 | 12-08502 | . |
| 3/8-24 | -- | 12-08702 | . |

| BOTTOMING TAPS (HIGH-SPEED STEEL) | | | |
|-----------------------------------|-----------|------------|---|
| Die Size | Left-Hand | Right-Hand | |
| 6-32 | -- | 12-07703 | . |
| 8-32 | -- | 12-07903 | . |
| 10-32 | 12-08003 | 12-08103 | . |
| 1/4-28 | -- | 12-08303 | . |
| 5/16-24 | -- | 12-08503 | . |
| 3/8-24 | -- | 12-08703 | . |

DRILLING & TAPPING SETS

13-Piece drilling and tapping set made from special high speed steel. Contains 6 screw machine length drill bits (Nos. 43, 35, 29, 25, 21 and 7), 16 NC taps (4-40, 6-32, 8-32, 10-24, 10-32 and 1/4-20) and one tap wrench. Choice of 135° split point or spiral point drill bits. Set with Split-Point Drill Bits. P/N 41095

ADJUSTABLE ROUND SPLIT DIES

| Die Size | Left-Hand | Right-Hand | |
|----------|-----------|------------|---|
| 6-32 | 12-07001 | 12-07002 | . |
| 8-32 | 12-07101 | 12-07102 | . |
| 10-32 | 12-07201 | 12-07202 | . |
| 1/4-28 | 12-07301 | 12-07302 | . |
| 5/16-24 | 12-07401 | 12-07402 | . |
| 3/8-24 | 12-07501 | 12-07502 | . |

ROUND "KNOCK-OUT" PUNCHES & DIES

Save hours of tedious drilling, sawing, filing and hand-fitting. Produce clean, true holes for sockets, controls, instruments. Cut clean, burr-free holes with these easy-to-use tools. Can be operated by ordinary wrench. One punch required for each hole size.

| Punch Size | Model 730 P/N | Price | Model 730 P/N | Punch Size | Price |
|------------|---------------|-------|---------------|------------------|-------|
| 1/2" | 12-20905 | . | 12-20945 | 1-3/8" | . |
| 5/8" | 12-20910 | . | 12-20950 | 1-1/2" | . |
| 3/4" | 12-20915 | . | 12-20955 | 1-5/8" | . |
| 7/8" | 12-20920 | . | 12-20925 | 1" | . |
| 2" | 12-20970 | . | 12-20975 | 2-1/4" | . |
| 1-1/8" | 12-20930 | . | 3-1/8" | Comes w/ 304AVBB | . |
| 1-7/32" | 12-20935 | . | | 12-20980 | . |
| 1-1/4" | 12-20940 | . | | | . |

Additional Sizes Available. Drive punches with a ball bearing drive for faster, easier hand operation are available for the 2-1/4" & 3-1/8" knock-out punches.

Drive for 2-1/4" PunchP/N #304AVBB.....
Drive for 3-1/8" PunchP/N #1433AVBB.....
DISCOUNT: 12 UNITS - LESS 15% (ASSORTED)

RAPTOR X81

Gives you the choice of using screw machine drills or threaded shank tools. Three flex collets encompass a range of 3/32-1/4 shank tools. A simple attachment immediately converts the tool to use threaded drills. Recommended to use short screw machined drills for special sizes and metric sizes, which is not possible with threaded series. Features: * More power * Greater Torque P/N 12-02251



DRILL BIT SETS - CARBIDE DRILLS & BURS



DRILL BIT SET – SIZES 1-60

This jobber length drill bit set includes high speed steel (HSS) drill bits in sizes 1-60. The set comes complete with a steel storage box. Ideal as a pre-drill for tapping of holes and for many other aircraft building applications.

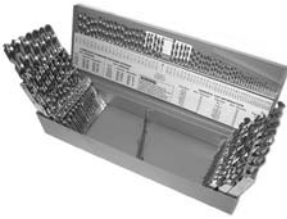
P/N 12-00227



29-PC BRITE FLUTE DRILL SET

This 118° point, high speed steel (HSS) drill set performs well in a wide variety of drilling applications. It is recommended for non-ferrous metals, wood, and plastics. Set includes 29 pcs (1/16 to 1/2" in 64ths) in metal index.

P/N 12-00537



115-PC HSS JOBBER LENGTH DRILL SET

This 118° point, high speed steel (HSS) drill set performs well in a wide variety of drilling applications. It is recommended for non-ferrous metals, wood, and plastics. Set includes 115 pcs (1/16 to 1/2" by 64ths and #1-60 and A-Z in metal index).

P/N 12-00536

STRAIGHT FLUTE CARBIDE DRILLS

For use on hardened, treated, and abrasive materials, stainless steel, cryogenic alloys.



| P/N | Cutting Dia. | Decimal Equiv. | Flute Length | Overall Length | Price |
|----------|--------------|----------------|--------------|----------------|-------|
| 12-00538 | 13/64 | .2031 | 1-3/16 | 2-1/4 | . |
| 12-00539 | 7/32 | .2188 | 1-1/4 | 2-3/8 | . |
| 12-00540 | 1/4 | .2500 | 1-3/8 | 2-1/2 | . |
| 12-00541 | 9/32 | .2812 | 1-1/2 | 2-11/16 | . |
| 12-00542 | 5/16 | .3125 | 1-5/8 | 2-13/16 | . |
| 12-00543 | 3/8 | .3750 | 1-13/16 | 3-1/8 | . |
| 12-00544 | 1/2 | .5000 | 2-1/4 | 3-3/4 | . |
| 12-00545 | 1/8 | .1250 | 7/8 | 1-7/8 | . |
| 12-00546 | 9/64 | .1406 | 15/16 | 1-15/16 | . |
| 12-00547 | 5/32 | .1562 | 1 | 2-1/16 | . |
| 12-00551 | 3/16 | .1875 | 1-1/8 | 2-3/16 | . |

CARBIDE TWIST DRILLS

For use on non-ferrous alloys, cast iron, plastics, aluminum, and highly abrasive materials



| P/N | Cutting Dia. | Decimal Equiv. | Flute Length | Overall Length | Price |
|----------|--------------|----------------|--------------|----------------|-------|
| 12-00579 | 1/16 | .0625 | 3/4 | 1-1/2 | . |
| 12-00580 | 5/64 | .0781 | 7/8 | 1-3/4 | . |
| 12-00581 | 3/32 | .0938 | 1 | 2 | . |
| 12-00582 | 7/64 | .1094 | 1-1/4 | 2-1/4 | . |
| 12-00583 | 1/8 | .1250 | 1-1/4 | 2-1/4 | . |
| 12-00584 | 9/64 | .1406 | 1-3/8 | 2-1/2 | . |
| 12-00585 | 5/32 | .1562 | 1-3/8 | 2-1/2 | . |
| 12-00586 | 11/64 | .1719 | 1-5/8 | 2-3/4 | . |
| 12-00547 | 3/16 | .1875 | 1-5/8 | 2-3/4 | . |
| 12-00548 | 13/64 | .2031 | 1-3/4 | 3 | . |
| 12-00549 | 7/32 | .2188 | 1-3/4 | 3 | . |
| 12-00552 | 15/64 | .2344 | 2 | 3-1/4 | . |
| 12-00553 | 1/4 | .2500 | 2 | 3-1/4 | . |
| 12-00554 | 17/64 | .2656 | 2-1/8 | 3-1/2 | . |
| 12-00557 | 9/32 | .2812 | 2-1/8 | 3-1/2 | . |
| 12-00558 | 5/16 | .3125 | 2-3/8 | 3-3/4 | . |
| 12-00561 | 11/32 | .3438 | 2-1/2 | 4 | . |
| 12-00563 | 3/8 | .3750 | 2-3/4 | 4-1/4 | . |
| 12-00564 | 7/16 | .4375 | 2-7/8 | 4-1/2 | . |
| 12-00567 | 1/2 | .5000 | 3 | 4-3/4 | . |

ALUMINUM CUT

Designed for use on aluminum, non-ferrous metals, soft steel, reinforced plastics, and other soft materials.

CYLINDRICAL BALL NOSE CARBIDE BURS

Aluminum Cut. 1/4" shank.



| Part No. | Dia. | Flute Length | Price |
|----------|------|--------------|-------|
| 12-00588 | 1/4 | 5/8 | . |
| 12-00589 | 3/8 | 3/4 | . |
| 12-00590 | 1/2 | 1 | . |



CYLINDRICAL CARBIDE BURS

Aluminum Cut. 1/4" shank.

| Part No. | Dia. | Flute Length | Price |
|----------|------|--------------|-------|
| 12-00591 | 1/4 | 5/8 | . |
| 12-00592 | 3/8 | 3/4 | . |
| 12-00593 | 1/2 | 1 | . |



ROUND NOSE TREE CARBIDE BURS

Aluminum Cut. 1/4" shank.

| Part No. | Dia. | Flute Length | Price |
|----------|------|--------------|-------|
| 12-00594 | 1/4 | 5/8 | . |
| 12-00595 | 3/8 | 3/4 | . |
| 12-00596 | 1/2 | 1 | . |

MEDIUM TOUGH CUT

Engineered specifically for tough applications. Tough cut insures faster, splinter-free cutting in weld & alloy castings with increased tool life.

CYLINDRICAL BALL NOSE CARBIDE BURS

Medium Tough Cut. 1/4" shank. 6" Long.



| Part No. | Dia. | Flute Length | Price |
|----------|------|--------------|-------|
| 12-00597 | 3/8 | 3/4 | . |
| 12-00598 | 1/2 | 1 | . |



ROUND NOSE TREE CARBIDE BURS

Medium Tough Cut. 1/4" shank. 6" Long.

| Part No. | Dia. | Flute Length | Price |
|----------|------|--------------|-------|
| 12-00599 | 3/8 | 3/4 | . |
| 12-00601 | 1/2 | 1 | . |



14° INCLUDED ANGLE CARBIDE BURS

Medium Tough Cut. 1/4" shank. 6" Long.

| Part No. | Dia. | Flute Length | Price |
|----------|------|--------------|-------|
| 12-00602 | 3/8 | 1-1/16 | . |
| 12-00603 | 1/2 | 1-1/8 | . |

DRILL DOCTOR TRADESMAN BIT SHARPENER



The DD500X Pro Kit combines the Drill Doctor Tradesman sharpener with heavy duty carrying case. Sharpen bits either 118° or the high performance 135° setting and it can turn standard drill bits into self-centering, split point bits. Sharpens bits from 3/32" to 1/2" diameter in about

60 seconds and includes the patented E-Z align system and diamond grinding wheel for sharp precise results. Includes: Sharpener, 1/2" chuck, 110V power cord, carrying case, free video and easy to follow instructions.

P/N 12-00673

TO

ABRASIVE TOOLS & KITS

QUICK CHANGE SANDING & SURFACE CONDITIONING



Power Zirc sanding discs grind down welds and remove sharp edges on all types of metal surfaces. They also apply non-directional finishes to brake rotors, in addition to removing heavy rust and corrosion. Surface Conditioning discs remove baked on gaskets and silicone sealants. They are also used for deburring and polishing sharp edges, as well as paint and corrosion removal. Roloc® is a registered trademark of the 3M Company. P/N12-00845

| Qty. | Description | Application |
|------|---|--|
| 3 | 2" Power Zirc, Lockit Style Discs, 36 Grit | Weld removal/heavy stock removal. |
| 3 | 2" Power Zirc, Lockit Style Discs, 60 Grit | Lighter stock removal. |
| 3 | 2" Power Zirc, Lockit Style Discs, 80 Grit | Blending of heavy scratches. |
| 3 | 2" Power Zirc, Lockit Style Discs, 120 Grit | Blending and removal of scratches. |
| 3 | 3" Power Zirc, Lockit Style Discs, 36 Grit | Weld removal/heavy stock removal. |
| 3 | 3" Power Zirc, Lockit Style Discs, 60 Grit | Lighter stock removal. |
| 3 | 3" Power Zirc, Lockit Style Discs, 80 Grit | Blending of heavy scratches. |
| 3 | 3" Power Zirc, Lockit Style Discs, 120 Grit | Blending and removal of scratches. |
| 5 | 2" Surface Conditioning Discs, Coarse | Gasket/corrosion removal on steel parts. |
| 5 | 2" Surface Conditioning Discs, Medium | Gasket/corrosion removal on steel & aluminum. |
| 5 | 2" Surface Conditioning Discs, Very Fine | Gasket/corrosion removal/scratch blending. |
| 5 | 3" Surface Conditioning Discs, Coarse | Gasket/corrosion removal on steel parts. |
| 5 | 3" Surface Conditioning Discs, Medium | Gasket/corrosion removal on steel & aluminum. |
| 5 | 3" Surface Conditioning Discs, Very Fine | Gasket/corrosion removal/scratch blending. |
| 1 | 2" Lockit Style Holder Pad with Mandrel | Use with 2" sanding and surface conditioning disc. |
| 1 | 3" Lockit Style Holder Pad with Mandrel | Use with 3" sanding and surface conditioning disc. |

Roloc® is a registered trademark of the 3M Company.

STANDARD PORTING KIT

A very complete Porting Kit, with a large variety of Cartridge Rolls for a complete porting job. Includes Do-It-Yourself Guide. P/N 12-00842



| Qty. | Description | Application |
|---------|--|--|
| 2 | 1" x 1" x 1/4" Flap Wheel, 120 Grit | For porting intake runners. |
| 3 Total | Rotary Stones, Tapered, 60 Grit, (1) 3/8" Diameter, (1) 11/16" Diameter, (1) 1" Diameter | Removes large amounts of metal in small areas. |
| 7 Total | Cartridge Rolls, Straight, 1/4" Diameter, (2) 40 Grit & (5) 80 Grit | Porting heads and intake runners. |
| 7 Total | Cartridge Rolls, Straight, 3/8" Diameter, (2) 40 Grit & (5) 80 Grit | Porting heads and intake runners. |
| 7 Total | Cartridge Rolls, Straight, 3/4" Diameter, (2) 40 Grit & (5) 80 Grit | For large porting jobs, to remove a great amount of material. |
| 7 Total | Cartridge Rolls, Half Tapered, 3/8" Diameter, (2) 40 Grit & (5) 80 Grit | Remove material in small areas with a greater product endurance. |
| 7 Total | Cartridge Rolls, Half Tapered, 5/8" Diameter, (2) 40 Grit & (5) 80 Grit | Remove material in small areas with a greater product endurance. |
| 7 Total | Cartridge Rolls, Full Tapered, 5/8" Diameter, (2) 40 Grit & (5) 80 Grit | For quick removal of material in small areas of the engine. |
| 1 | 1/4" Diameter Mandrel, 2-3/4" O.A.L. | Use with Cartridge Rolls. |
| 1 | 1/4" Diameter Mandrel, 4" O.A.L. | Use with Cartridge Rolls. |

HAND PADS



Faster, cleaner, and more durable than wire brushes, scrapers and sandpaper. Non-woven nylon pads are pre-cut. They provide conformable, consistent finishes. General Purpose and Ultra Fine Pads may be used with lubricants and solvents. General Purpose - Clean up dirty parts in solvent tank • Light corrosion removal on steel and aluminum parts. Commercial - An aggressive hand pad for water-based products only. •Not to be used with solvents. •Heavy duty rust removal and general cleanup Ultra Fine - For scuffing in new rod and main bearings. • Light corrosion removal on steel and aluminum parts.

| Description | Size | Grain | Color | Qty. | Part No. | Price |
|-----------------|---------|-------|--------|-----------------------------------|----------|-------|
| General Purpose | 6" x 9" | A/O | Maroon | 60 pack | 12-00861 | . |
| Ultra Fine | 6" x 9" | S/C | Gray | 1 each | 12-00862 | . |
| Commercial | 6" x 9" | A/O | Green | 40 pack | 12-00863 | . |
| Heavy Duty | 6" x 9" | A/O | Tan | 40 pack | 12-00864 | . |
| Hand Pad Holder | - | - | Orange | 1 Hand Pad Holder, 4 Sanding Pads | 12-00865 | . |

BENCH GRINDER DISCS



Quickly remove carbon from pistons and valve stems. Great for light deburring head bolts and studs. One disc is flexible when run alone. Stack as many discs on at a time for the desired finish and removal rate. Safer than a wire wheel, with a much better finish. The very fine grade Bench Grinder Discs are packaged 10 to a pack, and the medium grade Bench Grinder Discs are packaged 5 to a pack.

| Size | Grain | Grade | Max RPM | Part No. | Price |
|-----------|-------|-----------|---------|----------|-------|
| 6" x 1/2" | A/O | Very Fine | 3,600 | 12-00847 | . |
| 6" x 1/2" | A/O | Very Fine | 3,600 | 12-00848 | . |
| 8" x 1/2" | A/O | Very Fine | 3,000 | 12-00849 | . |

METAL POLISHING KIT



An easy way to polish chrome, aluminum and brass with an electric drill motor. Includes: 4 Felt Discs, 1 Holder Pad, 1 1/4" Mandrel
Metal Polishing Kit (2" Dia.)..... P/N 12-00843.....
Metal Polishing Kit (3" Dia.)..... P/N 12-00844.....

DEBURRING AND FINISHING WHEELS FOR HAND GRINDERS



These abrasive nylon Deburring & Finishing Wheels for hand grinders are very aggressive for metal removal and deburring. They produce a satin-textured finish. New abrasive grain is exposed throughout the wheel's wear, for a consistent quality finish. High Durability - The 1"x1" x 3/16" mini wheel is excellent for deburring and blending. • Used with our Cartridge Rolls for porting, our mini wheel supplies a smooth satin finish to ported heads and the intake manifold. • Increases edge life. • Resists loading - smear resistant for uniform final finish. • Conforms to work piece. • Prevents undercutting or gouging.

| Size | Density | Grain | Grade | Max RPM | Part No. | Price |
|-------------|---------|-------|--------|---------|----------|-------|
| 1"x1"x3/16" | Soft | A/O | Medium | 30,000 | 12-00851 | . |
| 1"x1"x3/16" | Soft | A/O | Fine | 30,000 | 12-00852 | . |
| 1"x1"x3/16" | Soft | S/C | Fine | 30,000 | 12-00853 | . |
| 1"x1"x3/16" | Medium | A/O | Fine | 30,000 | 12-00854 | . |
| 1"x1"x3/16" | Medium | S/C | Fine | 30,000 | 12-00855 | . |
| 1"x1"x3/16" | Hard | A/O | Coarse | 30,000 | 12-00856 | . |
| 1"x1"x3/16" | Hard | A/O | Medium | 30,000 | 12-00857 | . |

METAL POLISHING KIT



Save time and money with this generous assortment of our most popular types and grits of Straight Cartridge Rolls, in Coarse, Medium and Fine grades. Keep these Cartridge Rolls in your shop for a variety of hard-to-reach applications. Essential tools for engine porting, including intake manifold, heads and exhaust manifold. Kit includes 1/4", 3/8" and 1/2" cartridge rolls, in 40 and 80 grit, and mandrels. Metal Polishing Kit (3" Dia.) P/N 12-00846

TO

WISE GRIPS - UNIBITS



Locking Pliers,
two straight jaws



Locking Pliers,
two curved jaws



Locking Nose Jaw
with wire cutter



"C" Clamps



12 LC Large Jaw
Locking Pliers

| Vise-Grip Style | Size | Part No. | Price |
|---|------|----------|-------|
| Locking Pliers with Two Straight Jaws | 7" | 12-00196 | . |
| | 4" | 4WR | . |
| Locking Pliers with Two Curved Jaws and Wire Cutter | 5" | 12-00194 | . |
| | 7" | 12-00189 | . |
| Long Nose Jaws with Wire Cutter | 4" | 12-00190 | . |
| | 6" | 12-00192 | . |
| | 9" | 12-00198 | . |
| Locking "C" Clamps | 6" | 12-00188 | . |
| | 11" | 12-00195 | . |
| Large Jaw Locking Pliers, Opens to 3-1/8" | 12" | 12-00197 | . |

TIGHT-FIT DRILL KIT



Space, every inch of it, is at a premium in aircraft design as shape and weight is critical to function. Also, airplanes are riveted together which requires thousands of holes to be drilled in difficult locations without scratching or marring the work surface. So, engineers needed to design a versatile "chuck-less" drill attachment that could reach into very confined areas. The answer was found in putting threads on the shanks of drill bits. The benefits are significant. Threaded drill bits eliminate the need for a chucking mechanism. Freed of this restriction, it is possible to do a

wide variety of jobs in places with extreme space limitations (less than 1" x 2"). Chuck slippage is all but eliminated while the precision mating angle between threaded drill and drive spindle insures concentricity. Drill bit change times are reduced, an exact working drill bit length is insured and the chance of marring or scratching the work surface is greatly reduced. The Model 00105 Kit includes: a versatile close-quarter Right Angle Drill Attachment capable of drilling up to 1/4" diameter holes and compatible with all standard power drills, a 6" Threaded Extension for those deep hard-to-reach spots, a Chucking Spud which allows direct use of threaded TightFit® drill bits and extensions with your standard drill motor, five aircraft quality threaded TightFit® drill bits (Short Drill Bit Set, 00133), a Tight Fit® 3-Way Wrench, and is packaged in a red, heavy-duty, blow-molded storage case. Features: Attaches to any power drill; Recommended operating speed not to exceed 2500 rpm. • Light weight; Right angle drill weighs 1/3 of a pound and rotates 360 degrees for tight-spot access. • Threaded components allow for fast, easy tool changes; Drill over, under or around obstructions. • Design allows "deep reach" in confined areas; Provides utility of extension drill bit set.

P/N 12-01334.....

ACCESSORIES

- Stub Drill Kit** - 5 Drills 9/16" long in 3/32", 1/8", 5/32", 3/16", 1/4" Dia. P/N 12-20310.....
- Short Drill Kit** - 5 Drills 1-1/8" long, in same diameters as above P/N 12-20320.....
- Long Drill Kit** - 5 Drills 2" long in same diameters as above. P/N 12-20330.....
- Screwdriver Set** - #1 & #2 Phillips bits, small & large slotted bits. P/N 12-20340.....
- Extension Set** - 4 Extensions in 1/2", 3" 6" & 9" (can be combined for a work length of 18") P/N 12-20350.....
- Collet Adapter** - Designed to hold all 1/4" shank accessories (countersinks, rotary files, sanding drums). P/N 12-20360.....

DELUXE TIGHT FIT TOOL KIT PROFESSIONAL MODEL



Includes right angle drilling attachment, 6" extension rod, chucking spud, threaded countersink, (6) stub drill bits (9/16" long) & (6) short drill bits (1-1/2" long) in the following diameters: 1/16", 3/32", 1/8", 5/32", 3/16", 1/4". (1) threaded apex socket adapter to fit the angle head & extension rod. (4) screwdriver bits Number 1 & 2 slotted and Number 1 & 2 Phillips. (1) 1/4" threaded collet adapter to fit the angle head, extension rod or spud adapter. (1) 5/16" combination wrench. All above items are packed in a hard blow molded "everything in its place" aircraft mechanic style carrying case. The case even floats when fully packed. There is also a special internal tray for other drills or accessories. P/N 12-11215.....



UNIBIT CARBIDE HOLE CUTTERS

Unlike ordinary hole cutters, Unibit Carbide Hole Cutters cut without hogging, chattering, or vibrating. The aggressive carbide cutting edge holds sharpness for long life. Use them to cut clean, perfectly round holes through steel, stainless steel, aluminum, brass, copper, and many other materials. No center punch is required, and the double ended pilot drill allows for longevity and durability. Available in 16 sizes. Shank size on Hole Cutters 3/4" through 1-1/16" is 3/8", and on cutters 1-1/8" to 1-3/8" shank size is 1/2".

| Hole Size | P/N | Price | Hole Size | P/N | Price |
|-----------|----------|-------|-----------|----------|-------|
| 7/8" | 12-03715 | . | 1-3/8" | 12-03750 | . |
| | | | 2-1/8" | 12-03775 | . |

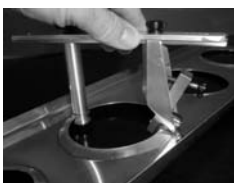


BLAIR HOLE CUTTER

The Blair hole cutter fits any 1/4" drill and set includes 7 blades (1/4" to 5/8" arbor), pilot and holder. The blades are threaded onto arbor and precise control of the depth of cuts is provided by adjusting screws. Over 3000 holes in sheet metal can be cut by each blade.

Model TP147 P/N 12-00243.....

FLANGING-360 TOOL



This is a companion tool to the ARC-360 lightning hole cutter. The Flanger-360 will form a 30 degree flange on 2024-T3 aircraft aluminum up to .032" thick and in diameters from 2 to 6 inches. Its polished hardened steel rollers gently and effortlessly form the flange as the operator rotates the tool around the lightning hole.

Unlike other flanging tools that rely on the skill and eye of the operator, the Flanger-360 stays in constant position with the lightning hole via guide rollers as it progressively forms the flange. P/N 12-02030.....

UNIBIT STEP DRILL



The UNIBIT Step Drill uses a unique single flute design to drill perfectly round holes in thin materials quickly and with less effort than any other bit on the market today. UNIBIT incorporates cutting steps of progressively larger diameter, making it possible to drill up to 13 different hole sizes with a single bit. Once the desired hole diameter is obtained, the hole is automatically deburred by the cutting edge of the next larger step. UNIBIT #1 drills 13 holes in 1/32" increments from 1/8" through 1/2" and has a shank size of 1/4". UNIBIT #2 drills 6 sizes of holes from 3/16" through 1/2" and has a 3/8" step thickness with a 1/4" shank. UNIBIT #3 drills 9 sizes of holes from 1/4" to 3/4" and has a step thickness of 1/8" with a 3/8" shank.

- UNIBIT #1 Step Drill P/N 12-03700.....
- UNIBIT #2 Step Drill P/N 12-03800.....
- UNIBIT #3 Step Drill P/N 12-03900.....

TO

SHEARS - NIBBLERS

QUICK GRIP BAR CLAMPS



From the makers of Vise-Grip tools comes the amazing new Quick-Grip bar clamp. The unique pistol-grip handle lets woodworkers hold the clamp and adjust jaw pressure with just one hand. One finger unlocks the Quick-release trigger. Features include positive locking action to hold work tight, strong, lightweight high-tech construction, instant adjustable clamping pressure, large, pliable pads that won't mar work, and a variety of jaw openings. It will "single-handedly" change the way you think about bar clamps!

| Part No. | Jaw Opening Size (mm) | Price |
|----------|-----------------------|-------|
| 12-03910 | 6"/150 | . |
| 12-03920 | 2"/305 | . |
| 12-03930 | 18"/455 | . |

MICROMETER



For measurements of 0-1", with .001" graduations. Precision-ground hard steel faces. Direct-feel thimble with friction stop and lock nut. Dull chrome finish throughout with black graduations. Decimal equivalents on frame. Zero adjustment requires no wrench. Guaranteed accuracy .0005 P/N 12-01156.....

LONG REACH PLIER KITS



(3) pieces for access into the most demanding applications. Each plier has a full 11" reach. Medium carbon steel, hardened, fully polished. Cushion PVC handles. Leather storage pouch. Model TP942.....P/N 12-00364.....

HOLE DUPLICATORS (DRILL BUSHING TYPE)

Provide an accurate means of drilling duplicate matching holes in over-lapping sheets. Hole to be duplicated is drilled through bushing when pilot is in place..... ea

| Part No. | Pilot & Drill Size | Part No. | Pilot & Drill Size |
|--------------|--------------------|--------------|--------------------|
| AT532-61 #40 | (.098") | AT532-63 #21 | (.159") |
| AT532-62 #30 | (.129") | AT532-65 #10 | (.194") |

DRILL STOPS



Lock on drill with set screw. Regulate hole depth, cushion the breakthrough. Eliminate surface marks & reduce drill breakage.

| | | |
|-----------|--------------|------------------|
| #40 Drill | P/N 12-08800 | ..... |
| #30 Drill | P/N 12-08900 | ..... |
| #28 Drill | P/N 12-09000 | ..... |
| #21 Drill | P/N 12-09100 | ..... |
| #20 Drill | P/N 12-09200 | #12 Drill |
| | | P/N 12-09300 |
| #10 Drill | P/N 12-09400 | 1/4" Drill |
| | | P/N 12-09500 |

ANGLE DRILL



One of the smallest angle head designs for close-quarter drilling operations. Made in USA. Features: • 2800 rpm • 90° angle head • Rear exhaust • 1/4" drilling capacity • 59/64" angle head height • 1/4"-28 threaded spindle • 12-5/8" length • 78DB P/N 12-00241.....

ADEL HAND "NIBBLING" TOOL



Cuts sheet metal like punch and die. Cuts holes to any size and shape. Start with 7/16" hole then "nibble" to size required. Capacity 18 Ga. steel. Wt. 8 oz. P/N 12-10400 Replacement Punch P/N 12-10500

CUSHIONED CABLE CLAMP (ADEL CLAMP) INSTALLATION PLIERS



These special pliers allow for greatly simplified installation of single or multiple Adel type cushioned clamps. The pliers securely hold the aligned clamps in position, allowing for easy installation of securing hardware. Each kit includes special plier, alignment awl, and simple instructions. P/N 12-02017.....

KETT PORTABLE POWER SHEARS



ELECTRIC MODEL K-200 – Extra-powerful 115V, 50/60 cycle AC/DC motor. Heavy-duty bearings & die-cast aluminum cutting head. Tool is UL and CSA approved. 2300rpm. Maximum cutting speed, 180 inches/minute. Wt. 5 lbs. Over-all length, 11.75". Ampere rating, 2.2 amps. P/N 12-01137.....

ELECTRIC MODEL K-442 – Kett's all-purpose 16 gauge power shears cut up to 16 gauge mild steel, cleanly and easily, without burring or buckling the material. These lightweight shears, designed for durability, feature a variable speed motor and fill the gap between Kett's light duty and heavy duty power shears. P/N 12-01153.....



PNEUMATIC MODEL P-500 – Equipped with air-metering trigger for variable-speed cutting, so that initially the blade can be operated slowly to prevent chattering at start of cut. 2600rpm. Maximum cutting speed, 180" per min. Wt. 3 lbs. Over-all length, 9". P/N 12-01158.....



KETT KB-301 CORDLESS 18GA SHEAR



Kett's powerful 14.4 volt Cordless Shear gives you complete freedom in the shop. Its high torque 2300 SPM motor lets you easily cut 18 gauge mild steel or up to 20 gauge stainless at over 150"/minute. The swivel head gives you precise control as you make straight or contour cuts. The double-cut shearing action leaves a clean burr free edge and won't warp or bend the piece. The lightweight hi-impact thermoplastic housing and aluminum cutting head keep weight down to only 7 lbs. The extended run time NiCad battery recharges quickly and there's room for a spare, and the charger unit, in the handy carrying case. Length: 12-3/4", Weight: 7 lbs.

The kit includes the KB-301 power shear, KB-302 14.4 volt NiCad High Performance battery. KB-303 battery charger and KB-304 carrying case.

| Model No. | Description | Part No. | Price |
|-----------|--------------------------|----------|-------|
| KB-301-K | Cordless Shear Kit #300 | 12-00117 | . |
| KB-302 | 14.4 volt NiCad Battery | 12-00118 | . |
| KB-303 | One Hour Battery Charger | 12-00119 | . |
| KB-304 | Carrying Case | 12-00121 | . |

KETT KD440 14GA POWER SHEARS



This lightweight, pistol grip shear cuts 14 gauge mild steel and most grades of stainless to 16 gauge. Double insulated, the KD 440 cuts over 150 inches/minute, leaving a clean, flat sheet, ready to fabricate. Distortions are absorbed in an easily disposed of waste curl, leaving the sheet cool and free of burn, chips, and burrs. The cutting blades are finest high speed steel.

(Also cuts sheet metal, Stainless and Plastics)

P/N 12-00676.....

TO

AMP PRO CRIMPER II HAND TOOL

The PRO-CRIMPER II Hand Tool provides the versatility of general-purpose service of general-purpose service tools along with the reliability and ease of use of many premium-grade tools. For versatility, 75 die sets (available separately) are interchangeable, including those for open-barrel contacts and terminals. Additionally, many of these die sets have multiple cavities for crimping a variety of contact or terminal sizes. For reliability, the tool is constructed of durable high carbon steel with extra-strength pivot pins. And, for user convenience, the PRO-CRIMPER II Hand Tool particularly excels. Ratchet control is provided for complete crimp cycling; this helps eliminate partial crimps. Also, an emergency ratchet release allows the user to open the tool jaws at any time during the crimp cycle. To reduce handle force, the linkage was designed to match the forces required to crimp our largest insulated terminal. The result is dramatically less hand force than comparable tools. Also, the angled had and specially designed handles provided comfortable operation. Locator are mounted on pin-and-socket style tools. They help properly locate the contact in the die set, provide a wire stop, and help minimize contact rotation and bending during crimping.

| | |
|----------------------------|-------------------|
| PROCRIMPER II 58433-3..... | P/N 12-01379..... |
| O-CRIMP DIE 58435-1..... | P/N 12-01380..... |
| HEX CRIMP DIE 58436-1..... | P/N 12-01381..... |
| PIN & SOCKET 58495-2..... | P/N 12-01382..... |

KOUL SINGLES STAINLESS BRAIDED HOSE ASSEMBLY TOOLS

Since the invention of stainless braided hose, racers and mechanics have been fighting the problem of installing it into the socket part of the assembly. If your lucky and get a clean cut on the end of that hose, you might get it in. Most of the time a little fuzz appears on the hose end and the battle begins. It is not only time consuming, it can get bloody. This tool is the solution that makes the assembly a snap. Manufactured of a high tech composite, it is virtually indestructible. No need to worry about vise marks or wearing out. Just insert the socket into the tool, twist the hose in, and in less than 10 seconds you have it assembled. You can repeat this several times without recutting the hose end. The tool can pay for itself the first time you don't have to scrap some hose because it got too short trying to clean up the end. You'll be amazed at the amount of time you'll save.

SMALL KIT - The Small kit contains the capsules to install -4, -6, -8 hose into their respective sockets. To accommodate all the different manufacturer's fittings, spacers and sleeves are required to tighten up the some of the sockets within the capsule. For the tool to perform at its best, the socket needs to be a snug fit in the funnel. The two spacers are used in some -6's and 8's. If the socket seems loose in the tool, use a spacer to tighten it up. In the small kit, only the Russell -4 needs a sleeve. Not for use with Teflon-style hose. P/N 12-01061.....

LARGE KIT - The Large kit contains the capsules to install -10, -12, -16 hose into their respective sockets. To accommodate all the different manufacturer's fittings, spacers and sleeves are required to tighten up some of the sockets within the capsule. For the tool to perform at its best, the socket needs to be a snug fit into the funnel. In the 1016 kit, all the -16's except Russell's require the sleeve and a rear spacer. See the instructions in the case for the proper spacer number. Most of the -10's and 12's* will use a spacer. Not for use with Teflon-style hose. * -12 is a stainless washer. P/N 12-01062.....

HOT ROD KIT - The Hot Rod kit contains the capsules to install -6, -8, -10 hose into their respective sockets. To accommodate all the different manufacturer's fittings, spacers and sleeves are required to tighten up some of the sockets within the capsule. For the tool to perform at its best, the socket needs to be a snug fit into the funnel. Spacers are used in some -6's, -8's, and most -10's. If the socket seems loose in the tool, use a spacer to tighten it up. See the instructions in the case for the proper spacer number. Not for use with Teflon-style hose. P/N 12-01898.....

THE PRO COMBO - The Pro Combo is a special offer of BOTH the #468 and #1016 kits listed above. Pros need both kits to handle all the hose sizes in a race car. Ordering this combination will save \$15.00. Not for use with Teflon-style hose. P/N 12-01897.....

KOUL SINGLES

| | |
|---------------------|-------------------|
| 6 Koul Single..... | P/N 12-01928..... |
| 8 Koul Single..... | P/N 12-01929..... |
| 10 Koul Single..... | P/N 12-01930..... |



P-KIT AIRCRAFT WINDOW INSPECTION PRISM KIT

The "P-KIT" (Inspection Prism Kit) is packaged as a completely self contained aircraft window inspection tool kit. It comes in a waterproof lockable case and includes Instructions, Inspection Prism, Coupling Agent and a 6000 Candlepower Flashlight with batteries. It's ready to use to inspect your aircraft windows for possible bolt hole damage. If the "P-Kit" Prism becomes scratched with use, simply sent it back to the factory and they will refinish it for you free of charge. P/N 12-01333.....

EXPRESS PORTABLE AIRCRAFT VACUUM



The Express Toner/ESD Vacuum provides .3 micron filtration which captures particles that are less than one one-hundredth the thickness of a human hair. This means these vacuums will do a thorough job of cleaning planes of the smallest particulates like mold spores, chemicals, foreign substances or any other microscopic particles

that could be hazardous on a plane. Additionally its light weight (about 6 pounds) makes the Express Vacuum easy to move into and around the interior of an airplane. Plus it is the only product in the market of this nature which is ESD safe, this is of great importance given all the delicate electronic equipment which is found on today's airplanes. Note: Bag is optional and may be purchased separately. Features: 600 Watt Flow Through Motor • 6' ESD safe hose • Crevice tool and brush • 12" Flexneck tool • .3 micron toner cartridge filter • Line filter • 12' power cord • ESD SAFE
Toner/ESD Vacuum 110V..... P/N 12-01058.....
Toner Toner Filters 2 Pk..... P/N 12-01059.....
Vacuum Carrying Bag..... P/N 12-01454.....



THE SPINNING RATCHET

This tool is a combination tool providing a ratcheting action for power and a spinning action for speed. All types of accessories can be used with this wrench, such as extensions on either end, or flexible drives. With out the spinning handle attached, it is a very compact tool for restricted areas. The ratchet pawl is made from annealed steel to allow it to fail before the ratchete gear as it is a low cost item. The spinning gears are protected by a shear pin that will fail before the bevel gears, again a low cost item, replacement, rather than replace one or both of the bevel gears, if they become over loaded. The tool is 3/8" drive. Use your socket accessories, if you do not have a spinning handle purchase one when you buy your new tool. P/N 12-00742.....

Adapter set..... P/N 12-01601.....



KEYLESS DRILL CHUCK

This 3/8 inch square drive works well with the Spinning Ratchet(tm) and with other socket drives; such as the ratchet wrenches, flexible drives, u joints and extensions. Just the tool for getting into tight spaces to tap or other work that requires turning a tool. P/N 12-01387.....



ELECTRIC TOOL ADAPTER

3/8" Drive, 3-inch, locking adapter for electric tools P/N 12-01706.....

WRENCHES - PLIERS - FEIN MULTIMASTER

FULLY RELEASING TORQUE DRIVER



The MD1F35H is an adjustable driver with a range of 5 to 35 lb. in. Body is constructed of steel and anodize aluminum, has a CNC machined knurled grip and 1/4" male drive and comes packaged in a plastic box. The MDP1F35 is a preset model ideal for repetitive assembly operations. P/N 12-00530.....

DIAL TYPE TORQUE WRENCH



Dial Type Wrenches provide unmatched reliability, accuracy and durability for applications where torque measurement is extremely critical. Models feature a memory pointer that indicates the highest torque achieved during application of torque. 2% accuracy clockwise and counter-clockwise. All wrenches are made in the USA of all steel construction for the highest quality. Both models come with a plastic storage box and a calibration compliance certificate.

3/8" sq.dr. / 300 lb.in.....P/N 12-00531.....
3/8" sq.dr. / 600 lb.in.-50 lb. ft.P/N 12-00532.....

MICROMETER ADJUSTABLE CLICK WRENCH



Engineered, precision bearing surfaces extend the calibrated life of these micrometer torque wrenches to as many as 60,000 cycles or more and ensure the most reliable performance possible. In addition to flawless operation at release, calibration is completely external, unlike traditional mechanism that require disassembly and the replacement of blocks and shims. Both models come with a plastic storage box and a calibration compliance certificate.

3/8" sq.dr. / 30-200 lbs. ft.....P/N 12-00533.....
3/8" sq.dr. / 20-100 lbs. ft.....P/N 12-00534.....

TWISTED STRIPPER TWISTED SHIELDED PAIR WIRE PREPARATION TOOL



STP Wire Stripping Problem Background: From the beginning, Mil-Spec Tefzel Shielded Twisted Pair wire has defied every wire stripper available to installers, leaving a razor blade or knife as the best option for removing the outer jacket. This time consuming method

There is FINALLY a tool to quickly strip the shielded twisted pair wires in your avionics installations!

is imprecise, and it can easily lead to internal shorts between the center conductors and the shield, especially when solder sleeves are used for shield termination. With the increased use of RS-232, ARINC 429, and other types of data busses in today's aircraft electronics, this type of wire is now a major component of many avionics installations. Stop the Razor's Hidden Damage Ring and slit. That has been the standard way to remove twisted pair jackets since the introduction of this type of wire. This time consuming and inaccurate process has obvious disadvantages when compared to the TS-7000: P/N 12-02031.....

COMPOUND JOINT HOSE PLIERS



Compound joint allows access in long narrow openings with minimal handle movement. Flush-riveted joints contribute to the tool's narrow profile. Red vinyl grips for comfort & control. Chrome vanadium material for durability & corrosion resistance. 8mm Pliers..... P/N 12-01344.....
12mm Pliers..... P/N 12-01345.....
18mm Pliers..... P/N 12-01346.....
All 3 Set Pliers ... P/N 12-01347.....

LONG REACH COMPOUND JOINT PLIERS



Easily access long narrow openings with minimal handle movement. Longest narrow reach available
13.00" P/N 12-01339.....
12.75" P/N 12-01340.....
12.62" P/N 12-01341.....
All 3 Set..... P/N 12-01342.....



ACCU-TAP PRECISION SET

Accu-Tap delivers professional results with every use. Align Accu-Tap using the specially designed sight gauge. The high visibility cross hairs ensure that you will not miss your mark. The v-block makes it easy to drill round stock and tubing and also works on any flat surface. With a flip of a switch, 180 pounds of force is activated in the unique magnetic base securing the guide in the exact location that you need.

Simply select the desired drill bushing and insert into Accu-Tap's locking liner. Grab your favorite drill and see the results unfold. Accu-Tap delivers results within .001".

P/N 12-01871.....

FEIN MULTIMASTER SPEED START



For beginners, who do not want to sacrifice professionalism in spite of being price conscious.

Includes:

- 1 FEIN MULTIMASTER FMM 250
- 1 universal E-CUT saw blade (29mm)
- 5 of each type of sanding sheet, grain 80, 120 and 180
- 1 universal E-CUT saw blade (29mm)
- 1 rigid stopping knife
- 1 key and mounting bolts

Features

- FEIN MultiMaster Start - a fully-fledged FEIN MultiMaster, suitable for all applications, featuring the most important accessories for grinding, sawing and scraping.
- In the lead through oscillation technology: unsurpassed versatility.
- Optimum handling thanks to ergonomic design and low weight
- Chuck with form-fitting mount provides high torque transfer.
- Powerful 250 Watt motor with electronic speed control.
- Integrated interface for adaptation of additional system accessories.
- Extensive range of accessories available

P/N 12-01853.....

ROTO WRENCH — 8 SIZES IN 1



RotoWrench provides 8 sizes in one prostyle box wrench. Change sizes in seconds with unique "spin lock" design. Features 12 gripping teeth to prevent rounded corners, 30° swing arc for tight clearances, slim profile makes RotoWrench easy to store, and hardened chrome-moly steel for lifetime service. Great for working on aircraft, autos, RV's, trucks, bicycles, ATV's watercraft, motorcycles and at home. Lifetime warranty.

MODEL 10M - includes 8 most common metric sizes: 8, 10, 12, 13, 14, 15, 17 & 19 mm P/N 12-00523.....

HOSE PINCH-OFF PLIERS



Great for radiator and heater hose, vacuum and fuel lines. Tested to 50,000 cycles without failure for reliable performance. Patented clamping mechanism - No adjustment needed -- Simply squeeze to lock Cushion handgrips for comfort and control. Available in three

sizes. Made in U.S.A.

Hose Pinch-off Pliers 1-1/4" OD Cap.P/N 12-00524.....
Hose Pinch-off Pliers 2-1/2" OD Cap.P/N 12-00525.....
Hose Pinch-off Pliers 3/4" OD Cap.P/N 12-00526.....

HOSE CLAMP PLIERS



Specially designed for applying and removing spring hose clamps. The recesses in the jaws grip the ends of the spring so it cannot slip or twist. Grips with either end or side of jaws for reaching into tight places.

P/N 12-01154.....

BOLT INSERTION TOOL




This tool allows you to put bolts in tight areas. The tool was designed to install the bolts in an aircraft elevator, however this tool has many other uses. The tool is 1/2" wide 5-3/4" long with a 3-1/2" reach. It can be used for fasteners from #6 to 5/16" diameter. The tool is made of 100% stainless steel for strength and appearance. P/N 05-04384.....

TO


SAFETY WIRE TWISTERS - SAF-T-BLOKS

MILBAR SAFETY WIRE TWISTERS

 Three-In-One Tool: Pliers, twist-ers and cutters. Used on wire sizes .060" or less. Grips wire into 30° slip proof angle. One-hand operation. Squeeze, press button and it locks. Squeeze again and it unlocks. Made in USA.


| With Manual Return | | |
|-------------------------|----------|-------|
| Description | Part No. | Price |
| Standard Nose - 9" Long | 12-00915 | |
| Diagonal Nose - 9" Long | 12-02019 | |
| Tapered Nose - 6" Long | 12-00917 | |
| Diagonal Nose - 6" Long | 12-00914 | |
| With Automatic Return | | |
| 9" Long | 12-00916 | |

MILBAR WIRE TWISTERS MODEL 25W & 26W


 Milbar is the world's leading brand of Wire Twister Tools and Kits. Designed for the professional mechanic, Milbar forgings are made from high carbon alloy steel and are controlled throughout the manufacturing process to exacting engineering specifications. Each tool passes a series of rigorous quality assurance tests which ensure function and reliability under the most demanding environments. (Black oxide finish) TYPES AND STYLES - Wire Twisters come in 6" Diagonal Configuration. The 25W model incorporate a Cushion Throat to catch clipped wire ends, preventing FOD (foreign object damage). The Spring Return feature automatically retracts the twist rod to ease and speed the work.

25W-NOM Size 6" P/N12-01631
26W-NOM Size 9" P/N 12-02018


ECONOMY SAFETY WIRE TWISTERS

 These top quality twisting lock pliers with automatic return are economically priced and extremely durable. Features a sharp cutting edge and will twist up to .060" dia. safety wire. Length 9". Foreign made.
P/N 12-18900

SAFETY WIRE TWISTER KIT M300

 Contains 6" Safety Wire Twister and 19" Chrome Adjustable Safety Twister Tool with Durable Plastic Case
P/N 12-01680

MILBAR 105W PROFESSIONAL WIRING KIT

 The most versatile kit available. Contains three different SafetyTwist® Pliers to cover almost any application: 9" Automatic (1W393), 6" Mini (9W) and a 19" Deep Reach Twister (13W). Includes three 1/4 lb. spools of stainless steel safety wire (.020, .032, .041). Durable plastic storage case. Kit weight 4 lbs.
P/N 12-02020


MINI SAFETY WIRE TWISTERS

Same quality construction as T-3000 twist-ers above, but in small 6" length. Ideal for operation in confined spaces. P/N 12-18910

19" DEEP-REACH TWISTER EXTENSION


P/N 12-16640

SPECIALTY TWISTER

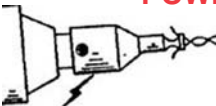
 An excellent tool for different access situations, this twister provides a deep reach and access to close quarters. Made in U.S.A.

P/N 13W


SAFETY WIRE TOOL MFG BY ACS PRODUCTS CO.

 Easy one-hand operation. Reaches into tight places, makes a fast, neat twist. Shatterproof plastic handle.
P/N 12-01072

POWER TWIST ADAPTER

 This new tool attachment provides quick and precise twisting of safety wire using Skill or Black & Decker type cordless screwdrivers. Just attach the adapter to the screwdriver, insert wire and you will have a neat, tight, easy wire twist. Works perfectly in a wide variety of applications (particularly twists in tight spaces). Available exclusively from Aircraft Spruce & Specialty Co.
P/N 12-20800

SAFETY WIRE DRILLING JIG

 This tool provides a fast, simple way to drill bolt heads with virtually no broken drill bits. The tool is made of 6061T6 hard anodized aluminum for durability. Fits 3/16" to 5/8" dia. bolts and works on hex head bolts, header bolts, 12 point countersink and Allen head cap screws. Includes drill bushings and two cobalt drills.
P/N 12-16600

"CENTER IT" HOLE DRILLING JIG




"Center It" is a jig used to drill holes in pipe or tube stock. To use the Center It, simply place it on your drill-press table, run the bit down (with the motor off) to hold the centered jig on the bit, then bolt the jig to the press table. No clamping of the tube is necessary; the angled flats of the jig hold it in a centered position. Your holes are automatically centered on the tube with no center-punching necessary. If the tube is too fat to drill in a single operation, simply turn it over. The device is useful to kitplane builders who have to drill several holes in a single tube or many tubes because no clamping or center-punching of the tube is required. It also makes short work of drilling.
P/N 12-20815

SAFETY WIRE STARTER KIT




This handy kit enables you to safety wire any nuts or bolts on an airframe or engine. Just place the special washers under the bolt or nut, bend up the small flanges to hold the bolt or nut in place, and then use the tab of the washer to attach the wire to a solid point so the bolt cannot move. This kit works on the same principle as drilled bolts do and is very handy for those flying with an engine that does not have safety wired nuts and bolts. Excellent for use on 2 stroke engines. Package of spare washers includes 6 ea. of: 6, 8, & 10 mm sizes.
Safety Wire Starter Kit P/N 12-16625
Package of 18 Spare Washers..... P/N 12-16626

AERO SAF-T-BLOKS

 Since the introduction of Saf-T-Bloks in 1981, they've helped thousands of mechanics by taking the headaches and hassle out of drilling safety wire holes in bolts and nuts. This easy to use Saf-T-Blok holds the bolt steady after you thread it in to the required depth. You then drill the hole through the center with no risk of misalignment. Saf-T-Blok is available in 4 sizes:
Standard: 1/4-5/16-3/8 USS & SAE P/N 12-15345
Metric: 6x1, 8x10, 8x1.25, 10x1.25, 10x1 P/N 12-15346
Aero: 8-32, 10-32, 1/4x20, 1/4x28, 5/16x24..... P/N 12-15347
Allen: #8,10,1/4,5/16,3/8 P/N 12-15348


NUT SAF-T-BLOKS

 Designed to enable safety wire holes to be drilled through the head of bolts or through nuts, across the diagonal. Designed to accept up to 3/4" dia. nut. Easy to use. Nut Saf-T-Blok requires that the nut or bolt be placed into the "V" groove, tighten down the holding screw, drill & deburr.
P/N 12-15349


DRILL RITE PRECISION DRILL GUIDE

 Light and portable, this tool provides straight and true holes every time. Your electric hand drill will perform like a professional drill press. The easy, accurate way to drill any curved surface: Simply place the Drill Rite VGuide™ on any type of pipe or round stock, from 1/2" to 2 1/2" in diameter. Swing the gate closed and lock it down. Insert the proper drill bit in the guide bushing and drill a precisely accurate hole. Includes super hardened drill bushings for popular 3/16" and 1/4" holes for rivets and aircraft hardware. Precision made in the U.S.A. from high quality aircraft grade aluminum.
P/N 12-00836

SAFETY WIRE KITS

 These kits include professional safety wiring kit for all applications. Contains 9" automatic standard twister, 6" safety wire twister, made of hardened alloy steel-black oxide finish plus (3) 1/4 lb. spools of annealed stainless steel safety wire. (Sizes: 020-032-042). Model 100 also includes 19" chrome adjustable safety wire twister (for cavity and deep access applications).
Model 200 P/N 12-16650
Model 100 P/N 12-00336

INSTRUMENT MOUNTING HOLE DRILL JIG

 Aircraft instrument mounting hole drill jig for standard 2-1/4" & 3-1/8" diameter instruments. Accurate and simple tool to use, drill jig made of hardened steel for long life.
P/N 12-00975

TO

KLEIN TOOLS

STRIPPER/CUTTERS

Klein wire strippers and cutters cut, strip, gauge and loop a wide range of wire types and sizes. Made of strong, hardened steel with comfortable handles, these tools are durable and long lasting.



11055 KLEIN-KURVE™ WIRE STRIPPER/CUTTER

Solid and Stranded. Double-dipped comfort grips with curved handles, cuts, strips, loops and gauges 10-18 AWG solid wire and 12-20 AWG stranded wire, cleanly shears 6-32 & 8-32 screws, coil spring provides fast, self-opening action. P/N 12-00235.....



11057 KLEIN-KURVE™ WIRE STRIPPER/CUTTER

Solid and Stranded. Double-dipped comfort grips with curved handles, cuts, strips, loops and gauges 20-30 AWG solid wire and 22-32 AWG stranded wire, cleanly shears 6-32 & 8-32 screws, coil spring provides fast, self-opening action. P/N 12-00236.....



11045 KLEIN 10-18 WIRE STRIPPER/CUTTER

Strips 10 to 18 AWG solid wire, easy-to-read wire gauge markings, comfortable handles with cushion ridges. P/N 12-00233.....



11046 KLEIN 16-26 WIRE STRIPPER/CUTTER

Strips 16 to 26 AWG stranded wire, easy-to-read wire gauge markings, comfortable handles w/cushion ridges. P/N 12-00234.....

KLEIN WIRE STRIPPERS 6-12



This lightweight Klein-Kurve wire strip-cutter strips large gauge 6-12 AWG stranded wire and eliminates the need for a skinning knife. The tool clearly shears 6-32 and 8-32 screws and has a serrated pliers nose, which allows the user to pull, grip, and twist wire design and double-dipped textured grips provide control and comfort. P/N 12-01456.....

63020 KLEIN-KURVE MULTI CABLE CUTTER



Designed with 3 different cutting blades; anvil cutter, a copper curved cutter & a steel cutter. Cleanly shears 6-32 & 8-32 screws, double-dipped comfort grips with curved handles, coil spring provides fast self-opening action. P/N 12-00496.....



KLEIN TOOLS CABLE STRIPPER / CUTTER

Klein Tools added its new QTR-Turn NM cable stripper/cutter with Klein-Kurve handles to its existing line of strippers and cutters. The QTR-Turn technology allows users to place cable in the upper jacket strippers, squeeze the handle, and turn one-quarter to completely sever the outer jacket. It utilizes spring-loaded action for self-opening. P/N 12-01770.....

63030 KLEIN 8-1/4" CABLE CUTTER



Cuts up to 1" diameter aluminum and copper coaxial cable, curved jaws firmly grasp cable, shear-type cutting blades, precision, one-hand shearing action. P/N 12-00497.....

CRIMPING/CUTTING TOOL



This tool is designed to crimp insulated and non-insulated 10 to 20 AWG solderless terminals & connectors. It has easy-to-read tool markings to identify the insulated or noninsulated crimping dies. Its tapered nose design works well in tight places and has specially hardened cutter in the nose for quick, clean cuts. Size: 9.75". Lifetime warranty. P/N 12-00698.....

PLIERS

Designed and built with exceptional quality standards in a tradition that dates back to 1857. Klein specializes in the making of the world's finest pliers, for the professional. What makes Klein pliers different is induction hardening of cutting edges, pliers head hardness, hot riveting and special handle hardness.



D228-8 KLEIN 8" DIAGONAL-CUTTING PLIERS - High-leverage, standard-bevel cutting knives, with hand-form style plastic-dipped handles. P/N 12-00228.....



D203-6 KLEIN 65/8" LONG-NOSE SIDE-CUTTING PLIERS - Standard cutting knives at hinge, wraps, loops, and cuts, plastic-dipped handles. P/N 12-00229.....



D203-6 KLEIN 85/16" HEAVY-DUTY LONG-NOSE SIDE-CUTTING PLIERS - Induction hardened cutting knives, greater cutting power, hot-riveted joint, plastic-dipped handles. P/N 12-00230.....



D252-6 KLEIN 6" DIAGONAL-CUTTING PLIERS - All-purpose, heavy duty, tapered nose, induction hardened cutting knives, hot riveted joints, plastic-dipped handles. P/N 12-00231.....



D202-5 KLEIN 85/16" DIAGONAL-CUTTING PLIERS - With tapered nose, standard bevel cutting knives, plastic-dipped handles. P/N 12-00232.....



5139 KLEIN CANVAS ZIPPER BAG

White canvas bag with strong zipper, convenient storage for tools, 7.5" x 12" overall size. P/N 12-00239.....



NUT DRIVERS

The professional requires a number of nut drivers in a variety of sizes and types. Klein drivers feature convenience, comfort and efficiency in use, plus exceptional strength and durability. All Klein nut drivers are made of the highest quality tempered steel, carefully heat-treated for maximum strength.

storage pouch.

631 KLEIN 7-PC. CUSHION-GRIP NUT DRIVER SET - Contains 3/16", 1/4", 5/16", 11/32", 3/8", 7/16", & 1/2" hollow-shaft nut drivers, roll-up plastic storage pouch. P/N 12-00238.....



610 STUBBY NUT DRIVERS - The #610-1/4 & #610-5/16 stubby nut drivers are designed for use in tight spaces and on hard-to-reach fasteners. The tools have cushion grip handles for greater torque and user comfort. Drivers are made for 1/4" & 5/16" hex nut and hex screw sizes. The tool shafts measure 1.5" long and overall 3.5" long. #610-1/4.....P/N 12-00694..... #610-5/16.....P/N 12-00695.....

KLEIN TIP NUT DRIVER SET 7-PC SET



Full Hollow Shaft design with Rare Earth magnetic tip. (Only with P/N 12-01594). Full hollow shafts facilitate work on long bolt applications. Cushion Grip handles allow for greater torque and comfort. Handle domes are color coded for easy identification. Internal flanges provide solid, twist-resistant shaft anchor. Chrome plated shaft helps prevent corrosion. Set contains Cat. No. 646-3/16M, 646-1/4M, 646-5/16M, 646-11/32M, 646-3/8M, 646-7/16M, 646-1/2M.

Klein nut driver 7pc. set.....P/N 12-00306..... Klein driver 7pc Magnetic Set.....P/N 12-01594.....

TO

TOOLS

KLEIN HOLE SAW KITS



Klein Hole Saws feature bimetal cobalt construction which allows for heavy-duty cutting; they can cut through studs in one pass. They also have multiple knock-out slots and holes for easy core removal. Carbide grit hole saws work well for cutting abrasive materials and offer a smooth cut with minimal tear-out.

Electrician's Hole Saw Kit -

Contains the most popular sizes for basic electrical work. Hole Saws: 7/8", 1-1/8", 1-3/8", 1-3/4", 2", 2-1/2" Arbors: 7/16" (qty.2) P/N 12-00969.....

JOURNEYMAN'S HOLE SAW KIT - The most frequently used sizes and an arbor extension for hard to reach spots. Hole Saws: 3/4", 7/8", 1-1/8", 1-3/8", 1-1/2", 1-3/4", 2", 2-1/4", 2-1/2" Arbors: 1/4", 7/16" (qty.2), arbor extension P/N 12-00970.....

MASTER ELECTRICIAN'S HOLE SAW KIT - Includes the most commonly used saws and arbors. Hole Saws: 7/8", 1-1/8", 1-3/8", 1-3/4", 2", 2-1/2", 3", 3-5/8", 4-1/8", 4-1/2" Arbors: 1/4", 7/16" (qty.2) P/N 12-00971.....

LARGE SIZE HOLE SAW KIT - Contains necessary sizes to upgrade a basic hole saw kit into a master set. Hole Saws: 3", 3-5/8", 4-1/8", 4-1/2" Arbors: 7/16" P/N 12-00972.....

KLEIN ELECTRICIAN TOOL SETS



Designed for beginner and experienced wiremen, these tool sets range in size from a basic 14-piece assortment to the 41-piece comprehensive collection. Each set contains Klein premium products, such as wire stripper/cutters, screwdrivers, and pliers, plus protective eye wear and a pouch or tool bag for toting and storage. Each set offers a cost savings when compared to buying the tools separately. Tools in Electrician sets have standard handles.

Tools in Journeyman sets have state of the art dual-material handles which provide a superior grip without sacrificing tool strength or durability.

14-Piece Electrician Tool Set.....P/N 12-00819.....
18-Piece Journeyman Tool Set.....P/N 12-00821.....
28-Piece Electrician Tool Set.....P/N 12-00820.....
41-Piece Journeyman Tool Set.....P/N 12-00822.....



KEARNEY SWAGER

This portable, hand-operated roll type swaging machine will swage MS type terminals onto galvanized and stainless steel cables from 1/16" diameter up to and including 3/16" diameter. Includes machine, a full set of roll dies, terminal gauges and feed guide adapters & instructions in a steel carrying case. Wt. 95 lbs. New manufacture. All replacement parts available. Special order P/N 12-01188.....

FLYING WIRE TENSIONER



This tool is used for setting the tension on flying wires from 1/4" - 1/2". Tension ranges from 200 lbs. to 2400 lbs. Can also be used for setting drag, anti-drag wire tension. Ideal for use on Stearmans, Wacos, and Pitts, etc. To use this tool you will need a torque wrench. P/N 12-12500.....

SOFT JAW PLIERS



This new tool is suitable for loosening and tightening threaded locking collars of electrical connectors without marring the gripping surfaces of the collars. Excellent for use on AN and MS connectors, plated pipe and fittings, plastics, glass and ceramics. The soft jaws will not crack or chip plating. Ideal for rod, tube or sheet. Grip Range: 3/4" to 2-1/2" dia. Made from heat-treated steel with black oxide finish. Meets government. Specs. American Made. P/N 12-16800.....

GREASE JOINT REJUVENATOR - PROFESSIONAL MODEL



Have you ever tried to push grease in through a grease fitting and couldn't? The Grease Joint Rejuvenator opens clogged grease joints and fittings effortlessly in less than a minute!

- Opens clogged grease fittings & joints
- Cleans and replenishes old and dirty grease fittings
- Loosens dried grease in joints
- Cleans ways and stays in milling machines and lathes
- Lubricates bearings on farm, lawn & construction equipment.

How it works: Remove the piston end and fill the tool with penetrating oil. Then place the end over the grease fitting and tap on the piston head with

a hammer until it starts to move down into the tool body. The hydraulic pressure created by tapping on the piston forces the penetrating oil into the grease joint where the blockage is and loosens the old hardened grease (or dirt), flushing the blockage and clearing the way for new grease

Grease Joint Rejuvenator (Pro Model).....P/N 12-01038.....

COMPRESSION WHISTLE ALERT



No more burning your fingers and hands! Just Listen! Insert Whistle Alert™ into any 14mm spark plug hole and bump the engine until you hear the whistle. You are now on the compression stroke!

- Easily find Top Dead Center compression stroke
- Turn engine over from inside the car and listen for the whistle.
- Made of steel and aluminum
- Made and assembled in the USA.

Whistle Alert (Rigid).....P/N 12-01039.....
Whistle Alert (Flex).....P/N 12-01041.....

ENGINE CALIBRATION & SET-UP KIT



The Engine Calibration & Set-up Kit gives you innovative tools that help eliminate mistakes when setting up mechanical engine timing sequences, timing chains, timing belts, balance shafts and belts, distributor installations and general engine set-up.

- Kit includes: •Standard 6" (14mm) and Extended 10.75" (14mm) •TDC Indicators
- Compression Gauge Extension
 - Compression Whistle Alert™
 - Crank Stopper
 - 18mm & 12mm Spark Plug Hole Adapters, extra nipple for compression tube to whistle conversion.

Engine Calibration & Set-Up Kit..... P/N 12-01040.....

TO

STEELMAX POWER TOOLS - 3M™ SANDERS

STEELMAX METAL CUTTING SAW 9 INCH



More efficient than any portable metal cutting process you are using now! • Increase Productivity - No Milling or de-burring with near surgical dry-cut technology. • Cuts a Variety of Metals, Plastic and Wood - Bring your saw to the work-piece while cutting mild steel, stainless steel and aluminum as easy as it cuts plywood. • Cool-to-the-Touch - No waiting for your work-piece to cool down. Just cut it and handle it. • Precise Cutting - With integrated laser sighting system. P/N 12-01716

| Accessories | Teeth | Arbor | Part No. | Price |
|--------------------------|-------|-------|----------|-------|
| 9" Mild Steel Blade | 48T | 1.0" | 12-01803 | . |
| 9.25" Mild Steel Blade | 48T | 1.0" | 12-01804 | . |
| 9" Stainless Steel Blade | 80T | 1.0" | 12-01805 | . |
| 9" Thin Steel Blade | 80T | 1.0" | 12-01806 | . |
| 9" Aluminum Blade | 80T | 1.0" | 12-01807 | . |

STEELMAX DRYCUT SAW S14



Utilizing a 14" carbide tipped blade, the Steelmax S14 cuts through metal faster, safer and cleaner than abrasive chop saws in a fraction of the time and cost. Powered with a 15 amp motor and geared to turn slower than a chop saw, the S14 dry cutter cuts like a cold saw, but at a fraction of the cost. Sold standard with a 14" carbide tipped mild steel blade attached, heavy duty, industrial strength cast iron base and two position locking vise, this saw is ready for immediate action! Cuts solid mild steel up to 1" thickness; cut profiles: pipe, angles, channel with a depth of cut up to 4-3/4". Bevels to 45 degrees. Saves time and money giving cool cuts that need little to no finishing, eliminating any need for grinding or cool down time. P/N 12-01717

| Accessories | Teeth | Arbor | Part No. | Price |
|--------------------------------------|-------|-------|----------|-------|
| 14" Mild Steel (Less Than 1") | 66T | 1.0" | 12-01808 | . |
| 14" Stainless Steel (Less Than 1/4") | 90T | 1.0" | 12-01809 | . |
| 14" Thin Mild Steel (Less Than 1/4") | 90T | 1.0" | 12-01810 | . |

MAGNETIC BASE DRILL



SteelMax® brand drills maintain rigidity and accuracy throughout the life of the drill. The rail system eliminates the need to adjust or maintain traditional gibs. In addition to saving on maintenance, cutter life is increased by reducing movement at the cutter tips. When cutters last longer, you save money every day you use SteelMax!

Magnetic Base Drill.....P/N 12-01718
 Portable Magnetic DrillP/N 12-01811

CUTTERS FOR MAGNETIC BASE DRILL

| Dia. | D.O.C. | Part No. | Price | Dia. | D.O.C. | Part No. | Price |
|---------|--------|----------|-------|---------|--------|----------|-------|
| 7/16" | 1" | 12-01813 | . | 1/2" | 2" | 12-01834 | . |
| 1/2" | 1" | 12-01814 | . | 9/16" | 2" | 12-01835 | . |
| 9/16" | 1" | 12-01815 | . | 5/8" | 2" | 12-01836 | . |
| 5/8" | 1" | 12-01816 | . | 11/16" | 2" | 12-01837 | . |
| 11/16" | 1" | 12-01817 | . | 3/4" | 2" | 12-01838 | . |
| 3/4" | 1" | 12-01818 | . | 13/16" | 2" | 12-01839 | . |
| 13/16" | 1" | 12-01819 | . | 7/8" | 2" | 12-01840 | . |
| 7/9" | 1" | 12-01829 | . | 15/16" | 2" | 12-01841 | . |
| 1" | 1" | 12-01831 | . | 1" | 2" | 12-01842 | . |
| 1-1/16" | 1" | 12-01832 | . | 1-1/16" | 2" | 12-01843 | . |
| 7/16" | 1" | 12-01833 | . | | | | |

| Accessories for Base Drill | Part No. | Price |
|---|----------|-------|
| 1" Center Pin For SM4374 | 12-01845 | . |
| 1" Center For 1" DOC Cutters | 12-01844 | . |
| 2" Center Pin For SM437L Only | 12-01847 | . |
| 2" Center For 2" DOC Cutters | 12-01846 | . |
| True Blue Concentrate Cutting Fluid - Quart | 12-01852 | . |

1/2 INCH CHUCK & ADAPTER



With this optional industrial arbors and 2MT-1/2" Drill Chuck now you can! SteelMax industrial arbors let you easily adapt our premium m2AL cutters to a variety of machinery, including CNC, lathe's, stationary drill presses and similar equipment. With our integrated coolant collar, cutter performance and cutter life is assured! P/N 12-01812

6 AND 13 PIECE CUTTER SETS

| Description | Includes | Part No. | Price |
|---------------------|---|----------|-------|
| 6 Piece Set 1" DOC | 9/16", 11/16", 13/16", 15/16", 1-1/16", Cutter Case, and 1" Pilot 9/16"-1-1/16" | 12-01848 | . |
| 6 Piece Set 2" DOC | 9/16", 11/16", 13/16", 15/16", 1-1/16", Cutter Case, and 2" Pilot 9/16"-1-1/16" | 12-01849 | . |
| 13 Piece Set 1" DOC | 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 13/16", 7/8", 15/16", 1", 1-1/16", Cutter Case, and 1" Pilot 7/16", 1" Pilot 9/16"-1-1/16" | 12-01850 | . |
| 13 Piece Set 2" DOC | 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 13/16", 7/8", 15/16", 1", 1-1/16", Cutter Case, and 1" Pilot 7/16"-1/2", 1" Pilot 9/16"-1-1/16" | 12-01851 | . |

3M™ ORBITAL SANDERS



Authorized Dealer




The all new line of 3M™ air-powered finishing tools includes innovations designed to optimize performance and productivity. 3M™ Tools are designed for smooth operation, and are packed with horsepower. Multiple grip sizes are designed to provide advanced operator comfort, and color-coded levers allow for easy orbit identification.

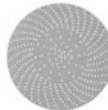
RANDOM ORBITAL SANDERS



The 3M's NEW dust management system featuring Clean Sanding Abrasives and Accessories is revolutionizing the dust evacuation process. Discs are designed to cut more and last longer. The patented multi-hole pattern captures and remove more dust compared to 5- or 6-hole products.

| Model | Tool Dia. Inch (mm) | Vacu-um | Orbit Dia Inch | Max RPM | Motor HP (W) | Airflow Rate SCFM (LPM) | PN | Price |
|-------|---------------------|---------|----------------|---------|--------------|-------------------------|----------|-------|
| 20316 | 3"(77) | Yes | 3/32" | 12,000 | 28(209) | 17(481) | 05-03482 | . |
| 20319 | 5"(127) | Yes | 3/16" | 12,000 | 28(209) | 17(481) | 05-03483 | . |
| 20314 | 3"(77) | No | 3/32" | 12,000 | 28(209) | 17(481) | 05-03485 | . |
| 20317 | 5"(127) | No | 3/16" | 12,000 | 28(209) | 17(481) | 05-03484 | . |

| Accessories | PN | Price |
|---|----------|-------|
|  Clean Sanding Filter Bag | 05-03486 | . |



3M™ CLEAN SANDING 236U DISCS

An aluminum oxide Hookit™ disc with precise hole design for improved dust extraction constructed on a C weight, intermediate paper backing. CW Array Hole Pattern.

| Model | Part No. | Price | Model | Part No. | Price |
|--------|----------|-------|--------|----------|-------|
| 6"P120 | 05-03576 | . | 3" P80 | 05-03585 | . |
| 5"P500 | 05-03577 | . | 3"P500 | 05-03586 | . |
| 5"P400 | 05-03578 | . | 3"P400 | 05-03587 | . |
| 5"P320 | 05-03579 | . | 3"P320 | 05-03588 | . |
| 5"P240 | 05-03580 | . | 3"P240 | 05-03589 | . |
| 5"P220 | 05-03581 | . | 3"P220 | 05-03590 | . |
| 5"P180 | 05-03582 | . | 3"P180 | 05-03591 | . |
| 5"P150 | 05-03583 | . | 3"P150 | 05-03592 | . |
| 5"P120 | 05-03584 | . | 3"P100 | 05-03594 | . |

AVIATION MECHANICS GLOVES



Researched, developed and designed by aviation engineers, this mechanics glove is your best choice for comfort, dexterity, and wear. Excellent for aircraft mechanics or for using during preflight inspections. These gloves are not flame proof or fire retardant; do not wear while draining or exposure to open flame. Available in black and blue. Wt: 6oz.

Main Features:

- Cuff made of neoprene, provides extra support, flexibility, impact protection and comfortable fit
- Two-way breathable stretch spandex, provides an extremely comfortable and snug fit.
- Knuckle panel protection made of neoprene for impact protection, comfort and to guard against scrapes and abrasions.
- Precision cutting and quality of fingertip seams ensure enhanced fingertip sensitivity.

| Color | Size | Part No. | Price | Color | Size | Part No. | Price |
|-------|-------|----------|-------|-------|-------|----------|-------|
| Blue | Med. | 13-04741 | . | Black | Large | 13-04744 | . |
| Black | Med. | 13-04742 | . | Blue | XL | 13-04745 | . |
| Blue | Large | 13-04743 | . | | | | |

TO

CABLE CUTTERS - SWAGERS

FELCO CABLE CUTTERS

A cable when crushed or deformed is difficult to use with fittings. These fine quality Swiss made cutters, with unique triangular jaws, never leave a frayed end.



#C-7F CUTTER - Capacity 3/16" diameter and smaller. Length 8". Wt, 10 oz.
P/N 12-01135



#C-9 CUTTER - Cuts 1/4" steel cable
P/N 12-00179



#C-12 CUTTER - Capacity 3/8" diameter and smaller. Length 19". Wt. 3 lbs.
P/N 12-01174

#C2A CUTTER - Snub nose for loose cuts. 10% harder blade than C7 for long life and cutting of very hard wire or cable. Opening of tool cuts up to 2mm wire & stranded cable. P/N 12-00223



S & F CABLE CUTTERS

A fine tool made from high quality alloy steel and heat treated for best cutting action and long life of cutting edges. Handles shaped for comfortable grip and minimum cutting effort. Max. capacity 3/16" dia. 1 x 19 cable.

No. 316 Cable Cutter.....P/N 12-18600

BENCH MOUNT FOR #316 CABLE CUTTER

This bench mount adds to the versatility of the #316 cable cutter. Mounts with 2 screws to a bench or plate. Fingers can still grip the tool. Easy removed. P/N 12-00674



S & F HARD WIRE CUTTER

These quality cutters feature a unique handle design with thick "T" shaped vinyl handle grips for maximum comfort while cutting. Cuts 3/32" maximum diameter music wire, heat treated steel spring wire, stainless or galvanized cable. Produces clean square cuts. Gold iridite finish for maximum rust protection. Length: 6". Wt. 7 oz.
Model No. 093..... P/N 12-18605



CABLE TENSIO METER

This precision instrument gives accurate readings over a wide range of cable tensions. No preliminary adjustments are necessary. May be used continuously without resetting or checking. Extreme heat or bitter cold does not affect the accuracy of the readings. One instrument is usable on many cable sizes with absolute accuracy. The small size permits entry through small openings and permits accurate readings on cable located in confined areas. The entire operation of testing cable tensions can be done with one hand in a matter of seconds. Range in Lbs.: 10-100 on 1/16", 3/32", 1/8"; 15-150 on 5/32", 3/16"; 25-150 on 7/32", 1/4" T5-2002-101-00



BURROUGHS CABLE GAUGE

Easy to use - just squeeze ball handle, put gauge on cable, release handle and read tension on rotation dial. No conversion charts necessary. Tension range: 10-70lbs. for 1/16" cable, 15-70 lbs. for 3/32 & 1/8" cable. 50-350 lbs. on 5/32" & 3/16" cable. Only 3-1/4" wide. Fits through inspection hole. For 1/16", 3/32", 1/8"P/N 12-19200

For 5/32", & 3/16".....P/N 12-19210

TENSITRON CABLE TENSION METERS



Standard Features of all models: • Easy one-hand operation • No interchangeable parts are needed to adapt to different cable sizes • Memory Lock Pointer holds readings until cleared • Calibration chart affixed to back of meter • Durable and made of non-corrosive materials • Weigh approximately 21 oz. Compact design allows engagement of meter onto cables closely routed along floors, flat surfaces and other minimum clearance areas. Models ACM-100, ACM-200, ACM-300, ACM-400 are compact enough to allow use in limited access panels as small as 4" dia.

| Model | Part No. | Price |
|---|----------|-------|
| ACM-100 - Designed to measure from 5-100 lbs tension in 1/16", 3/32", 1/8", 5/32" diameter cables. | 12-01050 | . |
| ACM-200 - Designed to measure 20-200 lbs tension in 1/16", 3/32", 1/8", 5/32", 3/16", and 1/4" diameter aircraft cables. | 12-01051 | . |
| ACM-300 - Designed to measure from 40-300 lbs tension in 3/32", 1/8", 3/16" and 1/4" diameter standard cables. | 12-01052 | . |
| ACM-400 - Designed to measure from 40-400 lbs tension in 3/32", 1/8", 5/32" and 3/16" diameter standard cables. | 12-01053 | . |
| ACM-600 - Measures tension from 40-600 lbs in 1/8", 5/32", 3/16" and 1/4" diameter aircraft cables. | 12-01362 | . |

ECONOMY SWAGING TOOLS

NO. 2 SWAGE-IT - For use with sleeves for 1/16", 3/32" and 1/8" cable. Swaging pressure applied by using a wrench to tighten bolts. Size: 1/2" x 1" x 7". Wt. 1 lb. Cadmium plated. P/N 12-12000



NO. 3 SWAGE-IT - For use with sleeves for 1/8", 5/32", 3/16" and 1/4" cable. Same design as No. 2 tool but larger. Size: 3/4" x 1-1/2" x 14". Wt. 3-1/2 lb. P/N 12-12100



SWAGE-IT RIGGING KIT

This Swage-It rigging kit contains everything you will need for rigging and emergency repairs of Nicopress sleeves on cables. Includes the #2 Swage-It tool for 1/16", 3/32" and 1/8" sleeves, 1/2" extension wrench for use on the #2 tool and a #316 cable cutter. Size: 4-1/2" x 9". Packaged in a clear plastic tube with vinyl caps to better protect tools. P/N 12-12200

LOCOLOC NO. 1-SC SWAGER



No. 1-SC Hand Swager - Multi-compression hand swager with cable cutter. Swages 1/16", 3/32", 1/8", 5/32", and 3/16" oval and stop sleeves, plus 7/32 stop sleeves, for a total of 11 sizes plus the ability to cut up to 7/32" diameter aircraft quality steel cable. A tool with a dozen functions. 26 inches long, weighs 6.5 pounds. P/N 12-12400

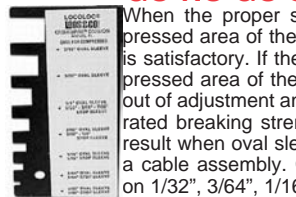
LOCOLOC HANDSWAGING TOOL



LocoLoc #1-3-SBHS Hand Swager - This tool is an outstanding small hand tool, and it does a great job of swaging small sleeves. This is a (4) cavity tool, swaging sleeve sizes 1/32", 3/64", 1/16", 3/32" and #12 SEISMIC.

Ratchet mechanism will not release until swage is complete. Swages copper and aluminum sleeves only. Usage instructions and swage gauge included in each tool. Each LOCOLOC Swager is supplied with a gauge. Application: Copper Oval Sleeves, Copper Oval Plated Sleeves and Aluminum Oval Sleeves P/N 12-00222

GO-NO GO SLEEVE GAUGE



When the proper slot in the gauge slips over the compressed area of the sleeve after swaging then your swage is satisfactory. If the proper slot does not fit over the compressed area of the sleeve after swaging then your tool is out of adjustment and your cable assembly will not hold the rated breaking strength of the cable which should be the result when oval sleeves are used to form a loop or eye in a cable assembly. GA-1P: Gauges all swages performed on 1/32", 3/64", 1/16", 3/32", 1/8", 5/32", and 3/16" oval and stop sleeves. P/N GA-1P

TENSITRON ACX-SERIES DIGITAL AIRCRAFT CABLE TENSION METER

* Indicate Cable Tensions in Lbs, KG, or Newtons.
* Small space access. One-hand operation. Memory storage features.
ACX Screen Callouts :Display shows tension, battery charge level, name of calibration selected, and stores and displays up to 5 separate tension readings and their average. * Large, easy to read backlit, graphic display with adjustable backlighting and contrast. * Select cable size from menu. Instrument automatically adjusts calibration to correct setting. * Accuracy is +/- 2% full-scale for all menu-selectable calibrations. Accuracy for custom calibrations is material specific. * Up to 10 calibrations can be entered into instrument. (All calibrations password protected to provide due diligence). * Adjustable LCD refresh rates allow for stable digital readings. * All models factory-calibrated and ready for use on aircraft. * Calibration values traceable to National Standards. Calibration certificate included.

Input Real-Time Serial Data into any Windows® application using any number of software wedge programs, such as WinVedge Pro® for Windows, or configure your Windows® operating system to capture the data via HyperTerminal®.

| Model | Range | Res. | Cable Selections | Part No. | Price |
|---------|------------|--------|--|----------|-------|
| ACX-100 | 5-100 lbs | 0.5 lb | 1/16", 3/32", 1/8", 5/32" | 12-02103 | . |
| ACX-250 | 20-250 lbs | 0.5 lb | 1/16", 3/32", 1/8", 5/32" | 12-01549 | . |
| ACX-500 | 40-500 lbs | 1 lb | 3/32", 1/8", 5/32" | 12-01052 | . |
| ACX-CWT | 20-250 lbs | 0.5 lb | CWT-5,CWT-10, CWT-15,CWT-20,CWT-25 | 12-02104 | . |
| ACX-CMB | 20-250 lbs | 0.5 lb | 1/16",3/32", 1/8",5/32", CWT-5 thru CWT-25 | 12-02105 | . |

TO

SPECIALTY TOOLS - DEBURRING TOOLS



THE GRIPPER - ALL DIGITAL CABLE TENSIO METER

There are no extra parts to worry about. The Gripper can adapt to 5 Cable sizes 1/16, 3/32, 1/8, 5/32, and 3/16. From 5 to 150lb's. 1%-2% Accuracy. An instrument that will pay for it self quickly. The time savings compared to your current tool will amaze you. Electronically measured readings, assures accurate, reliable and repeatable measurements every time you use the "Gripper". The Gripper heads small size (1 1/8" square by 4 1/8" long) lets you access tight areas as it will go where other just will not go. It comes to you calibrated and ready for use. **Features:** • Unique Remote Head Fits in to tight areas • Backlit Controller for easy reading. **Specifications:** • Cable sizes: 1/16, 3/32, 1/8, 5/32, and 3/16. • From 5 to 150lb's • 1%-2% Accuracy
P/N 12-01722.....



DEBURRING TOOL

Utilizes a twist-of-the-wrist action for deburring holes and radii. Curved blade automatically follows all contours. Telescoping blade holder extends to reach deep internal holes. Supplied with one #10 and one #20 deburring blade.
P/N 12-00700.....

| Item | Description and Application | P/N | Price |
|--------------------------|--|----------|-------|
| #10 Deburring Blade | High-speed steel. For steel, aluminum & smaller holes | 12-00800 | . |
| #20 Deburring Blade | High-speed steel. For brass, Bronze, cast iron, larger holes. | 12-00900 | . |
| #40 Scraper Blade | High-speed steel. Small triangular blade. | 12-01000 | . |
| #42 Scraper Blade | High-speed steel. Large triangular blade. | 12-01100 | . |
| #48 Scraper Blade Holder | Holder has 10-32 threads. Accepts #40 & #42 blades. Extends to 3-1/2". | 12-01200 | . |
| #50 Scriber | Carbide-tipped scriber. | 12-01300 | . |
| #60 Deburring Blade | For backside deburring & for restricted positions | 12-01400 | . |
| #70 Deburring Blade | Carbide-tipped blade for deburring edges of sheet metal. | 12-01500 | . |



SPEEDY BURR

Speedy Burr is designed to take the fatigue out of deburring. The wrist support makes the job easier. This tool is great for deburring spars and extrusions. The light weight, aluminum, hand-grip formed frame is comfortable and helps to maintain continuity in angle and depth of deburr. The wrist support is rubber lined to prevent skin abrasion.
P/N 12-00650.....



SPEEDY BURR II

Speedy Burr II is designed for deburring outside corners, sheet metal, machined parts, extrusions, castings, and plastic parts. This lightweight easy grip tool has a durable plastic coating on the handle for comfort and a sure grip. The burring tip is made from hardened steel and is replaceable.
Speedy Burr II..... P/N 12-00651.....
Replacement Burr Tip..... P/N 12-00652.....

COMPASS FILLING AID



The compass filling aid is designed to be used for filling most standard aircraft compasses. The standpipe is simply attached to the compass with a supplied special rubber band. The compass is then filled and purged through the standpipe. When all air is removed, and the level in the standpipe is constant, the plug is then installed through the filled standpipe. Thus the need for submerging for proper filling is eliminated.
P/N 12-17604.....

TURNBUCKLE WRENCH CABLE RIGGING



This tool consists of two clamps joined by a 12" length of sprocket type (bicycle) chain. It will accommodate all sizes of aircraft cable. When clamped to cable and fittings at each side of the turnbuckle, anchor the cable to allow free adjustment of the turnbuckle. The adjustment becomes a two hand instead of three hand adjustment.
P/N 12-00833.....

CESSNA COWLING FASTENER DRIVER



Slotted type cowling fasteners are not easy to fit with generic common screwdrivers. To overcome this, driver has a broad hollow cut tip that accurately engages the drive slot. Additionally, a no mar, spring loaded, plastic sleeve simultaneously guides the tip by fitting around the outside diameter of the fastener head.
P/N 12-17615.....

CESSNA SEAT RAIL GAGE



Allows for quick limit checking of seat rail hole and wear dimensions Gage elements are made from heat treated blue tempered steel Each element is marked to correspond to the limits set forth in the relevant ad The three gage elements are linked together on a universal spiral key ring.
P/N 12-01056.....



PORTABLE STRUT / TIRE PUMP

This pump is constructed of aluminum and nylon. It's overall dimensions are 29.5" (750 mm) long, with a body of approximately 1" diameter and a "T" handle and base 8" (200 mm) long. It weighs 1.65 lb (.75 kg), has a nylon hose with 2000 P.S.I. burst pressure and a strut valve fitting on the end that doesn't depress the valve so that no pressure can escape from the strut. The pump is capable of pumping up to 650 P.S.I. without any compressed air required for the inlet, which is more than adequate for most light aircraft, e.g.: Piper Cherokee PA28-235 needs 450 P.S.I. for the main struts with the weight of the Aircraft on the strut. The pump can also be used as a tire pump as a backup. The main use for the strut pump is for the individual aircraft owner that operates from remote areas and don't have access to a compressor, however they are popular with maintenance organizations as well. The pump is small and light enough to fit in the luggage compartment and have with you all the time ready for that moment when your Oleo goes flat.
P/N 12-16714.....

enough to fit in the luggage compartment and have with you all the time ready for that moment when your Oleo goes flat.



HX STRUT PUMP

Boost air to 1000psi without an air compressor.

- Very portable. No air compressor needed!
- Use air bottle, spare tire, tire pump for source air.
- Can also use with air compressor for air source.
- Detailed instructions.
- Equipped with 7 foot hose

P/N 12-16710.....

15X STRUT PUMP



Boost air or nitrogen to 2250psi.

- More than enough pump for most aircraft.
- Built for shop use or for a discriminating do-it-yourselfer.
- Weighs less than 7 pounds.
- Equipped with a 36" hose.
- Comparable to pumps priced in the thousands.
- Nitrogen adapter makes it easy to use bottled nitrogen.

15X Strut Pump..... P/N 12-16700.....
Nitrogen Adapter Kit..... P/N 12-02016.....



TO

WORK LIGHTS - INSPECTION MIRRORS

CONDUCT-A LITE INSPECTION KIT



Kit consists of aluminum 2-cell holder, 1-cell holder for use in small areas, 6" straight Lucite conductor, 4" curved Lucite conductor for lighting around corners, 2-1/2" straight conductor for pin-point lighting, and clip on mirror which attaches to any of the Lucite conductors. When used with curved conductor it can virtually make light available around a corner in a full 360° arc. Operates on penlight batteries (not included). P/N 12-14900

FLUORESCENT WORK LITE

Lights a greater area than a 150 W bulb for 1/10 the electricity. Throws a glare-free light. Hold it or hang it. Cool, insulated, shatter-resistant. Does not get hot - safe to handle. For 110V AC. Furnished with 25-ft. yellow oil-resistant cord. P/N 12-00909



FLEXIBLE MICROLIGHTS

This Super-Bright Micro 360 Flexible LED Light is 10 times brighter than standard flashlights and lasts up to 100 hours on a single set of batteries! Features: •Stainless Steel • Lifetime Warranty • Focused lens power beam • Shock proof, water resistant and cold burning • LED-"Light-Emitting Diode" • White beam • 100 hours of light without a battery change • Diode-charge system • Easy on/off-switch • 6" in length • Batteries included. Micro Flex P/N 13-02846 Mega Flex P/N 13-02847



PILOT'S FLEX-LITE

This ingenious light puts a shadowless light beam wherever you want it. Stainless steel clip, visor, interior panel, shirt pocket, etc. and leaves your hands free. Flexible neck bends into nearly any position and stays there. Anodized aluminum construction with vinyl covered flexible cable. Body of light measures 5.5" with a 6" cable. Uses two AA batteries (not included). This light is the only light available with a precision ground optic lens for even light distribution. Available in a clear or red lensed model.



Clear.....P/N 12-00383 Red.....P/N 12-00521

HEADLIGHTS

The Brighteyes Pro Headlights is a hands-free flashlight worn like eyeglasses to provide light for reading maps, instruments, repair work, and more. Excellent for work on aircraft, automotive applications, around the house, camping, & fishing. Headlights can be used with or without eyeglasses, and the lights will swivel to direct the light where you need it. (4) AAA batteries included. P/N 12-00242



BEND-A-LIGHT

Bend-A-Light flexible brass-alloy high intensity light tools bend to any configuration and illuminate hard-to-reach areas where conventional lighting cannot go. The incredibly brilliant light beam penetrates anywhere! Bend-A-Light is a must for electronics, automotive, maintenance, repairs, locksmiths, industrial, hobbies, around the house and more. You bend it...and it holds! Bend-A-Light is the only complete line of professional quality high intensity flexible light tools. Available in 3 lengths and 3 different lamps to choose from. All Bend-A-Light models are made in USA and come with batteries installed.



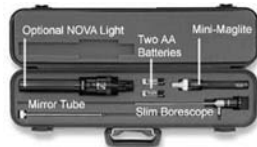
| Part No. | Description | Length Flex Shaft | Length Overall | Batt. | Bulb | Price |
|----------|-----------------|-------------------|----------------|-------|-------|-------|
| 12-15005 | Mini Pro | 6" | 11.5" | 2-AAA | 12100 | . |
| 12-15150 | Pro | 15.75" | 24" | 3-AA | 12110 | . |
| 12-10250 | Removable Shaft | 9.5" | 15.75" | 2-AA | 12100 | . |

| Part No. | Description | Dia | Bulb Life | Price |
|----------|--------------------------|-------|-----------|-------|
| 12-15020 | 12100 - Replacement Lamp | 5/32" | 4 Hours | . |
| 12-12110 | 12110- Krypton Lamp | 5/32" | 20 hours | . |

HAWKEYE PRECISION FLEXIBLE BORESCOPIES

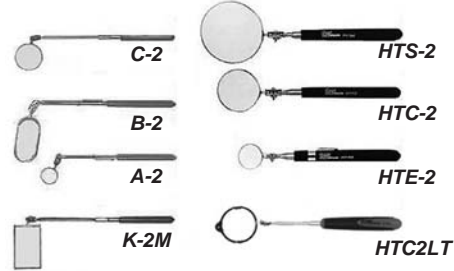
Hawkeye precision borescopes feature the patented endoGRINS lens system for superior optical quality. The eyepiece can focus on an object from 0.280" (7mm) all the way to infinity at a maximum magnification of 120X. Kit includes the borescope, a high intensity Mag-Light flashlight, a SideWays™ 90° mirror for viewing at right angles, and a cleaning kit.

7" Hawkeye Hardy Kit P/N 12-00337 12" Hawkeye Hardy Kit P/N 12-00338



NOTE: ALL BORESCOPIES ARE NON-RETURNABLE

INSPECTION MIRRORS AND MAGNIFYING MIRRORS FOR ALL-ANGLE VIEWING



Double ball-joints of tempered spring steel move freely, hold desired position for viewing to 360°. Mirrors have brushed stainless steel backs and insulating vinyl grips. Refill mirrors available.

| Description | Size | Length | P/N | Price |
|--|-----------------|------------------|----------|-------|
| A-2 Circular Pocket mirror | 7/8" Dia. | 7.5" | 12-01080 | . |
| A-2M Circular Magnifying Pocket mirror | 7/8" Dia. | 7.5" | 12-01081 | . |
| B-2 Oval Pocket mirror | 1" x 2" | 8.5" | 12-01169 | . |
| C-2 Circular Telescoping Mirror | 2-1/4" Dia. | 10" to 14" | 12-01175 | . |
| C-2M Circular Magnifying Telescoping Mirror | 2-1/4" Dia. | 10" to 14" | 12-01176 | . |
| K-2M Rectangular Magnifying Telescoping Mirror | 2-1/8" x 3-1/2" | 11.25" to 14.25" | 12-01152 | . |

| Description | P/N | Price |
|---|----------|-------|
| HTE-2 with 1.25" mirror for viewing in tight areas telescopes from 6.5" to 35" | 12-01090 | . |
| HTC-2 with 2.25" mirror for viewing in less restricted areas telescopes from 6-1/2" to 36-3/8" | 12-01089 | . |
| HTS-2 with 3.25" mirror for brightest clearest viewing with room to maneuver telescopes from 6.5" to 36-3/8" | 12-01091 | . |
| HTC-2LT with 2.25 LED case illuminates darkened areas - two lithium batteries included. All-angle ball joint holds lighted mirror head firmly for perfect viewing textured cushion grip will not slip in wet or oil hands. Stainless steel handle telescopes from 6-3/4" to 37" | 12-01979 | . |

THE INSPECTOR ADJUSTABLE LIGHTED INSPECTION MIRROR

No more trying to aim a flashlight at the old style mirror. Inspector is a one-hand tool that comes with a very bright light that illuminates the total inspection area. Easy to adjust the mirror angle. Once inserted into the inspection area, simply push or pull the thumb knob for a 90° mirror angle adjustment. The product is constructed of non-conductive materials for safety. The mirror, lamp, and 2-AA batteries (included) are easily replaceable.



Inspector P/N 12-15105 Inspector Replacement Lamp P/N 12-15110 Inspector Replacement Mirror P/N 12-15115

BINOCULAR MAGNIFIERS

The Binocular Magnifiers offer powerful, crisp magnification of your detailed projects while simultaneously leaving both of your hands free to work. The ground and polished optical lens is mounted to a tilt-up frame, allowing you to disengage the magnifier without removing the entire assembly from your head. This item is equipped with a cushioned headband which rests as comfortably as a baseball cap and is likewise adjustable for a snug fit.

Features: • 1.75x magnifying lens. • Great for assembly and inspection applications. • Used commonly by toolmakers, machinists, engravers, jewelers and hobbyists. • Leaves hands free to work. • Tilt-up lens frame instantly removes magnifying lens from sightline. • Ground and polished optical lens eliminates eyestrain. • Fits over prescription glasses. • Adjustable, cushioned headband for comfort fit. 14" focal length.

| Description | Power | Focal Length | Part No. | Price |
|----------------------|-------|--------------|----------|-------|
| Binocular Magnifiers | 1.75X | 14" | 950-3 | . |
| Binocular Magnifiers | 2.25X | 10" | 950-5 | . |
| Binocular Magnifiers | 2.75X | 7" | 950-7 | . |

TO

INSPECTION SCOPES

VISUAL OPTICS VIDEO STICK



Visual Optics new video based inspection scope, the VS36-10WW, gives you the latest in remote video technology.

The Video Stik is for remote inspection of areas generally inaccessible to the naked eye. IT comes with a distal video camera at the end of a 36" shaft for internal inspection of engines, A/C systems, interior structures of walls, and other industrial and simi liar applications. Imaging and illumination is provided by a full color image sensor and dual solid state LEDs which are controlled by an on/off rocker switch. The 2.5" full color LCD screen allows the user to observe live video from the distal camera. The unit is powered by 4-AA batteries. The Video Stik is shipped with a protective case for storage. Accessory Mirror allows user to see 90 degrees to axis of the shaft. The Magnet accessory will pick

up approx 1/4 lb.

Features:

- High resolution remote color camera
- 2.5" full color viewing monitor
- 10mm shaft diameter
- Waterproof, Flexible shaft
- 36" standard shaft length
- High output LED illumination
- 5 hrs operation on 4-AA batteries (included)
- Mirror and Magnet accessories included
- Video Output for recording
- Poly pro storage case

Specifications:

- Shaft Length: 36" Water Resistant
- Distal Tip Dia: 0.42" Maximum
- W/ Accessories: 0.46 Maximum
- Viewing Angle: 55 Degrees
- Viewing Distance: 0.4" to Infinity
- Resolution: 320x240 pixels
- Viewing Monitor: Color 2.5" LCD
- Video output: RCA - NTSC signal
- Shaft Radius: 2.5" Minimum
- Power: Alkaline AA batteries (4)
- Battery Life: 4hours
- Storage Temp: -4F to 158F (-20 to +70)
- Operating Temp: 32F to 113F(0 to 45)
- Accessories: Mirror and Magnet
- Warranty: 1 Year

P/N 12-01744

VT-FLUV & VT-FLED SERIES SCOPES



Features:

- Highly detailed imaging with 7400 pixels
- Compact Design
- Superior optics provide easier viewing
- Waterproof shaft
- Petroleum & Chemical Resistant
- Viewing range, 40 degree - 1/2 inch to infinity
- Highly affordable

VT-FLED SERIES - Visual Optics has engineered and manufactured the next step in the evolution of the fiber optic bore scope. Their creation of the VO FLED Series Fiber Scope has raised the bar in the areas of optical quality, image light output, shaft control and material tolerance. The VO Series Fiber Scope achieves industrial level quality at an affordable price.

| Model | Length | Diameter | Includes | Part No. | Price |
|------------|--------|----------|--|----------|-------|
| VT24-4FLED | 24" | 4mm | Inspection Scope, Battery, White LED Flashlight, Mirror, Magnet & Suitcase Style Carrying Case | 12-01739 | . |
| VT24-6FLED | 24" | 6mm | | 12-01740 | . |

VT-FLUV SERIES - All VT Series Scopes (4.3MM or 6MM) can now be purchased with LEAK DETENTION CAPABILITIES. Exchanging the White Light LED flashlight with a UV Flashlight does this. The UV Flashlight will Fluoresce Leak detection dyes. The Kits (referred to as - FLUV) come complete with both flashlights. The VO FLUV Series Fiber Scope has raised the bar in the areas of optical quality, image light output, shaft control and material tolerance.

| Model | Length | Diameter | Includes | Part No. | Price |
|------------|--------|----------|---|----------|-------|
| VT24-4FLUV | 24" | 4.3mm | Inspection Scope, Battery, White LED Flashlight, UV Flashlight, Mirror, Magnet & Suitcase Style Carrying Case | 12-01741 | . |
| VT24-6FLUV | 24" | 6mm | | 12-01743 | . |

VISUAL OPTICS - 10MM LED SERIES SCOPES



Visual Optics has engineered and manufactured the next step in the evolution of the fiber optic bore scope. Their creation of the VO LED Series Fiber Scope has raised the bar in the areas of optical quality, image light output, shaft control and material tolerance. The VO Series Fiber Scope achieves industrial level quality at an affordable price.

Features:

- High resolution image bundle
- High flex shaft material
- Strong / stable light source
- Briefcase style instrument case
- Highly detailed imaging with 7400 pixels
- High output LED lighting - 2 White LED's in tip
- No bulbs to change - Ever
- Superior optics provide easier viewing
- Spring Lok Design - Longer reach w/o drooping
- Waterproof shaft
- Industrial grade, 2 level light switch
- Viewing range, 40 degree - 1/2 inch to infinity
- Standard lengths 18, 24, 36 and 48 inch
- Replaceable halogen bulb in the handle
- Highly affordable

| Model | Length | Diameter | Description | Part No. | Price |
|------------|--------|----------|---|----------|-------|
| VO18-10W/W | 18" | 10mm | LED / Lithium Mirror/Magnet Kits Included | 12-01735 | . |
| VO24-10W/W | 24" | 10mm | LED / Lithium Mirror/Magnet Kits Included | 12-01736 | . |
| VO36-10W/W | 36" | 10mm | LED / Lithium Mirror/Magnet Kits Included | 12-01737 | . |
| VO48-10W/W | 48" | 10mm | LED / Lithium Mirror/Magnet Kits Included | 12-01738 | . |



VISUAL OPTICS HALOGEN SERIES SCOPES

Visual Optics has engineered and manufactured the next step in the evolution of the fiber optic bore scope. Their creation of the VO Halogen Series Fiber Scope has raised the bar in the areas of optical quality, image light output, shaft control and material tolerance. The VO Series Fiber Scope achieves industrial level quality at an affordable price.

Features:

- High resolution image bundle
- High flex shaft material
- Strong / stable light source
- Briefcase style instrument case
- Highly detailed imaging with 7400 pixels
- Superior optics provide easier viewing
- 4mm, 6mm diameters
- Water and abrasion resistant shaft material
- Industrial grade, 2 level light switch
- Viewing range, 40 degree - 1/2 inch to infinity
- Standard lengths 18, 24, 36 and 48 inch
- Replaceable halogen bulb in the handle
- Highly affordable

| Model | Length | Diameter | Description | Part No. | Price |
|---------|--------|----------|---|----------|-------|
| VO18-4H | 18" | 4mm | Halogen / Lithium Bulb/ Mirror/Magnet Kits Included | 12-01729 | . |
| VO24-4H | 24" | 4mm | Halogen / Lithium Bulb/ Mirror/Magnet Kits Included | 12-01730 | . |
| VO36-4H | 36" | 4mm | Halogen / Lithium Bulb/ Mirror/Magnet Kits Included | 12-01731 | . |
| VO18-6H | 18" | 6mm | Halogen / Lithium Bulb/ Mirror/Magnet Kits Included | 12-01732 | . |
| VO24-6H | 24" | 6mm | Halogen / Lithium Bulb/ Mirror/Magnet Kits Included | 12-01733 | . |
| VO36-6H | 36" | 6mm | Halogen / Lithium Bulb/ Mirror/Magnet Kits Included | 12-01734 | . |

TO

SPRAY SYSTEMS

GRACO HVLP SPRAY SYSTEMS

Virtually eliminates mist. Requires less maintenance. Blows less heat up the stack. Uses up to 50% less material. Delivers better pattern control. Reduces overspray up to 90%. Eliminates high-pressure "flop" and tiger stripes.



GTS-2500 HVLP SPRAYER - This lightweight, portable sprayer features the GTS-960 Bleeder Style Gun and offers outstanding performance in its equipment class. Easily spray stains, lacquers, oils, enamels and urethanes.

- Turbine Stages - 2
- Cup - 1 qt (1 liter)
- Weight: Complete - 32 lb
- Turbine Air Working Pressure - 5 psi (.345 bar, 34.5 kPa) max.

- Turbine Air Outlet Flow Rate - 58 cfm (1642 lpm) max.
- Gun - GTS-960 Bleeder Style with Fluid Set #3
- Standard Turbine Air Hose Length - Standard units incl. 20 ft (6 m). Use 40 ft (12 m) max.
- Electrical Rating - 7A at 120 VAC
- Power Cord - No. 16 AWG, 3 wire, 6 ft (1.8 m)
- Shipping 18 in. x 15-1/2 in. x 16 in.

* **The GTS-2500 is not designed for use with non-bleeder guns.**
P/N 12-15710.....



GTS-3800 HVLP SPRAYER - The GTS-3800 is highly productive for nearly all fine finish applications. Easily spray stains, lacquers, oils, enamels, urethanes and automotive finishes. Plus, it atomizes many water-based latex and acrylic coatings, multi-color and other higher viscosity coatings.

- Turbine Stages - 3
- Turbine Air Working Pressure - 6 psi (.414 bar, 41.4 kPa) max.

- Turbine Air Outlet Flow Rate - 80 cfm (2265 lpm) max.
- Gun - GTS-980 Non-Bleeder Style with Fluid Set #3
- Cup - 1 qt (1 liter)
- High-Flex Turbine Air Hose Length - Standard units incl. 30 ft (9 m). Use 60 ft (18 M) max.
- Power Cord - No. 16 AWG, 3 wire, 6 ft (1.8 m)
- Electrical Rating - 12A at 120 VAC
- Weight: Complete - 34 lb
- Dimensions: 18 in. x 15-1/2 in. x 16 in.

P/N 12-15780.....



GTS-4900 HVLP SPRAYER - Our most powerful and versatile sprayer offers everything you need on the job for high productivity. This unit is loaded with features and can spray the broadest range of materials.

- Turbine Stages - 4
- Weight: Complete - 39 lb
- Turbine Air Working Pressure - 8 psi (.552 bar, 55.2 kPa) max.
- Turbine Air Outlet Flow Rate - 82 cfm (2321 lpm) max.

- Gun - GTS-980 Non-Bleeder Style with Fluid Set #3, #4 and #5
- Cup - 1 qt (1 liter)
- High-Flex Turbine Air Hose w/Quick disconnects - Standard units include 30 ft (9 m). Use 60 ft (18 M) max.
- Power Cord - No. 12 AWG, 3 wire, 15 ft (4.6 m)
- Electrical Rating - 14A at 120 VAC
- Dimensions: 18 in. x 15-1/2 in. x 16 in.

P/N 12-15950.....

GRACO ACCESSORIES

| Description | Part No. | Price |
|----------------------------|----------|-------|
| HVLP 1 Qt. Cup & Pot Assy. | 12-12990 | . |
| 2mm Needle/Nozzle (dopes) | 12-15750 | . |
| 2.8mm Needle/Nozzle | 12-15760 | . |
| 30 ft. Replacement Hose | 12-00016 | . |
| Superflex Hose 54" | 12-74660 | . |

CITATION 240

PAINT SPRAYER/RESPIRATOR SYSTEM

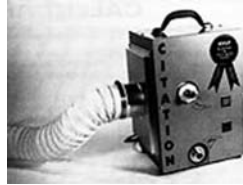


The Citation HVLP 'twin turbine' system provides both a 'professional quality' paint spray system and the HobbyAir supplied-air respirator in one portable package. This system comes complete with everything you will need to spray exceptionally fine finishes with practically any material and to breathe in safety and comfort while you work. The basic system includes two 40' airlines (one for breathing and one for painting) and a half face mask. Available options include: A larger two-person Citation system with 3 airlines (two for breathing and one for spraying), Full face masks, and air-supplied hoods. This system comes with an unconditional 1-year warranty.

P/N 12-15900

Optional 4 ft. whip hose..... P/N 12-15910

CITATION INTAKE ADAPTER



The Intake Adapter allows the pump unit to be placed inside the shop area, keeping it out of the elements. With the adapter installed, the vent hose can be extended to a fresh air location up to 50 feet away, allowing the pump to draw in fresh air from a distant location. The caution is to place the pump in a location inside the shop that is at least 30 feet away from the actual spray area in which it will not come in contact with flammable material. For example, the pump should never be placed inside a paint booth. Adapter kit comes complete with the steel adapter itself, screws, weatherstrip, hose clamp, 50 feet of 4-inch hose and installation instructions.

P/N 12-15901

PRIMER PISTOL



Simple and cost effective way to apply small amounts of primer paint and liquid with minimal cleanup time. A valuable tool for aircraft builders. Requires empty film containers and 1/8" ID plastic tubing.

P/N 12-00686



SUNEX SX-10 TOUCH-UP GUN

Ideal for tight areas. Holds approximately one pint of paint.

P/N 12-01121



SUNEX SX-80B SPRAY GUN AND CUP

Ideal for heavy duty spraying, precision air cap and fluid nozzle, features vented lid, two fingered control for ease of operation, 1.3 mm fluid orifice, shipping weight (Lbs.) - 2.7

P/N 12-01712

AXIS HVLP PAINT SPRAYERS



The Axis series of paint sprayers is designed to take the guesswork out of choosing a spraying system which can be confusing for the homebuilder who is going to paint for the first time. Rather than offer a wide variety of sprayers, Axis has selected the best turbine for each type of product normally used to finish an airplane. This is the SP 2003 (three stage turbine) which is furnished with 30 feet of air delivery hose and the Lexair spray gun.

Select one of the three systems shown below based on type of material you will be spraying. If waterborne materials are going to be used, we can furnish systems for this process on a special order basis.

- Sys. 1 to paint aircraft covered in fabric.....P/N 12-15920
- Sys. 2, to paint composite structure.....P/N 12-15930
- Sys. 3, to paint over metal or woodP/N 12-15940

ACCESSORIES

- Lexair Gun.....12-01385
- Hose 4012-01386

TO

SPRAY EQUIPMENT

BINKS SPRAY EQUIPMENT



MODEL 2001 AIR SPRAY GUN - This new gun incorporates the best features found in most heavy-duty production guns. The new grip will reduce operator fatigue and improve control. It utilizes the new style fluid nozzle with six air passages. It weighs only 24 oz. and is perfectly balanced. The head is forged brass and the body is anodized forged aluminum alloy. Spray pattern is adjustable from round to fan with a full range of intermediate settings. Air Flow: 8.1 CFM @ 50 PSI with No. 66 fluid nozzle and No. 66SA air nozzle. Air connections - Fluid inlet - 3/8" NPS (m), Air

inlet 1/4" NPS (m). All parts replaceable. Made in U.S.A. Furnished with Model 81-350 DRIP-PROOF 1 Qt. attachable siphon cup. Wt. 3.25 lbs.
 Model 2001 Gun and Cup..... P/N 12-04000.....
 Gun Only..... P/N 12-04100.....
 Cup Only..... P/N 81-350.....

BINKS AIR HOSE



5/16" Dia. hose with standard 1/4" NPS connection at both ends.
 5/16" Dia. x 25' Long..... P/N 71-1205.....
 5/16" Dia. x 50' Long..... P/N 71-1206.....
 A 5/16" diameter hose is recommended for efficient operation.

STAINLESS STEEL PRESSURE ASSISTED 1 QUART CUP



Bink stainless steel pressure assisted 1 quart cup & attachment.
 80-500 cup/lid assembly ... P/N 12-01332.....
 82-367 cup gasket (poly) .. P/N 82-367.....

BINKS MACH 1 HVLP



The Binks Mach 1 HVLP is a siphon-fed refinishing system that performs like your favorite conventional outfit but produces far superior transfer efficiency. A unique arrangement of air nozzle, fluid nozzle, and needle enable the Mach 1 to draw material from a standard siphon feed cup and avoid the need for a pressure cup. Eliminates the need for the operator to set fluid pressures. Delivers lower emissions for compliance with environmental regulations.

| P/N | Description | Price |
|----------|---|-------|
| 12-04410 | MACH 1 Siphon Gun Only | . |
| 98-1176 | MACH 1 HVLP Siphon outfit -Spray Gun, 81-375 'No-Drip' Siphon Cup, &83-469 gun brush. | . |

DISPOSABLE PAPER CUPS



Utilizes disposable paper cups as paint reservoirs making color changes possible in seconds. Package of 50 cups.
 P/N 01-00325

BINKS MODEL 95 SIGNATURE SERIES SPRAY GUN



Model 95 spray gun employs the best features of Binks' most popular conventional air spray guns. This gun delivers higher quality finish, faster production, less operator fatigue, greater fluid compatibility, and more application versatility than any spray gun currently available. Model 95 is a high production gun with stainless steel fluid passages which may be used with most coatings. This new gun replaces Models 18, 62, and BBR spray guns, incorporating the best features of all 3: drop-forged anodized aluminum body, stainless steel fluid passages, adjustable floating needle valve, hardened steel or stainless steel fluid nozzle, plated drop-forged bronze self-centering air nozzle, brass air valve cartridge, adjustable spray pattern, 3/8" NPS (m) fluid inlet, 1/4" NPS (m) air inlet. Weight 1 lb., 11 oz.

Model 95 Hand Gun..... P/N 12-14150.....
 Model 95 gravity feed hand gun with 1-1/3" alum. pint cup
 P/N 12-04155

THE BEUGLER STRIPER PROFESSIONAL PINSTRIPING TOOL



The Beugler tool makes accurate lines consistently, without gravity or pressure, eliminating the need for tape. The unique serrated wheel and wheel head design are the secret to the stripers' success.

Ideal for any art project, the Beugler Striper is a professional tool used by auto, truck and motorcycle painters around the world. Beugler's magnetic guide securely holds to any steel surface, allowing the stripers' guide arm to slide smoothly along its recessed groove for long, accurate, straight, or arced lines. To ensure customer satisfaction, Beugler also offers a 40 minute video tape or DVD with instructions, tips and demonstrations. The Beugler Striper works well with any "creamy" consistency paint. You can stripe at any angle, as the tool is not gravity fed. Both Professional and Deluxe Kits are of the same quality and include guides, clean up brush, 2/3 oz. paint barrel (which stripes 250 to 1750 feet, depending on stripe size) and complete instructions. Length 4-1/4", O.D. 3/4".

| Description | PN | Price |
|--|----------|-------|
| Deluxe Kit (Includes 3 Striping Heads) | 12-01696 | . |
| Professional Kit (Includes 7 Striping Heads) | 12-01695 | . |

WREN AIR BRUSH SET



Model No. 59-10005 includes 1/4, 1/2 and 2-1/2 fl. oz. color bottle assemblies, and 6 ft. plastic air hose with connections, packed in a durable styrene case. The Wren Air Brush is a "must" for retouching, special effects spraying and small parts finishing. Ship Wt. 20 oz
 P/N 59-10006

MINI-AIR POWERED VACUUM



Runs off of an air compressor and is simple to use. Just plug it into the air hose using the adapter (included) & start cleaning. The body of the unit is plastic or cast aluminum construction with an 18" clear plastic flex tube that can easily get into tiny spaces to clean. The canvas bag is easily removed. Wt. 8.5 oz.

Mini-Air Vacuum - plastic..... P/N 12-16820.....
 Mini-Air Vacuum - aluminum..... P/N 12-16821.....
 Spare Bag and Clip..... P/N 12-16825.....
 36" Clear Flex Hose..... P/N 12-16830.....

TO

AOM SPRAY EQUIPMENT

AOM X SERIES GUNS - MAX 29 PSI



6008SSPX - HVLP Water Base Spray gun, die cast aluminum body, low cfm [4-6], SS fluid passages. replace xx with 1.0, 1.3, 1.4, 1.5, 1.8, 2.0, 2.5 for tip size P/N 12-02136.....

66-110 - 1 Qt aluminum cam-lock cup (Order Separate) P/N 12-02137.....

130614 - HVLP Spray gun, drop forged body, for use with pressure pots P/N 12-02138.....

130617 - HVLP Spray gun, drop forged body, with #66-110 cam-lock siphon cup P/N 12-02139.....

1231SSXX - Conventional spray gun with #66-110 camlock siphon cup replace xx with 1.8 or 2.0 1.8 P/N 12-02140.....
2.0 P/N 12-02141.....

6008XX - Fluid nozzle, air nozzle and needle P/N 12-02142.....

6008RK REPAIR KIT - P/N 12-02143.....

AOM R 200 - MAX 45 PSI SPRAY GUN



662XX - Low pressure HVLP spray gun only for high efficiency low cfm at 5-7 (Replace xx with tip size 1.3, 1.4, 1.5, 1.7, 2.0 2.5)
1.3 P/N 12-02166.....
1.4 P/N 12-02167.....
1.5 P/N 12-02168.....
1.7 P/N 12-02169.....
2.0 P/N 12-02170.....
2.5 P/N 12-02171.....

663XX - Low air consumption HVLP gun with syphon cup low cfm at 5-7. (Replace xx with tip size: 1.7, 2.0, 2.5)
1.7 P/N 12-02172.....
2.0 P/N 12-02173.....
2.5 P/N 12-02174.....

66-110 - 1 qt Cam- Lock Cup 2.0 P/N 12-02137.....

67999 - Seals and springs repair kit..... P/N 12-02161.....

67-100 - 1 qt Pressurized aluminum cup with check valve and regulator P/N 12-02177.....

AOM SX SERIES - MAX 30 PSI SPRAY GUN



Gravity spray gun kit 600 cc. aluminum cup, 5 CFM @ 30 PSI

ECO/SX HVLP - Spray gun kit includes 3 needle/nozzle sets 1.0, 1.4, 1.7mm, 1 - 600cc aluminum cup #18501SE, 2 cleaning brushes and wrench in carrying case P/N 12-02130.....

ECO/SX N/N - aircap kit 1.0,1.2,1.3,1.4,1.7,2.0 (replace xx with tip size) P/N 12-02131.....

K1/SX HYBRID - high transfer efficiency Spray gun kit. Includes same as above P/N 12-02132.....

K1/SX N/N - aircap kit 1.0,1.2,1.3,1.4,1.7,2.0 (replace xx with tip size) P/N 12-02133.....

REPAIR KIT - P/N 12-02134.....

ALUMINUM GRAVITY CUP - 1000 cc (35 oz) P/N 12-02135.....

AOM ECO/MINI HVLP GUN KIT - MAX 43 PSI



61-210 - HVLP Mini Gravity Gun Kit includes 200cc aluminum cup, 4 glass jars, 12' air hose with quick disconnect, filter, 2 adapters, cleaning brush and wrench in carrying case. This unique kit has all the necessary parts to convert from a Mini Gun to an Air Brush P/N 12-02144.....

61-2006XX - Fluid nozzle, air nozzle and needle -(replace xx with 0.8, 1.0, or 1.2 for tip size)
0.8 P/N 12-02145.....
1.0 P/N 12-02146.....
1.2 P/N 12-02147.....

61-210SE - 200cc Nylon Cup P/N 12-02148.....

61-220SE - 200cc. Aluminum Cup P/N 12-02149.....

61-2000R - Repair kit P/N 12-02150.....

828-W XX - Mini Gravity Glazing Gun with 200cc aluminum cup. Comes with air nozzle for sprayable products. (Complete) replace xx with 1.0 or 1.5 P/N 12-02151.....
1.5 P/N 12-02152.....

828-GTXX - Glazing nozzle kit c/o fluid nozzle, air nozzle and needle. (Complete for both sprayable and non sprayable materials) replace xx with 1.0 or 1.5 1.0 P/N 12-02153.....
1.5 P/N 12-02154.....

AOM E70 CONVENTIONAL SPRAY GUN



This Gravity Gun is ideal for applying a wide range of materials such as Primers, Fillers, and Virtually all Wood Coatings
137XX - E70 Gravity Gun with 500 cc. aluminum cup with nylon cover P/N 12-02228.....

138XX - E70 Gravity Gun with 750 cc. aluminum cup with nylon cover P/N 12-02229.....

121XX - Fluid nozzle, air nozzle and needle replace xx with 1.0, 1.2, 1.4, 1.5, 1.6, 1.8, 2.0, 2.2, 2.5, 3.0 mm. P/N 12-02225.....

12630A - Seals and springs repair kit for E70 P/N 12-02231.....

17000SE - 500cc. nylon cup with cover P/N 12-02232.....

15120SE - 500 cc. Aluminum cup with nylon cover P/N 12-02233.....

14320SE - 750 cc. Aluminum cup with nylon cover P/N 12-02234.....

AOM 1 QUART PRESSURIZED CUP (HVLP)



RP-XX - R200 HVLP spray gun, pressurized aluminum cam-lock cup, regulator and check valve (replace xx with tip size. 1.3, 1.4, 1.5, 1.7, 2.0, 2.5) This outfit is perfect for small painting jobs that require precise fluid control. Can spray thicker material. Maximum cup pressure 10 PSI
1.3 PN 12-02180.....
1.4 PN 12-02181.....
1.5 PN 12-02182.....
1.7 PN 12-02183.....
2.0 PN 12-02184.....
2.5 PN 12-02185.....

AOM G70 CONVENTIONAL SPRAY GUN



127XX - Spray gun with 1qt. Cam-lock cup P/N 12-02223.....

125XX - Pressure fed spray gun only with 3/8:" fluid inlet P/N 12-02224.....

121XX - Fluid nozzle, air nozzle and needle replace xx with 1.0, 1.2, 1.4, 1.5, 1.6, 1.8, 2.0, 2.2, 2.5, 3.0mm. P/N 12-02225.....

66-110 - 1 Qt. Cam-lock cup P/N 12-02137.....

12632A - Seals and spring repair kit for G70/A or SSP P/N 12-02227.....

AOM K4 CONVENTIONAL SPRAY GUN



Ultra compact and light spray gun featuring a reduced air consumption. 1 qt. cam-lock cup
1206XX - K4 Spray gun with standard cam-lock cup replace xx with 1.0, 1.3, 1.5, 1.8, 2.0mm P/N 12-02236.....

208XX - K4 SSP Spray gun only. Nozzles same as above P/N 12-02237.....

207XX - Fluid nozzle, air nozzle and needle for K4 (replace xx with nozzle size) P/N 12-02238.....

20895A - Seals and springs repair kit for K4 P/N 12-02239.....

66-110 - 1 qt. aluminum cup with cam-lock P/N 12-02137.....

AOM PQ CUP GUN



99518 - PQ Cup Gun Economical high pressure air spray gun P/N 12-02242.....

AOM AR UNDERCOATING GUNS

Tough aluminum body. 1000 cc (35 oz) siphon cup. Sprays virtually all materials. 31500 - AR Spray Gun P/N 12-02241.....



THE Q SERIES HVLP TURBINE UNIT EMITS 50% LESS NOISE THEN REGULAR TURBINES

PRO 3 - 110V, 3 Stage turbine unit, 101 CFM @ 6 PSI comes with gun, cup, 25' hose and coupler. Perfect for cabinet makers, furniture refinishers and most trades. Spray cabinets, furniture, autos or pianos. P/N 12-02108.....

PRO 4 - 110V, 4 Stage turbine unit comes with gun, cup, 25' hose and coupler. The most powerful 4 Stage available. Perfect for paint contractors spraying Latex house paints, cabinet makers, furniture refinishers and most trades P/N 12-02109.....

XT 2 - Turbine spray gun & cup P/N 12-02110.....

WARRANTY: All systems 24 months -Parts & Labor

TO

AOM SPRAY EQUIPMENT

AOM DUAL ACTION AIRBUSH KIT



AB1104C WA -

- * Double action trigger for air-paint control
- * Precision machined nozzle and fluid cap
- * Suitable for graphic artwork
- * Fluid nozzle: 0.5 mm

P/N 12-02217



AB1117K -

- * Double action trigger for air-paint control
- * Precision machined nozzle and fluid cap
- * Suitable for graphic artwork

Contains: 1 - Airbrush, 1 - Hose, 1- Wrench 1 - Jar Adapter, 1 - 5 cc. Paint cup Fluid nozzles - 1 of 0.3, 0.5, 0.7mm 2 - 22cc glass jar, 1 - 50 cc glass jar
P/N 12-02218



AB1117C - Double action trigger for air-paint control, precision machined nozzles -air and fluid, suitable for graphic artwork. 0.5 bottom feed with glass jar
P/N 12-02219

AOM MINI AIR BRUSH COMPRESSOR



AC18 1/8 HP Mini air brush compressor (Piston Type) with filter, micro switch and 10' retractable air hose (Airbrush Not Included)
P/N 12-02221

AOM 2 QT PRESSURE POT OUTFIT



RP-XX - 2 Qt. pressure pot outfit includes an R100 mini gun, 2 qt. pressure pot with regulator and 6' air and fluid hose with fittings. This outfit is especially designed to spray in hard to reach areas. Suitable for both water and solvent base material.
P/N 12-02186

P/N 12-02186

75-11187WB - 2 Qt. pressure pot outfit includes an 878WB mini gun, 2 qt. pressure pot with regulator, 5' air hose with fittings, 5' clear fluid hose with SS fittings, adapter and SS elbow. Other tip sizes available 0.8, 1.2 and 1.5
P/N 12-02188



KIT-R - Retrofit kit consists of adapter, SS elbow, 5' air hose with fittings and 5' clear fluid hose with SS fittings
P/N 12-02189

P/N 12-02188

75-112 - 2 Qt Gasket
P/N 12-02187

AOM 2-1/2 GAL PRESSURE POT OUTFITS



65-9121305-1.4 - 2 1/2 Gallon pressure pot outfit includes a 2 1/2 gallon pressure pot dual regulated, X series spray gun (available in 1.3, 1.4, 1.5, 1.8, 2.0) and 25' 1/4" air and fluid hose with fittings. This outfit is perfect for small to medium production facilities. Suitable for glues, lacquers, stains, water based and solvent based materials. OPTIONAL: 5/16" air hose and 3/8" fluid hose available on request at an additional cost.
P/N 12-02191

65-914 GASKET P/N 12-02119

AOM PRESSURE TANKS 2 QT. REMOTE



75-111 - 2 qt remote pressure tank, single regulator, safety relief valve, handle, lightweight, SS pick up tube, Screw type top. Dual regulated available.
P/N 12-02111

75-111S - Large Mouth 2 qt. remote pressure tank, teflon coated inside, single regulator, safety relief valve, handle, lightweight, screw type top. Dual regulated available.
P/N 12-02112

75-111 - Replacement gasket for 2 qt remote pressure tank
P/N 12-02113

65-424/1 - Replacement gasket for 2 qt large mouth remote pressure tank
P/N 12-02114

75-111SS - 2 qt all stainless steel remote pressure tank, single regulator, safety relief valve, handle, lightweight, screw type top.
P/N 12-02115

75-112SS - Replacement gasket for 2 qt all stainless steel remote pressure tank
P/N 12-02116

AOM PRESSURE 2-1/2 GALLON TANKS



65-911 - 2-1/2 gal. pressure tank, single regulator, Teflon coated inside and outside Safety relief valve, pick-up tube with filter, wide lid and low side walls, large wheels for easy movement. P/N 12-02117

65-912 - Same as above with dual regulators
P/N 12-02118

65-914 - Replacement gasket for 2 1/2 gal. tank
P/N 12-02119

AT2.5ASS - 2.5 gal pressure tank, air agitator, stainless steel inner liner, dual regulators, stainless steel fitted.
P/N 12-02120

65-0097 - Complete regulator assembly for 2 1/2 gal tank
P/N 12-02121

65-0098 - Complete second regulator assembly for 2 1/2 gal tank only
P/N 12-02122

65-0099 - Double regulator assembly for 2 1/2 gal tank
P/N 12-02123



AOM ACCESSORIES
AOM AIR BRUSH HOSE MCR011 - 10' Air brush hose 1/4" F X 1/8" F
P/N 12-02220



AOM GUN HOLDER RP 8413 - Gravity gun holder
P/N 12-02216



AOM DISPOSABLE LINERS - Disposable Liner round bottom fits # 65-911 & # 65-912 (10pk)
P/N 12-02124

Disposable Liner flat bottom fits # AT2.5ASS tank (12pk)
P/N 12-02125

Disposable Liner round bottom fits #65-911 & #65-912 (Same as 65-913-12 but is a pack of 60)
P/N 12-02126

Disposable Liner round bottom fits 5 gal pressure tanks (24pk)
P/N 12-02127

2 1/2 & 5 gal. bag tank liners 4 mil. (10 pk)
P/N 12-02128

Disposable Liner for 10 gal. pressure tanks (10 pk)
P/N 12-02129

AOM HARD CUP KITS - Can be mounted on any AOM spray gun.



DC 195-12 - Kit contains 12 Soft Liners, 12 Rings, 12 Lids w/Filters, 12 Caps, 1 Hard Cup and 1 Adapter
P/N 12-02203

DC 195-12 - Kit contains 12 Soft Liners, 12 Rings, 12 Lids w/Filters, 12 Caps (Used with DC 191 Hard Cup)
P/N 12-02204

DC 190-48 - Kit contains 48 Soft Liners, 48 Rings, 48 Lids w/Filters, 48 Caps (Used with DC 191 Hard Cup)
P/N 12-02205

DC 191 - Hard Cup (750 ml capacity)
P/N 12-02206

DC 192 - Adapter used with all AOM gravity guns (except Mini gun)
P/N 12-02207

DC 193 - Adapter used with all AOM pressure guns
P/N 12-02208

DC 194 - Shaker Cap
P/N 12-02210



SPRAY GUN ACCESSORIES
68-9637 - Air regulator w/gauge, 1/4" F swivel connection & 1/4" M NPS connection P/N 12-02213

68-9638 - Mini air regulator w/gauge, 1/4" F swivel connection & 1/4" M NPS connection
P/N 12-02214

61-2031 - Air adjustment Valve
P/N 12-02215

AOM QUICK COUPLERS -
41106 - 1/4" Brass Male thread P/N 12-02196

41156 - 1/4" Brass Female thread
P/N 12-02197

AOM QUICK CONNECTORS -
42200 - 1/4" Brass High Flow male P/N 12-02198

45600 - 1/4" Brass Std. flow male P/N 12-02199

42300 - 1/4" Brass High Flow female P/N 12-02201

45700 - 1/4" Brass Std. flow female P/N 12-02202

AOM MAINTENANCE KIT - Spray gun maintenance kit includes 12 special steel cleaning needles. Perfect for removing dry paint particles from air cap and nozzle as well as all difficult to reach gun parts.
P/N 12-02107

AOM SPRAY GUN LUBE 811-12 - Spray gun lube 12 pcs/Counter Display Box
P/N 12-02211



AOM 18 PC SPRAY GUN CLEANING KIT KK118 - 1 - Extra long 12" Pick-up Tube Brush 1 - 1/4" HVLP Brush 1 - 1/2" Body Cavity Brush 1 - Detail End Brush 2 - Nylon - Bristol Parts Brush 5 - Miniature Brush Set 6 - Precision Needle Set 1 - O-ring Removal Tool
P/N 12-02212

TO

TIG TORCHES - TIG WELDERS - WELDING CARTS

ASK MISTER TIG DVD



Learn how to tig weld with the best!! Mister Tig (Wyatt Swaim-30 years of aerospace welding experience) will teach you the fundamentals and launch your tig welding training. This 34 minute DVD will teach you the proper torch angle, tungsten preparation, tungsten stick-out, and the proper "dabbing" of the filler rod technique. This instructional DVD will help you set up your machine for the correct procedures including aluminum (alternating current), and 4130-cro-mo (DC-).

Mister TIG The DVD is also packed with tig information and is designed for the beginner tig operator and will even help the intermediate operator.

P/N 13-05751

TIG CALCULATOR



Just tell it what material you're welding, the thickness, and type of weld (butt, lap, etc.), and it will give you information concerning your weld such as travel speed, number of passes needed, tungsten type and size, what amperage to run, and speed of welding. Slide rule style.

P/N 12-00444

TIG TORCHES & REPLACEMENT CABLES



PTA-9F - Air-cooled TIG torch, rated 125 amps at 60% duty cycle. Includes a 12-1/2 foot Superflex Cable. Equipped with a flexible head for easy maneuverability into tight places.

P/N 12-00391

REPLACEMENT CABLE - 12-1/2 foot Superflex replacement cable for the PTA-9F

P/N 12-00399



PTA-17H - Air-cooled TIG torch, rated 250 amps at 60% duty cycle, heavy duty. Equipped with a 12-1/2 foot Superflex Cable

P/N 12-00392

REPLACEMENT CABLE - 12-1/2 foot Superflex replacement cable for the PTA-17H

P/N 12-00401

TIG TORCH ACCESSORY KITS



9GL KIT - TigDepot Parts Kits provide all the torch accessories you need to start welding. Parts Kits provide collets, collet bodies, a back cap, alumina nozzles and tungstens in a variety of sizes, all packaged in an easy to carry reclosable box.

The 9GL-Kit comes with .040, 1/16, 3/32 Collets, Gas Lens Collet Bodies, Gas Lens Nozzles, (#5, #6, #7), a long Back Cap, and an assortment of 2% Thoriated and Ceriated Tungsten in a convenient plastic box. For the 9 Series torches

P/N 12-00393

17H-GL KIT - The TigDepot 17H Gas Lens Kit is made specifically for the 210 Amp 17H Torch.

The Kit includes One of each:

- 2% Thoriated Tungsten .040, 1/16, 3/32 DIA.
- Alumina cups #5,6,7
- Gas lens .040, 1/16, 3/32
- Collets .040, 1/16, 3/32
- Backcaps-short, medium, long
- Insulator
- Tool box

PN 12-00394

TIG BUZZ BOX KIT



TIG weld Aluminum, Stainless Steel, Chrome Moly, and many other metals. Plug it directly into your standard household outlet (110 volts, 15amps). **Kit includes:** • CK9 Rigid Torch w/ Valve and 12.5' one piece cable with male dinse connector. • Flowmeter Regulator •

Adapter Plug with 1' extension cord • Female Dinse to allow you to go back and forth to stick welding. • AK-4 Accessories Kit • AMP Conversion Decal • Instruction Manual

P/N 12-00389.....

TIG WELDERS / WELDING EQUIPMENT

INVERTEC V155-S TIG READY-PAK - Weighing in at just under 15 lbs. (6.8 kg) it is no lightweight contender. It packs the full punch of a heavyweight professional that you can take to the most demanding jobs. With 120/230V auto reconnect operation, it can operate from a portable generator. It can also plug into a 200 foot (61 m) 230V extension cord (not included) so you can weld just about anywhere. The Dent resistant case is IP23 rated for outdoor use. P/N 12-01978



PRECISION TIG 225 READY PAC - Unit Includes: Precision TIG 225, Torch Parts Storage Compartment, Torch Hanger, 10 ft. Work Cable and Clamp, Removable Lift Eye, 9 ft. Input Power Cord, NEMA 6-50P Plug, NEMA 6-50R Receptacle, TIG Procedure Guide, GTAW (TIG) Handbook, PTA-17 Pro-Torch TIG Torch (12.5 ft., 1-piece), Gas Regulator with Hose, and Foot Amptrol® (K870). Shipped fully assembled. Shielding gas sold separately.....P/N 12-01634



TIG 225 With Understorage Cart.....P/N 12-01635

POWER MIG 140C - Power MIG® 140C (K2471-1)with continuous voltage control for more critical projects where precise adjustment is required. Diamond Core Technology™ and the rugged drive system aid arc performance for MIG welding on thin gauge steel, stainless and aluminum. Or, use gas-less flux-cored welding for deep penetration on thicker steel, even outdoors! With a wide 30-140 amp welding output range it is the highest output in 120 volt input power welder class. MIG weld 24 gauge up to 10 gauge (.135") sheet metal in a single pass. Includes: • Magnum 100L welding gun (K530-6) • Six spare contact tips • Gas and gasless nozzles • Work cable and work clamp • Adjustable gas regulator and hose •.025 and .035 smooth drive rolls •.030-.045 knurled drive roll •.025-.035 wire guide • 2 lb. spool .025" Super Arc® L-56 wire • 1 lb. spool .035" Innershield® NR-211-MP self-shielded flux-cored wire • 8" spool spindle adapter • How to Use DVD.



PRO-CUT 25 PLASMA CUTTER - The Pro-Cut 25 combines the next generation of plasma technology and enough power to easily cut 3/8" mild steel in a package that weighs only 29.5 lbs. (13.4 kg). The power source automatically reconnects between 115V or 230V for easy set-up. This further extends the flexibility of this plasma unit. Easy to use with its back lit LED status lights, 15 ft. plasma torch, and integral air controls.

P/N 12-00783



V205-T AC/DC INVERTEC - For TIG and Stick Welding. Ideal for critical AC or DC TIG Welding applications. Variable AC frequency allows you to focus the arc when precise arc control is required. The 115/230V auto-reconnect makes the V205-T AC/DC truly flexible. The unit comes with a 10 ft. 230V input cord and plug; a Twist-Mate Torch Adapter for 9 and 17 Series one piece torches; Twist-Mate adapter for work cable; and adjustable shoulder strap. This full featured TIG Welder is also capable of Stick Welding. P/N 12-00384



One-Pak™ Package Includes: V205-T Foot Amptrol (K870) and TIG-Mate 17 Starter Kit. Assembly required. P/N 12-00776

WELDING CARTS

These Welding carts are for the Invertec V-155, Invertec V-205T AC/DC, Procut 25 Plasma Cutter, and Power MIG 140C.

K520 WELDING CART - (150 cu.ft. bottle capacity) Accommodates power source, gas cylinder, tools and welding accessories. Includes adjustable handle, front casters, and rear wheels. Dimensions (HxWxD): 30 (min.)/34 (max.) x 18 x 35 inches. Physical specifications: Weight:38 lbs. (17.2 kgs.) Dimensions (in) H x W x D : 34 x 18 x 35 Dimensions (mm) H x W x D : 864 x 457 x 889 P/N 12-00773.....



K2275-1 WELDING CART - (80 cu.ft. bottle capacity) Full-featured cart is designed to store and transport a welder, 80 cubic foot gas cylinder, welding cables and accessories. Includes an angled top shelf for easy access to welder controls, a lower tray for added storage space, a sturdy handle and a convenient cable wrap hanger. Replaces K520. Physical specifications: Weight:24.75 lbs. (11.2 kgs.) P/N 12-00777.....



TO

TIG WELDING EQUIPMENT & ACCESSORIES

MAGNETIC UNI-JIGS



Magnetic holders for hands-free support in a variety of applications. Designed to last a life time. Each angle is screwed (not riveted) completely through the magnet to insure proper angles.

Small (supports up to 45 lbs.) P/N 12-05185
 Large(supports up to 80 lbs.) P/N 12-05186

HARRIS MODEL 15 CLASSIC TORCH HANDLE



The Model 15 is a lightweight, aircraft style featuring a forward valve designed to permit changing flame settings with one hand. For welding, heating and brazing with fuel gases. • Class A 3/8"-24 hose connection • Cap: Cuts 2", welds to 5/16" • UL listed • Length: 5-3/4", Wt: .5 lbs.

Torch HandleP/N 12-00687



B-15-3 MixerP/N 12-00688



Welding Tip.....P/N 12-00689

Torch Handle Kit - Torch, Mixer and Tip
 P/N 12-00690



TIG TUNGSTEN

Sold in packages of 10

2% Thoriated
 1/16P/N 12-00438
 3/32P/N 12-00439

2% Ceriated
 1/16P/N 12-00440
 3/32P/N 12-00441

Pure
 1/16P/N 12-00442
 3/32P/N 12-00443

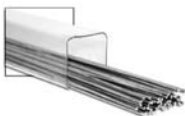
TIG FILLER MATERIALS



36" Cut Lengths are packaged in 1 lb. tubes to provide you the flexibility of buying only what you need for your job.

| Base Material | Use Filler | Size | Part No. | Price/Lb. |
|-----------------|------------|------|---------------|-----------|
| 4130 | ER80S-D2 | .035 | 12-00473 | . |
| 4130 | ER80S-D2 | .045 | 12-00474 | . |
| 4130 | ER80S-D2 | .062 | 12-00475 | . |
| 4130 | ER70S-2 | .035 | 12-00477 | . |
| 4130 | ER70S-2 | .045 | 12-00478 | . |
| 4130 | ER70S-2 | .062 | 12-00479 | . |
| Aluminum | ER4043 | .045 | 12-00480 | . |
| Aluminum | ER4043 | .062 | 12-00481 | . |
| Aluminum | ER5356 | .045 | 12-00482 | . |
| Aluminum | ER5356 | .062 | 12-00483 | . |
| Stainless Steel | ER312 | .035 | 12-00484 | . |
| Stainless Steel | ER312 | .045 | 12-00485 | . |
| Stainless Steel | ER312 | .062 | 12-00486 | . |
| Stainless Steel | ER308L | .035 | 12-00487 | . |
| Stainless Steel | ER308L | .045 | 12-00488 | . |
| Stainless Steel | ER308L | .062 | 12-00489 | . |
| Inconel | NICKEL 625 | .035 | 12-00490 | . |
| Inconel | NICKEL 625 | .045 | 12-00491 | . |
| Super Alloys | ALLOY W | MKT | Special Order | Call |
| Titanium | TITANIUM | MKT | Special Order | Call |
| Magnesium | TITANIUM | MKT | Special Order | Call |

BRAZING AND SILICON BRONZE



.062..... P/N 12-00470.....

STEELMAN WELDING BENCH



* 24 x 44 stretch metal grid table top w/grounding post and welding holster
 * Scissor action for quick and easy set up and tear down
 * Adjustable legs for easy leveling
 * No metal-to-metal contact on any hinge points
 * 500 lbs. weight capacity
 PN 12-02106

SMALL OXY-ACETYLENE KIT



With regulators. Designed for hobby, crafts, plumbing, etc. Braze and solder material from the thinnest up to 1/8" thick steel, melt up to 3 oz. silver. Provides stable and precise concentrated feather flame up to 6000°F for various materials such as metals, ceramics, and glass.

P/N 12-00447

CUTTING TORCH ATTACHMENT



Cuts up to 3". Spiral tube mixer design optimizes the mixture of fuel and oxygen. Stainless steel tubes and lever. "A" hose fitting, 3/8"-24 thread.

P/N 12-00448

BOTTLES AND TOTE



Plastic Stand, Oxygen and Acetylene Cylinders - Plastic Cylinder Stand holds "MC" Acetylene Cylinder and "R" Oxygen Cylinder.

Plastic Cylinder Stand
 P/N 12-00449

"MC" Acetylene Cylinder (Empty)
 P/N 12-00451

"R" Oxygen Cylinder (Empty)
 P/N 12-00452

COW HIDE GLOVES



These are a good import, not too stiff.
 P/N 12-05155

38" LEATHER WELDING APRON



Quick release buckle and cross straps make it very comfortable; it also has pockets.

P/N 12-05160

FULL FACE SHIELD



Lightweight headgear, shield flips down over prescription glasses. Good over bifocals.

P/N 12-05175

WA-GOGGLE

Gas welding goggle with adjustable headrest that pulls out and down. Permits easy use of eyeglasses. 2 x 4 lens.

P/N 12-05165



OXY-ACETYLENE HOSE

3/16" hose that may be used with all welding outfits.

B-B FITTING -

12'P/N 12-05916
 25'P/N 12-05917

A-B FITTING -

12'P/N 12-05918
 25'P/N 12-05919



HENROB 2000 IV WELDING TORCH



The revolutionary design of the Henrob 2000 Torch makes it the ideal welding torch for aircraft construction. The Henrob 2000 allows less oxidation, minimal flux, reduced pressures and substantial materials savings. Fewer tips are required and hose fatigue is lessened. Perfect for steel and aluminum welding and cutting. Highly recommended by many aircraft builders. Formerly known as the Dillon Mark III.

P/N 12-16000
Henrob Instructional VideoP/N 12-05150

PORTASOL CORDLESS

BUTANE SOLDERING TOOL KIT



Contains four different tools. Simple tip/accessory installation allows you to convert into a soldering iron, blow torch, hot blower or hot knife within seconds. Ideal for aircraft, automotive, marine and home use. The hot knife will quickly cut and seal

repairs on dacron, mylar and nylon. The soldering iron is ideal for working on electronics and avionics. Portasol is lightweight and fits easily in a tool box. Features cordless, go-anywhere versatility, 90 minute continuous use capacity, refills in 20 seconds with standard butane lighter fuel, and full 2 year warranty. Kit includes Portasol soldering tool with 2.4 MM tip, hot knife, blow torch, hot blower, cleaning sponge, safety stand and rugged plastic storage case.


P/N 12-20600

TO

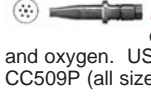
WELDING EQUIPMENT - BLASTING SYSTEMS


SMITH WELDING OPTIONAL EQUIPMENT

SERIES 30™ TWO STAGE REGULATORS

-  H1421A-510 for Acetylene, 0-15 PSI
P/N 12-01186
- H1410A-540 for Oxygen, 0-150 PSI
P/N 12-01185
- For the professional. Heavy duty, w/check valves.


-  **AC309 AIRLINE™ - STANDARD DUTY CUTTING ATTACHMENTS** - Cutting capacity up to 3" thick (76mm) steel. Head Angle 90° USE IN: Torch Handles - AW1A, AW10A. P/N 12-01082

-  **CUTTING TIP** - Slip-in cutting tips for general medium duty hand cutting. Use with medium pressure acetylene and oxygen. USE IN: Cutting Attachments - DG109A, MC505, MC509, CC509P (all sizes); AC309 (Maximum tip size MC12-4). P/N 12-01192

-  **HUNTSMAN FACE SHIELD** - Dark green plastic window 8" x 11-1/2" snaps onto lightweight plastic adjustable headband. Permits full peripheral vision during work. Protects against radiation - flip up visor when not in service. Headband - Model KP/N 12-05000
- VisorP/N 8124D
- Complete ShieldP/N 12-05100

HUNTSMAN ELECTRONIC WELDING HELMET

Call for prices and information on the new Huntsman Autoview Welding Filters which provide uncompromising eye protection.

-  **WELDVIEW GOGGLES** - Full protection against radiation and impact in gas welding, cutting, burning and brazing. Can be worn over personal glasses. Glass cover plate and Filterweld plate supplied. Meets requirements of American National Stds. Inst P/N 12-04910

-  **TIP CLEANER SET** - 13 cleaners for #49 - #75 drill size orifices. P/N 12-01195

SINGLE STAGE REGULATORS

-  Gas Used: Oxygen Delivery Pressure: 0-100 PSIG, 0-7 BarP/N 12-19300
- Gas Used: Acetylene Delivery Pressure: 0-15 PSIG, 0-1 BarP/N 12-19400

-  **STANDARD DUTY TORCH HANDLE** - Inlet connections 3/8" - 24 right and left hand, fit "A" size hose nuts. Cuts up to 3" (76mm), welds up to 1/2" (13mm). Covered by the LIFETIME Warranty & Service Agreement. USED WITH: Cutting Attachment - AC309. Welding Tips - AW200 Series, AW400 Series. P/N AW1

-  **AW200 AIRLINE™ SERIES OXY-ACETYLENE** - USE IN: Torch Handles - AW1A & AW10A.

| For Metal Thickness Up To | Part No. | Price |
|---------------------------|----------|-------|
| 1/32" | AW201 | . |
| 1/2" | AW203 | . |
| 1/8" | AW205 | . |


-  **ONE SINGLE FLINT LIGHTER** - P/N 12-01194

- Box of Six Extra Flints for Lighter**
P/N 12-01193

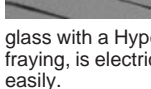
- TWIN HOSE** - 12-1/2 Ft. (3/16" I.D.)P/N RA921.....

- ONE PAIR AMERICAN OPTICAL WELDVIEW GOGGLES**
P/N 91225


TIP CLEANERS

-  Quality aluminum case with rustproof stainless steel wire. The long spiral cleans a large number of tip styles. A hardened steel file included in each case. P/N 12-05180

BULLDOG RED WELDING DAMAGE CONTROL CLOTH

-  This heavy duty red cloth is made from .015" thick fiberglass with a Hypercote finish. It resists abrasion and liquids, cuts without fraying, is electrically non-conductive and chemical resistant, and drapes easily. P/N 12-19500/lineal yd.

SILVER PENCILS

-  The best way to mark tubing. Will not corrode tubing and shows up well on greasy tubing. May be used to mark exhaust system without lead cracking P/N 12-05190

ECONOMY PORTABLE SAND BLASTING SYSTEM



A new portable blasting system for cleaning and surface preparation of metal, plastic, fiberglass or wood. Ideal for graffiti removal from brick or stone surfaces. Dee-Blast system consists of an abrasive hopper 20-1/2" high and 9-1/2" diameter molded PVC drum with tight fitting top to keep abrasive media clean. Hopper holds up to 65 lbs. of media. It has a 10 ft. long rubber hose, a full-length face shield and a trigger-operated blasting gun that completely mixes air and media to produce a uniform spray pattern. P/N 130

PORT-A-BLAST SANDBLASTER



The Port-A-Blast sand blast unit is the perfect tool for anyone who owns or flies an airplane. For removing paint and corrosion, cleaning spark plugs and even liquid blasting to clean your engine and parts. Its small compact design allows you to get into tight areas. Fill the container with an abrasive material and its ready to go to work. It will operate on as low as 60 psi. However, for best results, pressures of 100-500 psi are recommended. The higher

the pressure the faster the cutting will be. Port-A-Blast handles all types of abrasive, ranging from Silica Sand for average work to Nutshells for cleaning and polishing hard surfaces without scratching. For larger jobs you are also able to attach a siphon hose, and pull directly from a bucket. This is a versatile tool that every airplane enthusiast shouldn't be without. We now offer a kit for the enthusiast who's not quite sure which type of blast media the should use. The kit includes a Port-A-Blast gun and 4 media types: Glass Bead, Steel Shot, Nutshell, and Slag. We have also included a brief explanation of each media type and where it should be used.

- Port-A-Blast gun..... P/N 12-00172
- Flexible siphon tube P/N 12-00173
- Replacement Ceramic nozzle P/N 12-00493

DELUXE PORTABLE PRESSURE BLAST SYSTEMS



Model 1000

These Portable Pressure Blasters are designed to make the most efficient use of your air and abrasive supply. These are not inexpensive siphon units. The entire tank is filled with air and sand under pressure. When the nozzle and valve is opened the sand/air mixture is released under tremendous pressure to quickly remove paint, rust, scale and other coatings. These units are 3-5 times faster to use than siphon units. All units arrive complete with air gauge, pressure vessel, sandblast hood, and sandblast hose. Simply fill with abrasive and attach to your air supply and you are ready to begin blasting. Order by Part no.

ABRASIVES - Black Beauty: Economical, fast cutting abrasive. For quick removal of paint and rust. 80# bag. P/N 12-20740.....



Model 400

| Spec. Chart | Model 400 | Model 1000 |
|---------------------------|------------|-------------|
| Operating Pressure | 60-125 psi | 60-125 psi |
| ASME Tank | No | Yes |
| Sandblast Hose | 7 feet | 10 feet |
| Abrasive Capacity | 40-50 lb. | 100-120 lb. |
| Nozzle Size | 3/32" | 1/8" |
| Part Number: | 12-20725 | 12-20735 |
| Price: | . | . |

CENTURION TEAR-N-WEAR PROTECTIVE LENS COVERS

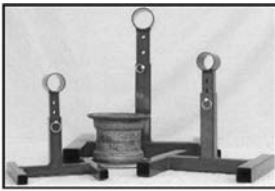


Each AOSAFETY Centurion® goggle TEAR-N-WEAR replacement lens protectors stack contains seven layers of high quality optically clear film. When the outer layer is soiled, scratched, or difficult to see through, simply "tear" the soiled layer off by pulling the tab horizontally from right to left. You now have clean and clear vision again and the next tab is automatically ready for your next tear away.

- P/N 12-00894

TO

SCALES - ROTATORS - TIRE BEAD BREAKERS



LANDING GEAR SAFETY STAND

The "Landing Gear Safety Stand" is a must! Anyone that has ever seen a plane slip off a jack knows! The stand slips on over the axle when ever the wheel is removed. Put the nut back on and the plane can't slip off the stand. It adjusts for height with a quick release pin. The

wide, stable "H" base is made from heavy gauge square steel tubing for strength, safety and durability. The unique stand is finished in an attractive, bright red powder coat finish. LGSS-2, has a 12" x 12" base with adjustable axle height of 10"-15", and LGSS-3 has an 18" x 18" base with adjustable height of 14"-21.5".

- 9" Stand P/N 12-02015
- 12" Stand P/N 12-00255
- 18" Stand P/N 12-00256

STRUT SERVICE TOOL



Service Strut in your Sunday Suit.

- Clean way to service struts.
- Strut valve core is NOT removed.
- Hose fitting releases pressure & fluid into the bottle.
- Raise & lower strut a few times, then apply the charge.

P/N 12-16792

PRO SERIES STRUT SERVICE TOOL



The Pro Series Strut Service Tool has all the great attributes of the original Strut Service Tool, with the addition of a dual tank and dual check valve design. The longer service hose makes it easy to attach. Strut pressure, fluid and foam is captured in one tank. Clean, foam-free fluid is drawn back into the strut from the second tank. Simplicity, cleanliness and less waste make this tool a must-have. The strut valve core is not removed. P/N 12-00677

AT508K CANNON CONNECTOR PLIERS



The AT508K features serrated jaws for improved gripping and a slip joint for improved leverage. Ideal for all common cannon connector applications. P/N AT508K

PRECISION AIRCRAFT SCALES FOR ACCURATE WEIGHT & BALANCE



Checks aircraft weight and balance after modifications or fitting of new accessories. Flight safety is improved by periodic weighing to verify weight and balance is within limits. Simply roll the aircraft up the ramps onto the scales or jack the wheels and slide the pads under tires. A single high performance strain gauge load cell is

in each pad. Temperature compensation prevents zero shift or sensitivity changes. Weighing pads, indicator and cables are color coded for easy match up. Include one 3 channel indicator, three colored cables, one 110V battery charger cable, three ramps, and six tire stops. Also includes a case.

| Part No. | Capacity | Price |
|----------|---|-------|
| 12-16711 | 2,500 lbs. per pad | . |
| 12-16715 | 6,000 lbs. per pad | . |
| 12-16721 | 10,000 lbs. per pad | . |
| 12-16725 | 15,000 lbs. per pad | . |
| OPTIONS | | |
| Part No. | Description | Price |
| 12-16730 | Extra cable, colored | . |
| 12-16735 | Extra ramps, small, set of 3 | . |
| 12-16740 | Extra ramps, large, set of 3 | . |
| 12-16745 | Extra tire stops (chocks) | . |
| 12-16750 | 220V Battery Charger Cable for overseas | . |



TIRE BEAD BREAKER

Once the tire & wheel have been removed from the airplane, the air is let out of the tire. The "Tire Bead Breaker" is used to break the bead or bond between tire and wheel. The "TBB" let you safely break this bead almost without effort & with-out doing damage to the expensive cast wheels. One broken wheel half can easily cost more than the "Tire Bead Breaker"!

The "Tire Bead Breaker" adjusts to fit tires as small as tailwheel tires and as large as those tires found on large, corporate cabin planes. Can be used on both tube and tubeless tires.

P/N 12-16790



TIRE BEAD BREAKER

The universal design of this tire bead breaker accommodate tube type and tubeless tires. It is easily adjustable for a wide range of tire sizes up to as large as tires for Twin Beech and Aero Commanders. Features all steel construction. P/N 13-02360

ACCUGAGE PROFESSIONAL TIRE GAUGE



This very accurate bourdon tube tire gauge offers precision pressure control and a rugged steel case with rubber shock-absorbing cover. It comes complete with a 12" long flexible braided hose, a bleeder valve, and stop hand. It is easy to read the pressure on this 2" gauge with 1" psi markings and 60 lb. range. Excellent for use on aircraft tires as well as cars and trucks.

P/N 13-00437

TIRE PRESSURE MONITOR SYSTEM

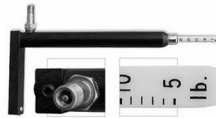


Southern Precision Components Inc. is introducing a Wireless Tire Pressure/Temperature LCD Monitor (TPMS). With the flip of a switch, this battery operated, hand held unit, displays the actual tire pressure and tire temperature.

Small removable electronic valve sensors transmit pressure/temperature to the LCD monitor within 25-50 feet of the aircraft. The sensors can be easily removed when adding air to the tires, and when placing the sensors back on the valve stems, will send the new pressure readings to the LCD monitor. Pressure can be read as PSI, KPA, BAR, or KG/CM squared. Temperature can be read in Centigrade or Fahrenheit. The monitor also has an alarm setting for high or low pressure. The battery has an average life of two years. P/N 05-04367

ings to the LCD monitor. Pressure can be read as PSI, KPA, BAR, or KG/CM squared. Temperature can be read in Centigrade or Fahrenheit. The monitor also has an alarm setting for high or low pressure. The battery has an average life of two years. P/N 05-04367

AIR ARM TIRE FILLING ADAPTER



This adapter permits the easy air charging of tires inside of most light aircraft wheel pants. The Air Arm will couple to virtually all air dispensing connectors in the aircraft field. The Air Arm can be ordered with or without the gauge adapter head.

P/N 12-30180

TEMPIL MARKERS



Marks easily on metal, ceramic, glass, plastic, wood and paper. Markings are fast drying, permanent, weatherproof. Won't rub off, run, fade, chip, peel or blister. The surface can be wet, dry, rough, smooth or oily. Efficient on any horizontal, vertical or inclined surface. Long-lasting

6" ball point tube with non-clogging point.

- Black..... P/N 12-11901.....
- Red P/N 12-11907
- White P/N 12-11908.....
- Yellow P/N 12-11911

RUGGLES AIRCRAFT SCALES



Ruggles Scales make it easy and affordable for you to compute weight and balance on your own aircraft any time and any place. They are small and easy to transport. With their drive on capability, there is no need to jack up each wheel to slide scales in place. Ruggles Scales

use the principle of a fulcrum and a very long lever. So simple, the only tool you will need is a screwdriver for calibration. Sturdily constructed of cadmium plated steel and precision engineered for accuracy. Complete instructions are included with scales. Not certified. Capacity is 3600 lbs. (1200 lbs. per wheel). Scale can be set to either 2:1 or 4:1 ratio. Tricycle gear set includes 3 arms and 3 scales. Taildragger set includes 2 arms and 3 scales.

- Tricycle gear Ruggles Scales set..... P/N 12-21400.....
- Taildragger Ruggles Scales set P/N 12-21450.....

TO

AIRCRAFT JACKS - PARTS CARTS

MEYERS HYDRAULICS AIRCRAFT JACKS



Meyers Hydraulics have been recognized as the industry standard for aircraft jacks for over 25 years. Professional mechanics rely on the AJS Jack Set for applications requiring heavy-duty lifting capacity, smooth maneuverability, and reliability. Refer to the Application Chart below for the components required for your aircraft, and then order from the price list accordingly.

| Aircraft | Jacks | Tailstand | Legs | Tubes & Caps |
|--|--------------------|-----------|---------|------------------------|
| Aero Commander | (2) A-6 | (1) ATS | (2) AJL | (2) AT-4 |
| Beech: Model 50, King Air, Queen Air | (2) A-6 (1) A-5 | --- | --- | --- |
| Beech: Bonanza, Debonair, Travelaire, Baron | (2) A-5 | (1) ATS | --- | (1) AT-3 |
| Mooney | (2) A-5 | (1) ATS | --- | --- |
| Piper: All except Navajo & Aerostar | (2) A-5 | (1) ATS | --- | --- |
| Piper Navajo & Aerostar | (2) A-6 | (1) ATS | --- | --- |
| Cessna: Cardinal RG | (2) A-6 | (1) ATS | --- | (2) AT-4 (2) ATC-8 |
| Cessna: All high wings RGs except Cardinal | (2) A-6 | (1) ATS | (2) AJL | (2) AT-4 (2) ATC-8 |
| Cessna: All 300 & 400 Series | (2) A-5 | --- | --- | (2) AT-28 (3) ATC-4 |
| Navion | (2) A-5 | (1) ATS | --- | (2) AT-28 |

| Part No. | Description | Price | AJS | Height Ranges |
|----------|----------------|-------|---------------|---------------|
| 12-21405 | A-5 Jack | . | A-5 w/AT-1* | 22"/36" |
| 12-21410 | A-6 Jack | . | A-5 w/AT-28 | 28"/42" |
| 12-21415 | ATS Tail Stand | . | A-5 w/AT-3 | 34"/58" |
| 12-21435 | AJL Leg | . | A-6 w/AT-2* | 34"/58" |
| 12-21440 | AT-1 Tube | . | A-6 w/AT-4 | 54"/78" |
| 12-21445 | AT-2 Tube | . | A-6 w/AJL | Legs+10" |
| 12-21455 | AT-3 Tube | . | ATC-4 Cap | +1 to 4" |
| 12-21460 | AT-4 Tube | . | ATC-8 Cap | +1 tp 8" |
| 12-21465 | AT-28 Tube | . | ATS Tailstand | 30"/51" |
| 12-21470 | ATC-4 Cap | . | | |
| 12-21475 | ATC-8 Cap | . | | |

(*) ATC Caps will not work on these tubes.

AJS UNIVERSAL AIRCRAFT JACK SET

The AJS Universal Aircraft Jack Set from Meyer Hydraulics has served as the general aviation industry standard for over 25 years. Professional mechanics rely on the AJS Jack Set for applications requiring heavy duty lifting capacity, smooth maneuverability, and unquestioned reliability. The AJS Set lifts all retractable gear aircraft weighing up to 8000 lbs.

AJS System:

- | | |
|--|-----------------|
| 1. A-5 Jack w/ AT-3 Tube | 6. AT-3 tube |
| 2. A-5 Jack w/ AT-1 Tube | 7. AT-1 tube |
| 3. ATS Tallstand | 8. AT-4 caps |
| 4. A-6 Jack w/ AT-2 Tube | 9. AT-2 tube |
| 5. A-6 Jack w/ AT-4 Tube & AJL Leg Set | 10. AT-4 tube |
| | 11. AJL Leg Set |

P/N 12-21476

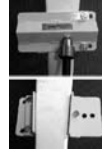
AJS2 DELUXE JACK SET

Includes one complete AJS Jack system (describes above) plus one A-5 Jack with AT-1 tube, one AT-28 tube, and one ATC-4 cap. A very popular Jack system for general aviation maintenance.

P/N 12-01378

JACK PADS

Jack pads provide a cradle for the main landing gear legs. The cradle design securely holds the landing gear providing a safe jack point. The adjustable jack pad fits flat spring gear. The round gear jack pad fits the models listed below. • Save time when servicing tires, wheel bearings and brakes • Lift only the wheel instead of the whole aircraft • Eliminate the unsafe practice of stacking wood blocks under a bottle jack • All parts pack away neatly into a sturdy weather resistant toolbox • Made in USA



FLAT PIVOT POINT ADJUSTABLE JACK PAD - * Adjust width, taper and angle adjustment. * Adapts to many jacks. Shown with bottle jack. * Fits: Cessna C-120, 140, 150, 170, 172, 175, 180, 185, 182, 188, 190, 195, 205, 206, 336, 337, flat gear 177RG, Piper Tomahawk, Beech Skipper, Champion, Bellanca, and similar spring steel landing gear. P/N 12-00837



ROUND JACK PAD ADJ-R - Jack pads provide a cradle for the main landing gear legs. The ADJ-R has a half round design cradles the landing gear safely. Pivots on a machined bottle jack extension. Use with Cessna C-172RG, 177RG, 182RG, 210, T210, P210, and similar landing gear P/N 12-00679



C300 JACK PAD ADJ-300 - * Cessna 300, 400 & 500 series * Perfect for the Conquest & Citation. * Sold in Singles. P/N 12-00683

JACK EXTENSIONS

* Bottle Jack Extensions will fit any 1-1/4" O.D. ram. * Typical 6 ton jack has a 1-1/4" O.D. ram. * Extensions are machined & slide together for easy stacking. * Use on aircraft with a jack point pin. * Not the same extensions as found in the Aero Jack Kit below. * No special jack pad needed on tubular C-152, 172, 182 etc.

- 1.5" extensionP/N 12-00156
- 3" extensionP/N 12-00157
- 6" extensionP/N 12-00158

INNOVATIVE PARTS CARTS

Keep parts and pieces from taking off. Cut clutter and down time. Everyone needs one or more - at work or at home, innovative parts carts people become very attached to their parts carts. They're virtually indestructible. Make users more efficient, productive and better organized - plus they're good looking and customizable.



INNOVATIVE PARTS CART A™ - * Industry's easiest-nesting /catalog. * Perfect size for "lighter-hit" jobs. * Makes a great portable workstation. * High-carbon, heat-treated steel shelf brackets for years of trouble-free use. * All shelves have upper side rails to prevent parts slide-off. * Four industrial grade total-lock caster wheels for mobility; zero movement when locked. * Durable powder coat finish stays new-looking longer. * Shown with optional Shelf Mat. * U.S. Patent #7,314,413 * Other Patent Pending. * 42"W x 31"D x 44"H * Shelves measure 40"W x 24"D * Shelves adjust every 3" * Weight rated to 125 lbs. per shelf * Includes: * 2 adjustable shelves * 2 adjustable support arms * 2 bungee cords * 6 metal hooks * 73 lbs. PN 12-02023



INNOVATIVE PARTS CART B™ - * Industry's easiest-nesting /catalog * 30% more shelf positions that any other parts /catalog. * High-carbon, heat-treated steel shelf brackets for years of trouble-free use. * All shelves have upper side rails to prevent parts slide-off * Four industrial grade total-lock caster wheels for mobility; zero movement when locked. * Durable powder coat finish stays new-looking longer. * Assembles in less than 20 minutes. * U.S. Patent #7,314,413 * Other Patent Pending. * 42"W x 31"D x 75"H * Shelves measure 40"W x 24"D * Shelves adjust every 3" * Weight rated to 125 lbs. per shelf * Includes: o 3 adjustable shelves o 2 adjustable support arms o 2 bungee cords o 6 metal hooks * 92 lbs. PN 12-02024






INNOVATIVE PARTS CART C™ - * Easiest shelves in the industry to adjust. * Provides 32 sq. ft. of shelf space! * High-carbon, heat-treated shelf brackets for years of trouble-free use. * All shelves have upper side rails to prevent parts slide-off. * Durable powder coat finish stays new-looking longer. * Shown with optional RO Holder. * U.S. Patent #7,314,413 * Other Patent Pending. * 42"W x 50"D x 75"H * Shelves measure 40"W x 24"D * Shelves adjust every 3" * Weight rated to 125 lbs. per shelf * Includes: o 6 adjustable shelves o 4 adjustable support arms o 2 bungee cords o 6 metal hooks * 152 lbs. PN 12-02025

TO


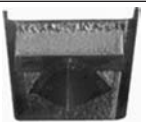

AIRCRAFT JACKS

AIRCRAFT JACKS

Constructed of welded square steel tubing. The three leg design clears close tolerance gear doors, such as Bonanzas and Barons. All models have machine jack point centering cap with casters, jack handle holder and positive locking jack point centering cap with casters, jack handle holder and positive locking collars. Oversize shipping charges apply.

| Aircraft Jacks | Image | Part No. | Price |
|--|---|----------|-------|
| Piper and Mooney Jack and other light twins and singles Height 26"-45". Cylinder Capacity **6,000 lbs. Note: Mooneys require 26" clearance plus room for the cap or the Jack will not fit. |  | 12-99115 | . |
| Cessna 300 & 400 Jack Series. Same as the J-105 except height 27"-52". Cylinder capacity **16,000 lbs. |  | 12-99120 | . |
| Tail Stand 18"-35: |  | 12-99130 | . |

JACK POINTS

| Aircraft Jacks | Image | Part No. | Price |
|--|---|----------|-------|
| Adjustable Jack Points Fits Cessna 150, 172, 182, 188, Citabrias, Bellancas, & Grumman. Slide bar adjusts easily to a number of widths and infinite angles on aircraft with flex spring steel main gear legs, which allows use of one pad for several applications. Compatible with most jacks, including bottle and floor jacks. All steel construction and powder coated finish to resist scratches. |  | 12-01373 | . |
| Cessna Jack Points Spring Gear Type |  | 12-01374 | . |
| Mooney Jack Points (Sold Individually) |  | 12-01375 | each |

JACK LIFT PAD



This Jack Lift Pad is quality made of alloy steel and is adaptable to all bottle type hydraulic jacks. The serrated vee design provides positive holding. It is easy to install and proves a great variety of applications.
P/N 12-30270

REDLINE DOLLY-JACK



The Dolly-Jack is a self contained, portable system that can lift any main wheel or nose wheel with the turn of crank for routine maintenance and tire changes. It allows the plane to spin around in its own space. Made in the USA using 4130 Chromoly material.

FITS THESE PIPER: Arrow, Lance, Saratoga (RG), Malibu, Matrix, Meridian, Seminole.

FITS THESE BEECHCRAFT Bonanza, Baron, Travel Air, T-34
P/N 13-03380

AERO JACK KIT



The Aero Jack System saves time when changing tires or working on landing gear. Use a combination of innovative tools packed in a handy toolbox. Designed by an A&P, for do-it-yourselfers and other mechanics, three kits are available depending on your needs.

| Description | Part No. | Price |
|---|----------|-------|
| Complete Aero Jack System - Service both flat and round gear from a handy toolbox. | 12-00254 | . |
| Flat Gear Aero Jack Kit - Cessna C-120, 140, 150, 170, 172, 175, 188, 182, 190, 195, 205, 206, 336, 337, flat gear 177RG, Piper Tomahawk, Beech Skipper, Champion, Bellanca, and similar landing gear. | 12-00681 | . |
| Round Gear Aero Jack Kit - Cessna C-172RG, 177RG, 182RG, 210, T210, P210, and similar landing gear. | 12-00682 | . |
| Expandable Aero Jack System - Included in the tool box is: Bogert Tribal Jack with all the jack pads. (C210, RG, R, FPP, Moon, Musk, C300). Weight is 30 lbs. | 12-02096 | . |

BOGERT TRIBAL JACK



Forget expensive wing jacks for simple projects! Reach for Bogerts 6-ton Tribal Aircraft Jack! Raise each wheel independently in seconds. Service brakes or bearings, and change a tire in seconds. Adjustable lifting height, with a range of 3.5" to 11.5". Originally designed for Pipers, thus the name "Tribal Jack", it is also used on King Air, Muskateers, Debonairs, Sundowners, Mooneys and most with near vertical landing gear. Max. load is 2500 pounds.
P/N 12-00838

BOGERT LIL LIFTERS



LITTLE LIFTER

- * Lightweight, 8.5 lbs
- * Lift Range 2.75" to 9.5"
- * 4 pivoting pads included
- * Use with 800X6 tires or smaller



LITTLE LIFTER II

- * Lightweight, 10 lbs
- * Lift Range 2.75" to 13.5"
- * 4 pivoting pads included
- * Us with 800X6 tires or larger
- * Picture shown with 2 liter bottle



LITTLE LIFTER III

- * Lightweight, 13 lbs
- * Lift Range 2.75" to 19.25"
- * 4 pivoting pads included
- * Use with 31" tires

| Description | Part Number | Price |
|------------------------------|-------------|-------|
| Bogert 30M-LL MAX 8" LIFT | 12-00839 | . |
| Bogert 30M-LL 2 MAX 13" LIFT | 11-06948 | . |
| Bogert 30M-LL 3 MAX 31" LIFT | 11-06949 | . |

RV JACK STAND KIT



Someday you'll need to jack up your aircraft to install new tires, clean & grease wheel bearings, or fix a flat. This nifty jack stand is safer than using an engine hoist or the wing tie down location. Requires a modification to the axle nuts (about 1 hour). Kit includes the axle jack arm, axle nut modification hardware, & directions to modify the nuts. For hollow axles (Wittman style) Gear only. Uses automotive bottle jack. Jack not included. Not for RV-8s. For RV Gear Legs with Hole in Axle.
P/N 12-00634

PROP SLING, (BOGI-LIFT)



- The tool every mechanic needs!
- * Lift nose wheel without jacking up whole plane.
 - * Service nose wheel & strut effortlessly.
 - * Support a new propeller during installation.
 - * Use with 2 and 3 blade props.
 - * 4-point stability with tail & wing jacks.

P/N 12-16718

TO

AIRCRAFT JACKS

THREE TON HYDRAULIC AIRCRAFT JACKS



MODEL #324 3 TON LOW WING JACK - Eliminates the frustration of having unstable jacks that conflict with landing gear components and gear doors adjacent to your jack point. These jacks are especially appreciated by owners of Bonanza, Mooney, Comanche, & Twin Comanche Aircraft for the manner in which they may be positioned clear of the inner gear door hinge. Model #324 provides an easy slide under fit on aircraft with lower jack points. • **DOUBLE ACTION 3 TON (6,000lbs) HYDRAULIC CYLINDER** • **JACK POINT CENTERING CAP** • **LOCKING SAFETY COLLAR SECURES THE LOAD** • **RUGGED HEAVY GAUGE STEEL CONSTRUCTION** • **STABLE THREE LEG DESIGN CLEARS GEAR DOORS** • **CONVENIENT HANDLE STORAGE** Effective Range: 24"-40" Ram Capacity: 6000lbs P/N 12-01724.....



MODEL #326 3 TON LOW WING JACK - 26" - 43" Eliminates the frustration of having unstable jacks that conflict with landing gear components and gear doors adjacent to your jack point. Owners of Beechcraft Bonanza 33/35/36 aircraft especially appreciate these jacks for the manner in which they may be positioned clear of the inner gear door hinge. If the only plane you'll be lifting is the Bonanza... please see Model #324. • **JACK POINT CENTERING CAP TO ASSURE THE AIRCRAFT STAYS ON THE JACK** • **DOUBLE ACTION 3 TON (6,000 lb) HYDRAULIC CYLINDER** • **LOCKING SAFETY COLLAR SECURES THE LOAD** • **RUGGED HEAVY GAUGE STEEL CONSTRUCTION** • **THREE LEG DESIGN CLEARS GEAR DOORS** • **CONVENIENT HANDLE STORAGE** Effective Range: 26"-43" Ram Capacity: 6000lbs P/N 13-05544.....



MODEL #332 3 TON LOW WING JACK - 26" - 43" & 32" - 49" Especially suited for use on Cessna 310/320 Aircraft. Supplied with a removable 6" riser to accommodate the higher jack points found on some aircrafts. Similar in design to Model #326, this unique design allows the Model #332 to be easily converted for use as a Model #326 by removing the 6" riser. Owners report this versatility to be of great benefit when aircraft of various types are housed together or the jacks are loaned out to others. • **DOUBLE ACTION 3 TON (6,000 lb) HYDRAULIC CYLINDER** • **JACK POINT CENTERING CAP TO ASSURE THE AIRCRAFT STAYS ON THE JACK** • **6" RISER PROVIDED TO ACCOMMODATE HIGHER JACK POINTS** • **EFFECTIVE RANGE 26"-43" & 32"-49"** • **LOCKING SAFETY COLLAR SECURES THE LOAD** • **RUGGED HEAVY GAUGE STEEL CONSTRUCTION** • **THREE LEG DESIGN CLEARS GEAR DOORS** • **CONVENIENT HANDLE STORAGE** Effective Range: 26"-43" & 32" - 49" Ram Capacity: 6000lbs P/N 12-01725.....

THE ULTIMATE WHEEL LIFT FOR RV AIRCRAFT



- Mounts in back of the wheel on the axle
- Requires no hoist or bottle jack.
- No blocking required after wheel is removed - completely free standing.
- Wheel will come off and go back on with no changes or other equipment.

- Wheel is raised with rotation of hand crank - positive movement with full control.
- Total weight 4 lbs.
- Lays flat for storage in aircraft compartment.
- Will fit either right or left main wheels.

Note - will not fit on RV8 flat axles

P/N 12-01751.....

EIGHT TON HYDRAULIC AIRCRAFT JACKS



MODEL #838W 8 TON UNIVERSAL JACK - 26"-43", 32"-49", 38"-55" When the need is for a versatile jack that can accommodate the needs of a busy FBO, the Model #838W is the choice. Model #838W provides all the strength and versatility needed to accommodate larger aircraft. This unique design allows the Model #838W to easily convert from a 26" low wing jack to a 32" or 38" jack, avoiding the high cost of having to purchase model specific jacks. Now with "Tilt & Go" wheels and convenient handle storage for greater value • **DOUBLE ACTION 8 TON (16,000LB) HYDRAULIC CYLINDER** • **HIGHLY VERSATILE- SHIPPED WITH ADAPTERS FOR 26" 32" & 38" HEIGHTS** • **JACK POINT CENTERING CAP TO ASSURE THE AIRCRAFT STAYS ON THE JACK** • **LOCKING SAFETY COLLAR SECURES THE LOAD** • **STABRUGGED HEAVY GAUGE STEEL CONSTRUCTION** • **THREE LEG DESIGN CLEARS GEAR DOORS** • **"TILT & GO WHEELS FOR GREATER MOBILITY** • **CONVENIENT HANDLE STORAGE** Height Range 26"-43", 32"-49" & 38"-55" Ram Capacity: 16,000 lbs. P/N 12-01726.....

MODEL #868W 8 TON UNIVERSAL JACK - The ULTIMATE in versatile heavy duty general aviation jacks. When the need is for a versatile jack that can accommodate the needs of a busy FBO, the Model #868W is the choice. The Model #868W combines all the strength and versatility of Model #838W with the necessary fittings to accommodate High Wing Cessna Aircraft such as 172RG, 177RG, 182RG, 210 and 337. Shipped with adapters, our unique design allows the Model #868W to easily convert from a 26" low wing jack through the 32" and 38" levels to a 68" high wing jack, avoiding the high cost of having to purchase model specific jacks. • **DOUBLE ACTION 8 TON (16,000 LBS.) HYDRAULIC CYLINDER** • **HIGHLY VERSATILE- SHIPPED WITH ADAPTERS FOR 26", 32", 38", & 68" HEIGHTS** • **DOUBLE BRACED AT THE 68" HEIGHT FOR STABILITY** • **JACK POINT CENTERING CAP TO ASSURE THE AIRCRAFT STAYS ON THE JACK** • **LOCKING SAFETY COLLAR SECURES THE LOAD** • **RUGGED HEAVY GAUGE STEEL CONSTRUCTION** • **STABLE THREE LEG DESIGN CLEARS GEAR DOORS** • **TILT & GO WHEELS FOR GREATER MOBILITY** • **CONVENIENT HANDLE STORAGE** Height Range: 26"-43", 32"-49", 38"-55", 68"-87" Ram Capacity: 16,000 lbs P/N 12-01727.....



MODEL #375 TAILWEIGHT/POST - A tailweight that doubles as a tail post and can be moved easily about the shop. This unique design allows the secure anchoring of Compression or Torsion Loads without the need of numerous sand bags and anchor chains. The #375 Tailweight/Post is a safer and much more professional approach to securing the tail of an aircraft undergoing maintenance. Shipped knocked down, the Model #375 is easily assembled and weighted using Six (6) - 60 lb bag of Quickcrete - obtained locally. • **SINGLE UNIT PROVIDES THE TAILPOST AND TAILWEIGHT FUNCTIONS** • **NO MORE SANDBAGS** • **TELESCOPING SQUARE TUBE POST PINS IN 3" INCREMENTS** • **RUGGED SWIVEL CASTERS** • **CORROSION RESISTANT GALVANIZED WEIGHT BOX** • **SHIPS AT 32 lbs. - FINISHED WEIGHT 375 lbs.** Range of Adjustment: 17½" - 39½" P/N 12-01728.....



ACCESSORIES

MODEL #324, 326, 332 WHEEL KIT.
We call them "Tilt and Go" because they do not touch the ground until you tilt back. P/N 12-02032.....

TAILWEIGHT EXTENSION.
Adds 13" to the post for higher wing aircraft like the bigger Cessna's P/N 12-02033.....

TO

SAFETY EQUIPMENT

HOBBYAIR RESPIRATOR



The Hobbyair Pro 1 is a fresh air breathing system specifically designed for the amateur painter which allows only fresh air to reach the user's lungs. It features a comfortable, lightweight face-mask with beltline hook, simple snap together fittings, and is very affordable. Includes the pump unit with two stage, single speed, air bypass type motor, mask, belt and 40 foot delivery hose, fittings, filter, cord and case. The Buddy System Hobbyair is designed for two people and includes two 40 ft. delivery hoses. 1 yr warranty. Excellent for use in homebuilt aircraft construction and painting.

- Hobbyair Pro 1 (1/2 mask) 110V P/N 12-15850
- Hobbyair Pro 1 (1/2 mask) 220V P/N 12-15860
- Buddy System Hobbyair (110V)..... P/N 12-15870
- Hobbyair Pro (Full mask) P/N 12-15851
- Hobbyair II..... P/N 09-00633

CITATION 4 HVLP SPRAYER/RESPIRATOR



Similar to, but much more powerful than their standard CITATION unit, this new sprayer will allow its' user to achieve 'show plane' quality results to a level never before possible with a turbine powered system. Do you have HVLP finish quality reservations? You can forget about them with this new system! The CITATION '4' offers a much higher PSI range without sacrificing the benefits of HVLP

such as lower overspray, the elimination of moisture and high transfer efficiency. This is all accomplished with a more powerful, yet quieter and cooler running turbine blower. Like the standard CITATION, this new system, of course, offers the additional benefit of a built-in supplied-air respirator to assure breathing protection for its' user.

P/N 12-00973

PAINT SPRAY RESPIRATOR



Chemical-cartridge respirator for protection against organic vapors, paint, lacquer and enamel mist and dusts. Replaceable pre-filters and chemical cartridges. Approved by U.S. Bureau of Mines and the National Institute for Occupational Safety & Health (MESA/NIOSH Approval No. TC-95).

- #95110, Respirator P/N 12-15700
- #95111, Replacement Cartridges Set of Two P/N 9511.....
- #95112, Replacement Pre-Filters Set of Two P/N 95112.....

#R185B, Clips for Pre-Filters Pkg. of 2 P/N 12-01197

3M™ PARTICULATE RESPIRATORS



P/N 09-01496



P/N 09-01497

Helps provide worker protection against certain non-oil based particles. Comfortable, easy to use, and promotes greater worker acceptance increasing wear time. Features 3M's patented filter media, nose foam, and adjustable noseclip that helps provide a secure seal and helps reduce eyewear fogging. Workplace applications: woodworking, grinding, sanding, sweeping, bagging, other dusty operations.

| Description | Part No. | Price |
|--------------------|----------|-------|
| Standard dust mask | 09-01496 | . |
| Vented dust mask | 09-01497 | . |

3M™ PROFESSIONAL SERIES RESPIRATOR ASSEMBLY



3M recommended for exposures to organic vapors and mists commonly associated with spray painting, lawn and garden pesticides, staining or refinishing decks and many other workplace/occupational applications.

- Small P/N 09-01489.....
- Medim P/N 09-01490.....
- Large P/N 09-01491.....

3M™ PROTECTIVE EYEWEAR



1730 SERIES - Meets the requirements of ANSI Z87.1-2003 as high impact protectors. Black and Clear..... P/N 09-01488.....

1740 SERIES - Meets the requirements of ANSI Z87.1-2003 as high impact protectors.

Black and Clear P/N 09-01725.....



1752 SERIES - Stylish safety eyewear with a contemporary appearance. Lightweight. Comfortable fit afforded by gel-like nose piece and soft temples. Polycarbonate lens offers 99% UV protection, and has anti-scratch coating. Meets ANSI Z87.1-2003 as high impact protectors.

Blue and Clear..... P/N 09-01726.....



PROFESSIONAL SAFETY GLASSES -

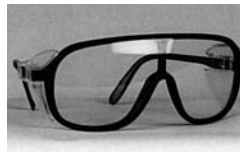
- For the professional or serious do-it-yourselfer
- Ideal for outdoor use (PN 13-90751)

Clear and Black..... P/N 13-90750.....

Tinted grey and Black P/N 13-90751.....

FOR OTHER 3M™ PRODUCTS SEE PAGES 345-352

SAFETY SPECTACLES



These safety spectacles feature a contoured shape which offers unobstructed vision, excellent side protection and comfort fit bridge. Front color and temple color is black. Lens and sideshield color is clear

P/N 13-01310/ea.

IMPACT GOGGLES



Protects eyes from flying objects. Can be worn over personal glasses. Perforated mask reduces fogging. Fully adjustable elastic headband. Clear polycarbonate lens, 050" thick, is easily removed for cleaning. Meets requirements of ANSI Z87.1 Goggles P/N 91200.....

Replacement Lens, Clear. P/N 91202.....

FULL-SEAL PROTECTIVE GOGGLES



These goggles completely shield the face from chemical splash, flying particles and dust. They are ideal for use with epoxies and paints and are included in our Safe-T-Plus Kits. Self-ventilating for comfortable wear. P/N 11-00317/ea.

SAFETY FACE SHIELDS



Provides protection for the face and neck against chemical splash and flying particles. Window 9" x 14". Unit adjusts easily to sizes 6 - 8-1/4. P/N 90029

Replace. Window, Clear P/N 90030.....

SCARAB SAND BLAST HOODS



Features durable construction and large size to cover the head, face, neck and shoulders to protect against the impact of high velocity abrasives. Made with super-heavy 10.38 oz. army duck canvas treated with high water repellent and mildew resistance. Complete with an ERB Safety built-in construction type hard hat that meets ANSI Z89.1-2003 (Type 1, Class E, G & C) and complies with OSHA regulations for industrial head protection.

Scarab Sand Blast Hood.....P/N 12-01665

Scarab Lite Sand Blast Hood..P/N 12-01666

ACCESSORIES

Lens for Scarab Blast HoodP/N 12-01667

Screen for Scarab Blast Hood.....P/N 12-01668

TO

SAFETY EQUIPMENT

3M™ AOSAFETY GOGGLES



AOSAFETY GOGGLE BX

- * Adjustable soft tip temples feel good even after extended wear
- * Soft universal-fit nose bridge
- * High impact polycarbonate lens blocks 99.9% UV
- * Three lens angles for custom fit
- * Available in Clear or Gray +1.50, +2.0 & +2.50 diopter lenses

P/N 09-02154



AOSAFETY GOGGLE VIRTUA SPORT

- * Meets ANSI Z87.1
- * Sleek - Styling with both men and women
- * Lightweight - Less than 1 oz
- * Contoured flexible temples for comfortable fit
- * Hard Coat guards against scratching, static and chemical attack

P/N 09-02155



AOSAFETY DUST GOGGLEGEAR

- * Vent channels at top and bottom for improved air flow
- * Lighter weight than most goggles for improved comfort
- * Soft foam backing seals out particulates
- * Meets the Impact Goggles requirements of ANSI Z87.1
- * Made in U.S.A.

P/N 09-02156



AOSAFETY GOGGLE OC CHOPPER

- * Extreme safety eyewear for indoor use
- * OCC styling
- * Clear anti-fog lens
- * Complies to ANSI Z87.1 high impact standards

P/N 09-02157



AOSAFETY LIGHTVISION 2 GOGGLE

- * Hands free direct lighting; anti-fog lens; available w/reader lens
- * Two ultra bright, adjustable LED lights
- * Long-life, replaceable CR2032 3V battery; includes bag and lanyard
- * Flexible nose bridge fits virtually all faces
- * Meets ANSI Z87.1-2003 and CSA Z94.3 standards

P/N 09-02158

FOR OTHER 3M™ PRODUCTS SEE PAGES 345-352



PELTOR WORKTUNES

Worktunes is a self-contained AM/FM noise attenuating headset (NRR 25db) which provides hearing protection combined with an AM/FM radio. Features include a wide, soft padded headband, flexible antenna

P/N 11-01589

PELTOR WORKTUNES

Safe listening at their fingertips. Just push the button on the PTL muff and speech and sounds "outside" the muff cup can be heard clearly and safely. After 30 seconds, the muff automatically returns to its full protection with a NRR of up to 26 dB.

Over-the-head Ear Muff... P/N 12-00895

Cap Attached Ear Muff.... P/N 12-00896

Hygiene Kit..... P/N 12-00897



NOISEBUSTER ANR EARMUFFS

Designed to reduce aircraft engine noise for airport ground support crews as well as aircraft maintenance and technical personnel, the NoiseBuster Active Noise Reduction (ANR) Safety Earmuff combines an ANSI-rated 26NRR passive earmuff with active noise reduction electronics that deliver up to an additional 20 db of low-frequency noise attenuation. Powered by a AA battery, the earmuff is resistant to water, moisture, contaminants, mechanical shock, and vibration.

Perfect for users who do not require two-way communications capability but who can benefit from protection. Includes: * NoiseBuster ANR Safety Earmuff * One AA battery * 3.5 mm audio interface cable * Warranty - 6 months

P/N 11-07369



HEARING PROTECTOR

This 3-position ear muff offers protection from high noise levels. Lightweight comfort, effective design combine to provide high performance attenuation. Can be worn over or behind head, under chin.

P/N 97030

PELTOR PERSONAL HEARING PROTECTOR



Peltor Personal Hearing Protectors Provide maximum attenuation in severe noise environments such as jet engines, riveting, and industrial high noise areas. Features include soft, broad ear cushions and softly padded head band. Combined liquid and foam filled ear seals give good sealing and low surface pressure.

P/N 12-16110



DAVID CLARK DELUXE HEARING PROTECTOR

The David Clark Deluxe Model Hearing Protector provides maximum noise attenuation and optimum comfort. Features urethane covered ear seals, soft foam cushioned headband, military quality materials, finish and workmanship.

P/N11-09205



CABOT HEARING PROTECTORS

The Cabot hearing protectors are lightweight and comfortable, allows commands to be heard, liquid/foam ear cushions, and padded, adjustable headband.

P/N 12-01172

E-A-R NOISE FILTERS

E-A-R CLASSIC



- * Most popular earplug in the world
- * NRR 29dB
- * The E-A-R® Yellow color is your assurance of proven protection
- * Moisture resistant dermatologically safe foam is not irritating
- * Slow recovery PVC foam provides comfort with low pressure

P/N 9134

P/N 09-02148 w/ Cord

CLASSIC™ PLUS



- * Classic Plus are longer than Classic earplugs to fit deeper into the ear canal and provide a higher level of protection.
- * Slow-recovery foam helps ensure comfort and minimize pressure.
- * Bright yellow color provides a quick visual compliance check.
- * Dermatologically safe foam is non-irritating, non flammable, and moisture-resistant.

P/N 09-02149

P/N 09-02150 w/ Cord

E-A-R SOFT™ YELLOW NEONS™



- * NRR 33dB-Highest NRR available
- * THE WORLD'S SOFTEST EARPLUGS
- * Self-adjusting foam provides low pressure with excellent attenuation
- * Exciting designs and brilliant colors
- * Dermatologically safe foam is non-irritating to the skin

P/N 09-02151

P/N 09-02152 w/ Cord



E-A-R EARBUDS 2600 HEADPHONES

- * NRR 26dB
- * Noise Limited to 82dB
- * Convenient, Easy-Access Volume Control
- * Mp3 Compatible
- * Blocks out External Noise
- * Hear Your music while you work
- * Ultra Comfortable Design
- * Better fit for longer wear

P/N 09-02153

TO

DRAEGER X-PLORE TWIN FILTER RESPIRATORS

X-PLORE 3300 SERIES RESPIRATORS



The 3300 Series Mask is an economical half mask made of TPE material with a continuous grey color neck strap.

Under the new particulate filter rules, there are three series of filters: N, R, and P. The N filters are Not resistant to oil; the R filters are resistant to oil; and the P filters are oil proof.

The N series of filters is appropriate for airborne particles such as silica or lead, when there are no oil-based products also in the air.

For example, an N series filter would be recommended during the removal of old lead paint. However, for spraying an oil-based lead paint, an R or P series filter would be recommended as protection against the airborne mist of oil-based solvent.

The R series (resistant to oil) should only be used for a single shift when solvent or oil mist is present in the air. This filter resists oil but may break down in contact with oil or solvent over a long time.

When using P series filters, check the manufacturer's instructions to determine how long the filter can be used when airborne particles are present. NIOSH originally thought that P series filters were oil-proof but recent tests have found there may be some breakdown of the filter material with long-term oil exposure.

Note: N, R, and P filters do not provide protection against organic vapors.

3300/N95 RESPIRATOR KIT

Kit includes 3300 Mask, 2 each N95 filter pads, 2 each filter pad retainers, and 2 each filter pad bases. P/N 12-02261

3300/R95 RESPIRATOR KIT

Kit includes 3300 Mask, 2 each R95 filter pads, 2 each filter pad retainers, and 2 each filter pad bases. P/N 12-02262

3300/P100 RESPIRATOR KIT

Kit includes 3300 Mask, 2 each P100 filter pads, 2 each filter pad retainers, and 2 each filter pad bases. P/N 12-02263

X-PLORE 3500 SERIES RESPIRATORS



The 3500 Series Mask is a premium half mask made of Draeger Flex Material. Clasped Slide-Down feature with a black neck strap.

Under the new particulate filter rules, there are three series of filters: N, R, and P. The N filters are Not resistant to oil; the R filters are resistant to oil; and the P filters are oil proof.

The N series of filters is appropriate for airborne particles such as silica or lead, when there are no oil-based products also in the air.

For example, an N series filter would be recommended during the removal of old lead paint. However, for spraying an oil-based lead paint, an R or P series filter would be recommended as protection against the airborne mist of oil-based solvent.

The R series (resistant to oil) should only be used for a single shift when solvent or oil mist is present in the air. This filter resists oil but may break down in contact with oil or solvent over a long time.

When using P series filters, check the manufacturer's instructions to determine how long the filter can be used when airborne particles are present. NIOSH originally thought that P series filters were oil-proof but recent tests have found there may be some breakdown of the filter material with long-term oil exposure.

Note: N, R, and P filters do not provide protection against organic vapors.

3500/N95 RESPIRATOR KIT

Kit includes 3500 Mask, 2 each N95 filter pads, 2 each filter pad retainers, and 2 each filter pad bases. P/N 12-02264

3500/R95 RESPIRATOR KIT

Kit includes 3500 Mask, 2 each R95 filter pads, 2 each filter pad retainers, and 2 each filter pad bases. P/N 12-02265

3500/P100 RESPIRATOR KIT

Kit includes 3500 Mask, 2 each P100 filter pads, 2 each filter pad retainers, and 2 each filter pad bases. P/N 12-02266

X-PLORE 3300 COMBINATION CARTRIDGE KIT



The combo cartridge is a P100 filter, and also filters out organic vapor/acid, gas, formaldehyde, chlorine dioxide, and hydrogen fluoride. Kit includes mask and one combo cartridge. P/N 12-02267

X-PLORE 3500 COMBINATION CARTRIDGE KIT



The combo cartridge is a P100 filter, and also filters out organic vapor/acid, gas, formaldehyde, chlorine dioxide, and hydrogen fluoride. Kit includes mask and one combo cartridge. P/N 12-02268

REPLACEMENT PARTS FOR 3300/3500 KITS

| Description | Part No. | Price |
|----------------------------|----------|-------|
| 3300 Series Mask Only | 12-02253 | . |
| 3500 Series Mask Only | 12-02254 | . |
| N95 Filter Pad Only | 12-02255 | . |
| R95 Filter Pad Only | 12-02256 | . |
| P100 Filter Pad Only | 12-02257 | . |
| Filter Pad Retainer | 12-02258 | . |
| Filter Pad Base | 12-02259 | . |
| P100 Combination Cartridge | 12-02260 | . |

TO

OXYGEN SYSTEMS



AEROX HIGH-DURATION AVIATION OXYGEN SYSTEMS

Add to your flying comfort by using oxygen at altitudes as low as 5000 ft. Aerox Oxygen Systems include lightweight aluminum cylinders, regulators, all hardware, flow meter, and nasal cannulas (masks available as option). Oxsaver oxygen saving cannulas & Aerox Flow Control Regulators increase the duration of oxygen supply about 4 times, and prevent nasal irritation and dryness. Complete brochure available on request.

500 SERIES REGULATOR - AN AIRCRAFT SPRUCE EXCLUSIVE!



- Low profile
- 1, 2, & 4 place
- Standard Aircraft filler for easy filling
- Convenient top mounted ON/OFF valve
- Equipped with Aerox standard plug sockets
- Over pressure safety valve
- Built in cylinder pressure gauge

COMPLETE AEROX SYSTEMS (ADJUSTABLE FLOW)

| Part No. | Model | Description | Price |
|----------|-------|--|-------|
| 13-18895 | 1A | 1 outlet, 6 Cu Ft. Cyl. w/Flow Meter & Cannula | . |
| 13-18896 | 1C | 1 outlet, 9 Cu. Ft. Cyl. w/Flow Meter & Cannula | . |
| 13-18897 | 1D | 1 outlet, 13 Cu Ft. Cyl. w/Flow Meter & Cannula | . |
| 13-18898 | 2A | 2 outlet, 6 Cu. Ft. Cyl. w/Flow Meters & Cannulas | . |
| 13-18899 | 2C | 2 outlet, 9 Cu Ft. Cyl. w/Flow Meters & Cannulas | . |
| 13-18900 | 2D | 2 outlet, 13 Cu. Ft. Cyl. w/Flow Meters & Cannulas | . |
| 13-18901 | 2E | 2 outlet, 22 Cu Ft. Cyl. w/Flow Meters & Cannulas | . |
| 13-18902 | 2M | 2 outlet, 22 Cu. Ft. Cyl. w/Flow Meters & Cannulas | . |
| 13-18903 | 4C | 4 outlet, 9 Cu Ft. Cyl. w/Flow Meters & Cannulas | . |
| 13-18904 | 4D | 4 outlet, 13 Cu. Ft. Cyl. w/Flow Meters & Cannulas | . |
| 13-18950 | 4E | 4 outlet, 22 Cu Ft. Cyl. w/Flow Meters & Cannulas | . |
| 13-18906 | 4M | 4 outlet, 22 Cu. Ft. Cyl. w/Flow Meters & Cannulas | . |
| 13-18915 | 6M | 6 outlet, 22 Cu Ft. Cyl. w/Flow Meters & Cannulas | . |
| 13-18905 | 6F | 6 outlet, 33 Cu. Ft. Cyl. w/Flow Meters & Cannulas | . |

AEROX ACCESSORIES

| P/N | Description | Price |
|----------|---|-------|
| 13-18910 | CC Oxsaver Cannula | . |
| 13-18960 | MSK-C Rebreather Mask (Child) | . |
| 13-18920 | CR-A Regular Cannula | . |
| 13-18970 | Metal Clamp Bracket for 13 or 22Cft cyl | . |
| 13-18930 | CR-C Reg. Cannula (Child) | . |
| 13-18940 | MSK-A Rebreather Mask | . |

AEROX BASIC RETRO FIT KIT



FITTING IDENTIFICATION CHART (Not Sold Separately)

AEROX RETROFIT KITS FOR BUILT-IN SYSTEMS OR OTHER PORTABLES

The Aerox® Retrofit Kit consists of 3 parts:

- 1.) Oxsaver® Cannula—this comfortable device may be used in place of your mask up to 18,000 ft. MSL. It has a conserving feature which can extend your oxygen supply by up to four times.
- 2.) Aerox Flowmeter/indicator—this combination device conveniently reads both mask and cannula flow

rates in MSL altitude. 3.) Aerox Adjustable Flow Restrictor—a thumb screw operated needle restrictor valve allows you to precisely control flow. Shown are most of the connectors for general aviation. If you want us to supply the connector, be sure to indicate which is your type.

| Model | Retrofit Kits | Part No. | Price |
|---------|--|----------|-------|
| RK-SC | Retrofit Kit plus Scott type fitting SC | 13-18992 | . |
| RK-PB-1 | Retrofit Kit plus Puritan-Bennett type fitting | 13-18994 | . |
| RK-PB-2 | Retrofit Kit plus Puritan-Bennett type fitting | 13-18995 | . |
| RK-SK | Retrofit Kit plus Sky-Ox fitting (new style)SK | 13-18996 | . |
| RK-CPC | Kit with CPC fitting for Cirrus | 13-05152 | . |
| RK-SC | RK-SC with - Flow Meter Needle Valve Option | 13-05582 | . |

AEROX GLOW IN THE DARK FLOWMETER AND GAUGE

AEROX'S PATENTED GLO-TEC FLOWMETER - Precision Adjustable, Direct inline oxygen flow indicator with photoluminescent technology for extended night-time visibility.

PN 13-05251

AEROX'S PATENTED GLO-TEC PRESSURE GAUGE - Pressure Gauge, 0-3,000 PSI, Rear Mount, with photoluminescent technology for extended night-time visibility.

PN 13-05250



AEROX PRO-O2 EMERGENCY HANDHELD OXYGEN SYSTEMS

In the event that the primary oxygen system fails, the Pro-O2 provides oxygen until the aircraft can reach a lower altitude. And because Pro-O2 is refillable, there is no need to purchase replacement O2 cartridges.

During short flights at altitudes between 12,500ft. MSL and 14,000ft. MSL where maneuvering over mountains or turbulent weather is necessary, the Pro-O2 emergency handheld oxygen system provides oxygen to extend these brief legs. Included with the refillable Pro-O2 is a regulator with gauge, mask and a refillable cylinder.

Pro-O2-2 (2 Cu. Ft./1 mask).....P/N 13-02735

Pro-O2-4 (2 Cu. Ft./2 masks).....P/N 13-02736



AEROX SILICON MASKS

Upgrade from a Scott mask with dynamic or carbon mic with these lightweight (4 oz.) silicon, quick donning masks. Very comfortable and includes 5 ft. of tubing and mic plug. Specify small, medium, or large. Effective up to 25,000 ft.

| Description | Part No. | Price | Description | Part No/ | Price |
|---------------|----------|-------|---------------|----------|-------|
| Small w/ Mic | 13-01020 | . | Small No Mic | 13-04963 | . |
| Medium w/ Mic | 13-00413 | . | Medium No Mic | 13-00414 | . |
| Large w/Mic | 13-01019 | . | Large No Mic | 13-04964 | . |



AEROX 4110-712 SERIES OXYGEN MASK WITH MICROPHONE

The 4110-712 Series continuous flow oxygen mask with microphone is intended for crew and passengers in the general aviation industry at a maximum altitude of 25,000 feet. Optional equipment includes industry standard fittings for connection to portable and built-in oxygen systems.

| Description | Aerox No. | Part No. | Price |
|---------------------------|------------|----------|-------|
| Small Without Microphone | 4110-711-1 | 13-06652 | . |
| Medium Without Microphone | 4110-711-2 | 13-06653 | . |
| Large Without Microphone | 4110-711-3 | 13-06654 | . |
| Small | 4110-712-1 | 13-06655 | . |
| Medium | 4110-712-2 | 13-06656 | . |
| Large | 4110-712-3 | 13-06657 | . |



AEROX SMOKE GOGGLES

Aerox has introduced Smoke Goggles with face forming elastomer seals to keep smoke out. Aerox Smoke Goggles are the choice of the U.S. Special Forces. The case features reflective tape to make goggles easy to locate as well as a velcro strip on the back for mounting.

P/N 13-06173.....

Soft Case..... P/N 13-06174.....



BR-M AEROX BRACKET

Bracket Assembly, SS, with Lock, or Cyl Diameter (2 needed per system) P/N: 13-04033

AEROX FBO-1 FILLING STATION

Whether making money or saving it, the Aerox FBO-1 Cascade Filling System makes it easy to fill all types of aviation systems, from portables to jets. The FBO-1 comes complete with 2 CGA 540 cylinder connectors, 6' high-pressure (3000 psi) braided stainless filler line, contents gauge, flow restrictor and adapters to fit Puritan-Bennett, Scott, and CGA 540 filler ports. P/N 13-04534.....

AEROX CGA-540 SINGLE CYLINDER FILLING STATION - Transfills between cylinders quickly and easily. 6' braided stainless line, gauge, restrictor, and CGA 540 filler. P/N 13-04535.....

OPTIONAL BUILT-IN ADAPTERS

| Image | Description | Part No. | Price |
|---|---|----------|-------|
| | Aerox Scott Built-in Adapter Option (Piper, Beech, Mooney) | 13-04536 | . |
| | Aerox Puritan-Bennett Built-in Adapter Option (all other makes) | 13-04537 | . |
| Portable System Filling adaptors for standard CGA 540 supply cylinders: | | | |
| | Aerox Scott Portable Filling Adaptor | 13-04538 | . |
| | Aerox Puritan-Bennett Portable Adapter Option | 13-04540 | . |

OXIMETERS - FACE MASKS

AEROXIMETER



Developed at the request of one of the major aviation manufacturers, this new product protects you from the 2 major biological dangers of flight: Lack of oxygen and carbon monoxide poisoning. The system uses an electronic light to measure the oxygen saturation in your blood. It easily slides on your finger and gives continuous updates on the pilot and copilot's blood oxygen levels and heart rates. This system also constantly measures the amount of carbon monoxide in the cockpit and displays 3 levels. Carbon Monoxide is an odorless and tasteless gas. Without a proper electronic warning system, it can very quickly cause drowsiness and unconsciousness. Size: 1-3/8" thick X 5" w X 2-5/8" h.

CO/LOW OXYGEN 1-PL..... P/N 13-02717
CO/LOW OXYGEN 2 PL..... P/N 13-02718

FLIGHT STAT PULSE OXIMETER



Know the symptoms of in-flight hypoxia and evaluate your pulse rate and blood oxygen saturation with the FlightStat® Pulse Oximeter. FlightStat provides an easy and accurate way to check for in-flight hypoxia instantly - providing crucial data before it's too late. P/N 13-03248

THE OWL AVIATION OXIMETER



Can detect blood oxygen concentration through the use of a small sensor placed on the tip of a finger or in a headband. The oximeter will determine if the oxygen concentration of the blood becomes too low and alert the pilot of potential hypoxia conditions. At an oxygen saturation of 90%, the OWL will alert the pilot through standard aviation headphones with an audible "caution" message. If the saturation should drop below 85%, the OWL will sound a "warning" message. As an added feature, the OWL will give saturation readings on demand-- at the push of a button. Will also alert the user in the event the batteries become low by an audible "caution" and a visual indication with a red LED. Will "speak" to the user to alert for low blood oxygen saturation. This enables the pilot to concentrate on flying the aircraft instead of requiring the constant monitoring of a display. This can be important when flying IFR, where a pilot must focus on the aircraft instruments. The OWL is also the only oximeter with a sensor intended for continuous monitoring. P/N 13-04284

EDS-2IP BUILT-IN PULSE DEMAND OXYGEN SYSTEM



Complete kits that include all you need to do high flight-level cross country flying with ultimate physiological safety. Kit includes the low-profile instrument panel or overhead-mountable EDS 2ip control head unit with a 2.25" X 2.25" form factor, two (2) remote-mountable oxygen outlet distributor units, the new IPR (Intelligent Peripheral Regulator) with our light-weight carbon-fiber-wrapped cylinder with a 48 cu. ft. capacity allowing many round-trips without oxygen refills. In addition, masks, cannulas, as well as necessary hardware and tubing are included. The pilot station comes with our, FAA-CAMI flight-level 250 tested 'Pulse-Demand' ALPS FaceMask that can be upgraded with a noise-cancelling microphone at any time. You can add the Alps face mask with or without microphone for your co-pilot as well.

EDS-4ip built-in Pulse Demand oxygen management systems are complete kits includes everything in the EDS-2IP but with the EDS 4ip control head unit with a 2.25" X 3.125" vertical form factor, and four (4) remote-mountable oxygen outlet distributor units

NOTE: The EDS ip systems automatically operate from a 12 or 24 Volt system at a mere 250 ma. of current. Therefore, if not specified, during your order the IPR will come with a 12 volt valve and the schematics will instruct that it be powered from the control head, via pin-19. The most preferred configuration. Otherwise the valve for the IPR must be specified for either 12 or 24 volt operation if you decide to power the IPR valve through system power and not from the control head.

EDS-2IP P/N 13-05745
EDS-4IP (Shown) P/N 13-05746

CHECK MATE II WRISTWATCH OXIMETER



The Check Mate IITM (manufactured by SPO Medical) is an effective and affordable wearable pulse oximeter ideal for spot-checking, during mountain climbing, light jogging and speed walking. Pilots/aviators can also quickly assess their SpO2 while

flying at high altitudes. The Check Mate II wristwatch oximeter offers the features of a conventional oximeter in a compact, lightweight user-friendly wrist-based configuration. The unit accurately measures blood oxygen saturation levels and heart rate. Readings are displayed on the wristwatch unit that sits comfortably on the patient's wrist for maximum convenience and flexibility. P/N 13-05673

CHECK MATE PULSE OXIMETER



Easy Spot Check Monitoring of Your Vitals!

SPO Medical's Check Mate™ offers the features of a conventional pulse oximeter in a compact, user-friendly configuration.

Check Mate™ accurately measures blood oxygen saturation levels and heart pulse rate. Pilots love Check Mate™ because it allows them to quickly assess their SpO2 while flying at high altitudes. Hypoxia can be a pilot's worst enemy, and Check Mate™ is a low-cost product which gives pilots peace of mind. Check Mate™ answers the sports and aviation markets' demand for a lightweight, inexpensive monitor for measuring blood oxygen saturation and heart rate during physically active and high-altitude activities. It offers the user a greater ability to monitor these vital signs under motion and is less expensive than most available devices. The unit is designed to utilize very low power for extended usage, eliminating the need for frequent battery replacement.

To operate simply place the sensor on your finger and turn it on. P/N 13-03920

FINGER PULSE OXIMETER



MD300 C201 is intended for noninvasive spot-check measurement of function oxygen saturation of arterial hemoglobin(SpO2). It can be used with adult and pediatric and widely used in family, clinic and hospital. Features: • SpO2%, PR are displayed on screen. • Simple and convenient operation • Light, compact (the weight is 50g including batteries) Low power consumption, two AAA batteries can be continuously Operated for 30 hours • Indication of low power consumption • Two display modes P/N 13-05666

EMOX EMERGENCY OXYGEN GENERATOR



Emox is a dependable lightweight, portable, powdered emergency oxygen system which is not pressurized and has no moving parts and is also non-corrosive, therefore no service or maintenance is required. Both powders are environmentally accepted, have an indefinite shelf life and have no fire hazard and are non-explosive and are supplied in hermetically pilfer proof sealed containers. Unit consists of a nylon carry bag, a specially designed plastic cylinder with operating instructions and a built-in humidifier, 3 x 15 minute white powder applications plus 3 activator catalysts, a face mask with a 1.5 meter tubing and a water measuring bottle. The total unit weighs a mere 1.75Kg.

System w/ 3 Refills P/N 13-06617
Refills w/ 4 Powder Charges P/N 13-06618

MOUNTAIN HIGH ALPS FACE MASK



FAA-CAMI tested with the EDS-ip system, MH ALPS FaceMask and the MH ALPS-M (for microphone) FaceMask. Outfitted with an electronic "Clear-Speak" ambient noise-cancelling microphone and is compatible with most aircraft systems. Easy to put on and exceptionally comfortable as it does not require a polyvinyl bag. The ALPS or the ALPS-M FaceMask can be used with any of the MH oxygen systems. Available in small, medium and large.

| Description | Part No. | Price | Description | Part No. | Price |
|----------------|----------|-------|-----------------------|----------|-------|
| Facemask Med | 13-04155 | .. | Facemask w/ Mic Small | 13-05134 | .. |
| Facemask Small | 13-05136 | .. | Facemask w/ Mic Med | 13-05135 | .. |
| Facemask Large | 13-05137 | .. | Facemask w/ Mic Large | 13-04156 | .. |



MOUNTAIN HIGH PORTABLE OXYGEN SYSTEMS FOR CESSNAS

"MH FDS O2D2 Pulse Demand FADOC Oxygen Delivery System" is designed for Cessna pilots. The MH EDS O2D2 is the only single unit, portable, two-place, carry-on Pulse Demand oxygen system currently available.

The MH EDS O2D2, with the patented digital electronic "Pulse Demand" FADOC oxygen delivery system, enables the pilot and passenger/crew to fly at pressure altitudes up to 25,000 feet with safety and comfort. The O2D2 digital pulse demand system reduces oxygen consumption dramatically. Different from "standard" constant flow systems, the O2D2 pulse demand system wastes no oxygen during the breathing cycle. Studies show that 90% of the oxygen supplied by the O2D2 is transferred to the blood. The average user will enjoy a conservative consumption drop of four times compared to constant flow systems. The system operates, with two people, for up to 50 hours on three AA alkaline batteries. Easy to use, the two-person O2D2 reduces oxygen system workload to almost nil. There are no oxygen flow indicators to watch or manually operated constant flow valves to adjust due to altitude changes. Two push buttons cycle the O2D2 through the various modes that automatically deliver the required supplemental oxygen pulses for various altitudes.

The complete standard system includes an aluminum oxygen cylinder (buyer has a choice of sizes with upgrades), a cylinder carry case, primary reducing regulator, low pressure service line, connection fittings, the MH EDS O2D2 FADOC unit, breathing cannulas, face masks, and a tote bag.

With Small (4-1/2" DIA) Cylinder..... P/N 13-05068.....
With Large (5-1/2" DIA) Cylinder P/N 13-05069.....

OXYGEN SYSTEMS



The XCP is a low-cost, high-duration multi-place oxygen system. With the A3 and Oxymizer cannula each person will use at most 1.0 liter/min. at 18,000 ft. This makes it easy to calculate your cylinder life time. Example: If you have 415 liters and four persons and are to cruise at 18,000 ft., you would divide 415 by 4 which equals 103 minutes per person. The flow rate at 18,000 ft. is typically only 3/4 (0.750) liter/minute with the Oxymizer cannula. However, 1.0 liter/minute is used as a worst-case scenario and for calculation convenience. The XCP delivery system consists of: 1 ea. XCP quad-port regulator with self-sealing outlets, 4 ea. XCP face masks (for use with the A4 flowmeter or nasal congestion), 4 ea. Nelson A3 flowmeter/regulators with 3' (three feet) of high quality tubing with CPC connectors and 4 Oxymizer® type "M" nasal cannulas, 1 ea. Oxygen cylinder (AL-415 or AL-682), 1 ea. Tuff-Pack padded fabric carry/strapping case for cylinder and equipment. The XCP system comes with the A3 flowmeter/regulator. It has an altitude/flow scale calibrated for the unique Oxymizer oxygen-conserving cannula. The scale is marked in 2,000 ft. increments for VFR flight levels up to 18,000 ft. You can operate the XCP in IFR flight levels with the optional A4 flowmeter/regulator and associated F1 face masks. This will, however, use much more oxygen. All systems are shipped empty.

MOUNTAIN HIGH XCP SYSTEMS



| Persons | XCP carry-on systems man-hour service time with the Nelson A3 flowmeter and Oxymizer cannula | | | | | | | | |
|---------|--|---------|---------|----------------|---------|---------|----------------|---------|---------|
| | 10,000 ft. MSL | | | 14,000 ft. MSL | | | 18,000 ft. MSL | | |
| | XCP 180 | XCP 415 | XCP 682 | XCP 180 | XCP 415 | XCP 682 | XCP 180 | XCP 415 | XCP 682 |
| 1 | 10:00 | 23:00 | 37:53 | 05:27 | 12:35 | 22:40 | 03:51 | 08:51 | 14:34 |
| 2 | 05:00 | 11:30 | 18:56 | 02:43 | 06:17 | 10:20 | 01:55 | 04:25 | 07:16 |
| 3 | 03:00 | 07:40 | 12:37 | 01:49 | 04:11 | 06:52 | 01:16 | 02:58 | 04:51 |
| 4 | 02:30 | 05:45 | 09:28 | 01:22 | 03:08 | 05:10 | 00:57 | 02:12 | 03:38 |

- XCP-682-4P-FP: 682 liter (24 cu.ft.) 4-pl. carry-on system w/Full-Pack padded cylinder carry/case 13-03657.....
- XCP-682-2P-FP: 682 liter (24 cu.ft.) 2-pl. carry-on system w/Full-Pack padded cylinder carry/case 13-03658.....
- XCP-682-1P-FP: 682 liter (24 cu.ft.) 1-pl. carry-on system w/Full-Pack padded cylinder carry/case 13-03659.....
- XCP-415-4P-FP: 415 liter (15 cu.ft.) 4-pl. carry-on system w/Full-Pack padded cylinder carry/case 13-03660.....
- XCP-415-2P-FP: 415 liter (15 cu.ft.) 2-pl. carry-on system w/Full-Pack padded cylinder carry/case 13-03661.....
- XCP-415-1P-FP: 415 liter (15 cu.ft.) 1-pl. carry-on system w/Full-Pack padded cylinder carry/case 13-03662.....
- XCP-180-1P-FP: 180 liter (6 cu.ft.) 1-pl. carry-on system w/Full-Pack padded cylinder carry/case 13-03653.....



MOUNTAIN HIGH HANDHELD OXYGEN SYSTEM

The Co-Pilot is an affordable, handheld oxygen system designed for supplemental breathing at high altitudes. This system is especially useful for pilots who only occasionally fly at altitudes requiring oxygen and, therefore, do not need a full-featured oxygen system for their aircraft. Unlike similar systems, the Co-Pilot's oxygen regulator has an on/off and volume control knob that is adjustable from off to 2 L/min. The face mask is removable and can be replaced with an Oxymizer cannula for continuous "hands-off" use for more than 30 minutes of duration per cylinder, at 15,000ft. At a glance, the built-in pressure gauge will allow you to see how much oxygen is available at all times. The Co-Pilot system can be shut off and stored with a cylinder installed for more than a year without any noticeable leakage. The basic Co-Pilot kit comes with regulator & gauge, face mask, two 18-liter non-refillable replacement cylinders, and an instruction manual. Options include additional cylinders, Oxymizer cannula, & holster pack. P/N 13-01016.....

MOUNTAIN HIGH EDS OXYGEN SYSTEMS



The EDS (Electronic Delivery System) is the first supplemental breathing system specifically designed for aviation to employ the tested and well founded pulse-demand method of oxygen delivery. This reduces the amount of oxygen wasted by as much as ten times over constant-flow systems, while providing over 90% blood saturation levels at and well above pressure altitudes of 25,000 ft. The EDS senses and synchronizes itself with your breathing to provide a pulse of oxygen when you benefit from it the most: at the very beginning of your inhalation cycle and not while exhaling, pausing or talking. Measurements show that up to 90% of the oxygen delivered is absorbed directly into the blood stream. A built-in density altitude barometer responds to altitude changes automatically, adjusting the oxygen amount as needed for each breath. The EDS has been hailed by several flight surgeons & physiologists as the most significant development in supplemental breathing devices since the advent of high altitude flying. Mountain High's current digital version, EDS-D1, is about the size of a cigarette pack, and it offers 9 modes of operation. All systems shipped empty.

- TR-95 Transfilling unit w/ variable flow transfer, fitting bleed valve and pressure/contents gauge. P/N 13-03925.....
- TR-75 Transfilling unit w/ "O" ring fittings and bleed valve P/N 13-03924.....
- TR-55 Transfilling unit with hand grip knob P/N 13-03923.....



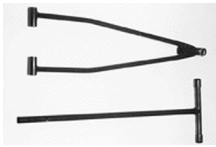
| Persons | Man-hour service time with cylinder @ 1,800 psig. with EDS unit(s) using cannula's or face mask(s) | | | | | | | | |
|---------|--|---------|---------|----------------|---------|---------|----------------|---------|---------|
| | 10,000 ft. MSL | | | 15,000 ft. MSL | | | 18,000 ft. MSL | | |
| | EDS 011 | EDS 022 | EDS 040 | EDS 011 | EDS 022 | EDS 040 | EDS 011 | EDS 022 | EDS 040 |
| 1 | 31:06 | 62:18 | 113:12 | 19:05 | 38:04 | 69:10 | 14:24 | 28:50 | 52:24 |
| 2 | 15:33 | 31:09 | 56:36 | 09:32 | 19:02 | 34:35 | 07:12 | 14:25 | 26:12 |
| 3 | 10:37 | 20:45 | 37:44 | 06:21 | 12:41 | 23:03 | 04:48 | 09:36 | 17:28 |
| 4 | 07:45 | 15:34 | 28:18 | 04:46 | 09:31 | 17:15 | 03:36 | 07:12 | 13:05 |

- EDS-022-FP: Kevlar fiber-wound cylinder, EDS unit, XCR regulator, cannula, face mask, Full-Pack & tote bag P/N 13-03665.....
- EDS-011-FP: Kevlar fiber-wound cylinder, EDS unit, XCR regulator, cannula, face mask, Full-Pack & tote bag P/N 13-03666.....
- EDS-480-FP: Glass fiber-wound cylinder, EDS unit, XCR regulator, cannula, face mask, Full-Pack & tote bag P/N 13-03667.....
- EDS-180-FP: Aluminum cylinder, EDS unit, XCR regulator, cannula, face mask, Full-Pack & tote bag P/N 13-03668.....

- EDS-040-2P-TF: Kevlar fiber-wound cyl., 2 EDS units, XCR regulator, cannula, face mask, Tuff-Pack & tote bag P/N 13-03669.....
- EDS-022-2P-FP: Kevlar fiber-wound cyl., 2 EDS units, XCR regulator, cannula, face mask, Full-Pack & tote bag P/N 13-03670.....
- EDS-415-2P-FP: Aluminum cylinder, 2 EDS units, XCR regulator, cannula, face mask, Full-Pack & tote bag P/N 13-03671.....
- EDS-480-2P-FP: Glass fiber-wound cyl., 2 EDS units, XCR regulator, cannula, face mask, Full-Pack & tote bag P/N 13-03672.....
- EDS-D1: Unit only, (less regulator)..... P/N 13-02389.....
- EDS-D1: Kit with XCR regulator P/N 13-02390.....
- EDS-D1: Kit with XCR gauged regulator P/N 13-02391.....
- EDS-D1: Kit with XCR-DIN regulator..... P/N 13-02392.....
- EDS-D1: System with CFF-480 cylinder (1 place) P/N 13-02387.....
- EDS-D1: System with CFF-480 cylinder (2 place) P/N 13-02388.....

PS

GROUND SUPPORT TOW BARS



CESSNA - This two piece telescoping tow bar fits all Cessnas with 5/8" lugs on nosegear. Overall length 42.5", collapsed 24".
P/N 13-01800.....



MOONEY - A simple "T" handle design for the Mooney axle. Overall length 33.5".
P/N 13-02000.....



CHEROKEE - This one piece tow bar has a retractable locking mechanism that gives a positive lock when installed. Overall length 31".
P/N 13-01600.....



BEECHCRAFT - The compact design of this tow bar makes it very popular among Beech owners. Overall length 38", collapsed 21.5".
P/N 13-01900.....



ARROW - This offset "T" handle design fits into the Arrow axle making it a simple and easy design to use. Overall length 33".
P/N 13-01700.....



TWIN CESSNA - The extra length provides extra nose clearance and leverage for Twin Cessnas and remains very compact. Overall length 55", collapsed 34".
P/N 13-01850.....



TWIN PIPER - The same as our P/N HH-007 except one piece construction. Overall length 33".
P/N 13-01778.....



COMANCHE - The same as our P/N HH-007 except one piece construction. Overall length 33".
P/N 13-02100.....



DELUXE CESSNA - The deluxe Cessna towbar is very popular and designed for those who demand the ultimate in convenience and durability. Spring loaded forks allow easy one handed engagement without getting on your hands and knees. Length 45.5" extended, 26" collapsed. Wt. 3.75 lbs. Ideal for Cessna RGs Including 210 series.
P/N 13-01540.....



DUTCHESS/PIPER - Fits Dutchess and Piper nose gear axle. Telescoping design provides extra nose gear clearance. Overall length 48", collapsed 28".
P/N 13-02210.....



DELUXE PIPER - The deluxe Piper towbar offers all the features of a standard Piper towbar plus the convenience of a two-piece design. When extended, this model provides additional propeller clearance and leverage. Length: 42" extended, 23" collapsed. Wt. 3.5 lbs.
P/N 13-01550.....



UNIVERSAL TOW BARS

CESSNA/ BEECH/ MOONEY - This universal tow bar is excellent for use with tug, tractor, or by hand. It fits most Cessna singles and twins with 5/8" lugs, Beech singles and twins with 1/4" lugs, all Mooneys, Twin Commanders, Lake and Comanche. Slide lock quickly adjusts & holds firmly.
P/N 13-02350.....

PIPER - Same design as the universal tow bar above, this towbar fits Piper single fork design, Arrow, Malibu, Lance, Seneca, and Seminole. Slide lock quickly adjusts and holds firmly.
P/N 13-02351.....



SCOTT TAILWHEEL - A tow bar designed for aircraft using a Scott 3000 series tailwheel. Overall length 48", collapsed 28".
P/N 13-02205.....



BEECHCRAFT AXLE - This two piece tow bar is designed for use in Beechcraft axles. Overall length 48", collapsed 27".
P/N 13-02215.....



CHEETAH/TIGER - This tow bar is designed to fit Grumman aircraft. Its collapsible design makes it easy to fit in the baggage area. Overall length 43", collapsed 26".
P/N 13-02200.....



ERCOUPE - Specially designed for Ercoupes. This tow bar has a spring loaded lever action for ease of operation. Overall length 46.5", collapsed 28.5".
P/N 13-01580.....



1-1/8" AXLE - This is a universal tow bar designed for aircraft with 1-1/8" axles such as Cessna Skymaster and Piper Seneca. Overall length 56", collapsed 33".
P/N 13-02110.....



COMMANDER - This model fits Rockwell 112 and 114. Spring loaded forks for ease of operation. Overall length 46.5", collapsed 28.5".
P/N 13-01570.....



DELUXE MOONEY - The deluxe Mooney towbar is a longer, two piece version of a standard Mooney towbar. Attractive black caps accentuate deluxe appearance. Length: 38", collapsed 21". Wt. 3 lbs.
P/N 13-01560.....



UNIVERSAL - For the FBO this is an ideal hand held universal tow bar. Fits Cessna, Beech, Piper, Scott Tailwheel and many others. Overall length 57", collapsed 34".
P/N 13-02250.....



VIKING - Designed especially for Bellanca Viking axle. Collapsible design and spring loaded fork. Overall length 46.5", collapsed 28.5".
P/N 13-02220.....



DELUXE BEECHCRAFT - Spring loaded forks for ease of operation. Overall length 47", collapsed 28".
P/N 13-01905.....



FBO UNIVERSAL TOW BAR

This heavy duty universal tow bar is standard equipment for FBO's. It fits Piper, Cessna, Beech, Mooney, AeroCommander, and many others. The adjustable fork allows you to extend the fork assembly from 3" to 10". This tow bar is extra long at 7 ft. 6".
P/N 13-02355.....

AIRCRAFT WINCH & MOUNTING KIT



AIRCRAFT WINCH - Hook cable to tail tie-down ring and press button. Easily moves aircraft up to 3,000 lbs. rolling weight. Includes wall mount. If a floor mount is desired order P/N 13-06124. Order bracket separately. Comes with 100' of cable and 75' of control cord and has an automatic safety shut off. Cable speed is 30 feet per minute. Voltage 110 DC.....
P/N 13-01764.....



HEAVY DUTY AIRCRAFT WINCH - Winch includes metal wind up drum, 100' of cable 125' of control cord. Moves aircraft up to 6,000lbs. Includes a wall mount. If floor mount is desired P/N 13-06124 must be ordered. Code 7
P/N 13-06125.....



AIRCRAFT WINCH MOUNTING KIT - Aircraft Winch Mounting Kit Everything you need to secure the winch to the floor. Mounting kit only. Can be used with P/N's 13-01764 and 13-06125 in a floor mount is desired.
P/N 13-06124.....



TOW BARS

BOGERT TOW BARS (BOGI-BARS)



Light enough to stow Built from a combination of steel for maximum durability comfort grips on the handle and spreader bar chip resistant red bar will look great for years. Operation: extend the handle easily with high shear wick release pin apply forward pressure on the spreader bar to open the wishbone jays. Line up the Bogi-Bar attachment at the tow points or axle depending on model.

Release the tension on the spreader bar and you are locked on! The tow bar will not slip off the plane. Reverse for removal.

| TAIL WHEEL AIRCRAFT | | | | |
|---------------------|---|-----------------|----------|-------|
| Model | Fits | Extended Length | P/N | Price |
| 4-API | Aircraft Products Tailwheel | 48" | 12-02097 | . |
| 4-ABI | Alaskan Bushwheel | 48" | 13-06106 | . |
| 04M-XP | Cessna XP Modification | 48" | 13-06107 | . |
| 4-TDG | Scott 3200 & 3400 | 48" | 13-10000 | . |
| 4-F24 | Fairchild 24, Beech Stagger Wing | 48" | 13-02410 | . |
| 4-RV | Vans RV3, RV4, RV6 & RV8 | 48" | 13-02408 | . |
| NOSE WHEEL AIRCRAFT | | | | |
| Model | Fits | Extended Length | P/N | Price |
| 4-35 | Beechcraft- Bonanza, Debonair, Duchess, Duke & Skipper | 49" | 13-10030 | . |
| 4-19/23B | Beechcraft-Musketeer, Sport, Super, Sierra & King Air | 48" | 13-01808 | . |
| 4-17/30 | Bellanca-Viking Series | 48" | 13-01809 | . |
| 4-172 | Cessna 150, 152, 172, 175, 177, 182, 310R, RV-4 | 48" | 13-10040 | . |
| 4-206 | Cessna 205, 206 & 207 | 48" | 13-10060 | . |
| 4-210 | Cessna 172RG, 177RG, 182RG & 210 Series | 48" | 13-10050 | . |
| 4-SR | Cirrus SR 20 & 22 | 48" | 13-06108 | . |
| 4-AA | Gulfstream American AA1 & AA5 | 48" | 13-02407 | . |
| 4-Lake | Lake Amphibian | 48" | 13-02411 | . |
| 4-Moon | Mooney Aircraft | 48" | 13-01810 | . |
| 4-24/30 | Piper Comanche PA-24, PA-30 & PA-39 Also the Cherokee Six axle w/pants if tabs above wheel are broken | 48" | 13-10010 | . |
| 4-22/28 | Piper PA-22, & PA-28 Series (Not PA-28R) | 48" | 13-10020 | . |
| 4-28R | Piper PA-28R Series - Hand Pull for dog-leg style | 49" | 13-02098 | . |
| 4-34 | Piper Seneca PA34 200/220/220T, and Aerostar 601P *handle extends to 78" | 78" | 13-01812 | . |
| 4-PA46 | Piper Malibu & Mirage-Vehicle Pull | 72" | 13-06112 | . |
| 4-RVA | Vans - RV6A, RV7A, RV8A, & RV9A | 48" | 13-01811 | . |
| 4-LANCE | Lance Towbar | 48" | 12-02099 | . |
| 4-20 | Diamond DA20 | -- | 13-06111 | . |
| 4-DA40 | Diamond DA40 | -- | 13-06110 | . |
| 4-DA42 | Diamond DA42 | -- | 13-06109 | . |
| 4-RV10 | Vans - RV10 | 48" | 13-04282 | . |
| 4-Socata | Socata Style Bogi Bar | 49" | 13-06113 | . |
| Agusta | Agusta Helicopter.Handle extends to 70" | 70" | 13-01813 | . |

BRACKETT AIRCRAFT TOW BARS

MODEL TH-5



The TH-5 is a scaled down version of the TR-3 tractor towbar. Excellent for operators and tee hangar owners who need a towbar which is light-weight (14 lbs), has good large pulling handles, and is sturdy enough for towing Cessna 150's to 310's. Size: 74"L. Wt: 14 lbs.

Ring Hitch.....P/N 13-10110
Ball HitchP/N 13-10111
Clevis HitchP/N 13-01884



MODEL TR-6

Excellent for towing aircraft such as the T-6, P-51, Stearman, Staggerwing Beech, or any aircraft with 3/4" or larger eye bolts. Length: 12' Spread: 12 ft. Weight: 62 lbs.

Ring Hitch.....P/N 13-10131
Ball HitchP/N 13-10130

MODEL TR-34



The TR-34 has the light weight of the TR-3, and the strength of the TR-4. It has the same universal features that fit most aircraft from C-150 through aircraft up to 14,500 lbs. Wt: 35lbs. Available in 3 hitch styles.

Ring Hitch (TR-34R)P/N 13-10085
Ball Hitch (TR-34B)P/N 13-01886
Clevis Hitch (TR-34C)P/N 13-01887

Optional Tail Wheel Adapters TWA-10 (for Scott tail wheels)
P/N 13-10089



MODEL TH-53 - Features a tow bar length of 80" to 94" (extended). Wt: 22 lbs., Max. aircraft Wt: 7,000 lbs.

TH-53R Towbar w/Ring hitch.....P/N 13-03338
TH-53B Towbar w/Ball hitch.....P/N 13-03339
TH-53C Towbar w/Clevis hitch.....P/N 13-03340

MODEL TR-71, 72, & 73



Lightweight aluminum designed for Waco, Stearman, & Cessna 195 type aircraft. Length: 100", Spread: 90", Wt: 22 lbs. Hook dia: TR-71 (.850), TR-72 (1.25)

TR-71B Towbar w/Ball hitch.....P/N 13-01907
TR-72B Towbar w/Ball hitch.....P/N 13-01908
TR-73B Towbar w/Ball hitch.....P/N 13-01909
TR-71R Towbar w/Ring hitch.....P/N 13-01910
TR-72R Towbar w/Ring hitch.....P/N 13-01911
TR-73R Towbar w/Ring hitch.....P/N 13-01912

CUSTOM TOWBARS & OPTIONS FOR UNIVERSAL TOW BARS

| Model | Description | Part No. | Price |
|----------|--|----------|-------|
| TWA-10 | Scott Tail Wheel Adapter (2 pcs. req.) | 13-10089 | . |
| T-MU2-10 | Kit-Crank & head assembly for converting TR-34 to TR-44 | 13-01890 | . |
| TWA-11 | Tail Wheel Adapter for DGA-Staggerwing (2 pcs. req.) | 13-01891 | . |
| T-4W | Wheel Set (Set of 2) for TR-34 | 13-01892 | . |
| T-375 | Adapter .375" for Aerospatiale-Trinidad, Tabago (2 pcs.) | 13-01893 | . |
| T-475 | Adapter .475" Outer Diameter (2 pcs. req.) | 13-01894 | . |
| T-625 | Adapter .625" for Augusta 109 & Others (2 pcs. req.) | 13-01895 | . |
| T-750 | Adapter .750" for Commander 114, S-76 & Other | 13-01896 | . |
| T-Maule | Adapter for Maule Tail Spring (1 pc. req.) | 13-01897 | . |
| T-34-04 | Shock Absorbing Ring Hitch (1 pc. req.) | 13-01899 | . |
| TR-PC | Towbar: Pilatus PC-12, 3 pcs., 30 lbs. | 13-01686 | . |
| TR-PCS | Towbar: Pilatus PC-12, 1 pc., 19 lbs. | 13-01903 | . |
| TR-S2 | Towbar: Avres: 3 pcs., 18 lbs. | 13-01755 | . |

PS

TOW BARS

THE TAIL-DRAGGER DRAGGER



This manual tow bar has heavy-duty solid rubber 8-inch wide tread wheels and will move most tail-draggers up to 2,000 lbs. and tail wheel tires up to 10 inches in diameter. Options Available: Hitch Arms for towing, 3rd Wheel for heavier ships, and RV tail wheel lift pin.

Tail-Dragger Dragger™ Features:

- Patented Design
- No Winches
- No Hydraulics
- No Metal To Metal Contact
- No Adapters Required
- Superior Traction

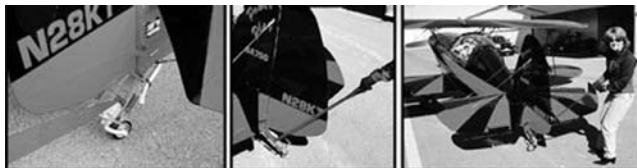
- 5 Second Loading & Unloading
- Will fit Almost Any Aircraft
- Tail Wheel Stays In Trailing Position
- Lifting Pins Grip & Lift Tail Wheel
- Maneuver In Any Direction
- Operator Has Good View Of Wingtips

| Description | Part No. | Price |
|-------------------------------------|----------|-------|
| Standard tail Dragger | 13-01510 | . |
| Tail Dragger Towbar Hand/Pin Hitch | 13-01520 | . |
| Tail Dragger Towbar Hand/Ball Hitch | 13-01530 | . |
| Tail Dragger Dragger Electric RV | 13-01823 | . |
| 24V Electric Tail Dragger Dragger | 13-03736 | . |
| Tail Dragger Dragger Gas | 13-01824 | . |

ACCESSORIES

| Descriptions | Part No. | Prices |
|-----------------------------------|----------|--------|
| Towing Hitch Arm - 1-7/8" ball | 13-04927 | . |
| Towing Hitch Arm - 2" ball | 13-04928 | . |
| Towing Hitch Arm - Pin / Clevis | 13-04929 | . |
| Towing Hitch Arm - Ring | 13-04930 | . |
| 3rd Wheel Assembly | 13-04931 | . |
| RV Tail Wheel Lift Pin | 13-04936 | . |
| 12v Electric Gel Battery | 13-06221 | . |
| Dual wheel traction assembly SA-1 | 13-06222 | . |

POCKET TOW TAILWHEEL LEASH



Black Pocket



Red Pocket

Pocket tow makes tail wheel aircraft maneuvering easy. Made with one-inch heavy-duty nylon webbing, the lightweight tow bar alternative is small enough to fit in your pocket and works on tail wheel aircraft with a 360-degree full-swivel tail wheel assemblies. The small end loops around the tail wheel leaf spring and cinches up tightly to pull and steer the aircraft backwards without pushing or pulling on any flight surfaces. Tailwheel leash - Black P/N 13-04681 Tailwheel leash - Red..... P/N 13-04682.....

NOSE WHEEL DRAGGER DRAGGER



The Nose-Dragger Dragger features a swing gate front roller (for easy loading), 10 ball bearing rollers (which push and guide the nose wheel), and does not require the use of adapters, winches, or hydraulics. Effortless ground handling is accomplished by its lightweight design and slow walking speed. The Nose-Dragger Dragger accepts nose wheels up to 600 x 6 (with or without wheel fairings), and no metal-to-metal or metal-to-fiberglass contact. Available in gas or electric power models. The 12V electric powered Nose-Dragger Dragger will accept aircraft up to 3,000 lbs. The Nose-Dragger Dragger Gas powered model accepts aircraft up to 6,000 lbs. Please call 1-877-477-7823 for freight quote.

Gas Powered, 6.5HP (up to 12,000 lbs)..... P/N 13-05103.....
 Electric Powered, 12V (up to 3,500 lbs)..... P/N 13-05105.....
 Electric Powered, 24V (up to 6,000 lbs)..... P/N 13-04304.....
 Electric Powered, 24V (up to 6,000 lbs)..... P/N 13-03205.....

ACCESSORIES

Snow Chains P/N 13-04932.....
 Battery Charger - 12V P/N 13-04933.....
 Battery Charger - 24V P/N 13-04934.....
 Mag-Light / Head Lamp..... P/N 13-04935.....

EXTRA HEAVY DUTY 6HP GAS TAIL-DRAGGER DRAGGER

This powerful gas tug has an extra heavy-duty frame, an extra center bearing for the axle, a longer handle for better leverage, heavy duty 12 -inch air wheels and will move most tail-draggers up to approx. 7,500 lbs. and tail wheels up to 16 inches in diameter. This is nice for aircraft like Beech-18, Most Ag planes, BT-13, SNJ, T-6, Beaver, Howard, Reliant, heavy Cessna's C-195, C-185, 450 Stearman's, and many other tail draggers. P/N 13-04390

HEAVY DUTY TOW BUDDY CORDLESS POWERBAR

Features: • No Flammable gasoline needed in hangar • Easy To Use • Infinite Speed Control • Versatile Applications • Push button forward and reverse controls • Nose gear quick attach for easy nose gear hook up. • The adjustable fork height fits virtually any light aircraft • Trickle charger for battery • Large 16 x 6.50 - 8 turf tire • For aircraft weight of 3500 to 4500lbs. P/N 13-04513

BRACKETT MULTI-LINK TOW BARS



User benefits: All tow bars and heads are interchangeable with other popular tow bar systems such as tronair© warranty on all materials and workmanship money saving alternative to multiple tow bars

BRACKETT AIRCRAFT'S MULTI-LINK TOW BAR LINE CONSISTS OF TOW BARS THAT UTILIZE CHANGEABLE HEADS WHICH ALLOW YOU TO TOW A LARGE VARIETY OF TURBO PROP AND JET AIRCRAFT. THE TYGA LINE OFFERS A STANDARD MULTI-LINK SYSTEM FOR AIRCRAFT WITH MAXIMUM TOW WEIGHTS OF UP TO 125,000 POUNDS. ALL HEADS AND TOW BARS ARE INTERCHANGEABLE WITH MANY WIDELY USED MULTI-HEAD TOW BAR SYSTEMS. YOU NOW HAVE A HIGH QUALITY AND COMPETITIVE SOURCE FOR TOW BARS, CHANGEABLE HEADS, AND ACCESSORIES.

| Description | Part No. | Price |
|-------------------------------|----------|-------|
| TY-TB125 Multi-Link Towbar | 13-04157 | . |
| TY-TB75 Multi-Link Towbar | 13-04158 | . |
| TY-TB-FTD Flat Tire Dolly T/B | 13-04159 | . |



TOW BARS

ROBOTOW PORTABLE TOW BAR



Aircraft Spruce is pleased to offer the new all weather Millennium model Robotow. It is lightweight (under 30 lbs.) and portable, making it ideal for carrying onboard your aircraft. When the Robotow's heavy duty all weather knurled drive drum is held against the nose wheel, the aircraft is easily moved. A trigger on the handle controls the speed while a switch reverses direction on command. Powerful, portable, and dependable, Robotow is an ideal motorized towbar for the aircraft listed below. Order axle adapters separately.

| Description | Parts # | Price |
|---|----------|-------|
| Robotow 6302 18V Towbar Cordless, with 5amp Robopak (moves plane 400ft. on a single charge) | 13-03896 | . |
| Robotow 6356 18V TOWBAR CORDLS | 13-04222 | . |
| Robotow corded 120V, with 80ft. extension cord. | 13-03897 | . |
| ACCESSORIES | | |
| Robotow 5 Amp 18 Volt Robopak Battery | 13-03898 | . |
| Robotow 18 Volt Charger | 13-03899 | . |
| Robotow 18 foot Extension Cord. | 13-03901 | . |
| Robotow GFI | 13-03902 | . |
| AIRPLANE ADAPTERS (SOLD SEPARATELY) | | |
| Robotow Adapter Aero Commander | 13-03904 | . |
| Robotow Adapter Beech 1 / Baron / Bonanza / Debonair Duke | 13-03905 | . |
| Robotow Adapter Beech 2 / Queen Air / Twin Bonanza / Trigear 18 | 13-03906 | . |
| Robotow Adapter Cessna 1 / 150, 172, 182, 310, 340 | 13-03907 | . |
| Robotow Adapter Cessna 2 / 310R, 401, 414, 421 | 13-03908 | . |
| Robotow Adapter Cessna 3 / 182RG (Pre-1962), 206, 210 (Pre-1962) | 13-03909 | . |
| Robotow Adapter Cessna 4 / 337, 303 | 13-03910 | . |
| Robotow Adapter Cessna 5 / 182RG and 210 (1962-1986) | 13-03911 | . |
| Robotow Adapter Piper 1 / Apache, Comanche, Aztec, Navajo, Twin Comanche, Bellanca | 13-03912 | . |
| Robotow Adapter Piper 2 / Colt, Cherokee, Tri-pacer | 13-03913 | . |
| Robotow Adapter T28 Trainer | 13-03914 | . |
| Robotow Adapter Navion | 13-03915 | . |
| Robotow Adapter Commander 114B | 13-03916 | . |
| Robotow Adapter Cessna Caravan | 13-03917 | . |
| Robotow Adapter Trinidad | 13-03918 | . |

CESSNA TOWBAR EXTENSION



The "QUICK-FOLD COMPACT TOWBAR" also known as the "QFC--Towbar-TM" This new to the market design was patented with you in mind...No more back breaking, bend over towing... Simply attach the QFC-TowbarTM extension to your already existent Cessna tow bar and stand up straight -away from under the propeller-for an added extension of 33". The QFC-TowbarTM has a unique compact design allowing for secure storage. It simply folds flat and is stowed securely along side the factory tow bar in the luggage compartment.

P/N 13-06722

DELUXE TAILWHEEL TOWBAR



The new Deluxe Tail wheel Towbar uses a positive locking control cable to attach to the wheel from a straight-on position. No extra maneuvering or lifting is required, and it can be adjusted for various tail wheel sizes. Towbar Weight: 26 lbs.

Note: Maximum weight to lift is 1,200 to 1,500 lbs. P/N 13-04918

ROLLING TOWBAR FOR TAIL DRAGGERS



Designed by an aircraft mechanic for easy ground handling of his Aeronca, this new tow bar is ideal for all types of tailwheel equipped aircraft. Just place the tail wheel in holding bracket, lift up, and tow bar wheels allow aircraft to be wheeled anywhere with ease. Bracket fits all standard aircraft tailwheels.

P/N 13-04277

GLIDER & BANNER TOW HOOKS

GLIDER & BANNER TOW HOOK RELEASE



Bolt-on tow hook with bumper is designed to be directly bolted to a custom mounting bracket. The bumper is designed to reduce the kick-back that occurs when releasing a banner. The polyethylene bumper absorbs the force of the release and your tow hook release will last longer. P/N 13-06281

GLIDER & BANNER TOW HOOKS RELEASE



Bolt-on tow hook is designed to be directly bolted to a custom mounting bracket. P/N 13-04975

GLIDER & BANNER TOW HOOKS RELEASE



Weld-on tow hook designed to be directly welded to a custom mounting bracket. This hook is similar in design to the Schweizer manufactured hook that is no longer available.

Design improvements were made to increase emergency release capability at all towing loads and angles. A common glider towing hazard occurs when the glider becomes extremely high or low compared to the tow plane. This applies a load to the tow hook at an angle that significantly increases the force required to release the tow rope. This new hook has greater release arm leverage and a unique hardened roller release design to reduce release force at all tow angles. Additionally, the geometry of the tow hook housing was improved to keep the tow ring in the optimum position to minimize release force. The tow hook is not to be used on gliders. FAA approval can be obtained for the complete tow hook and release system by following the guidelines in FAA Advisory Circular 43.13-2B, Chapter 8, titled, "Glider and Banner Tow-Hitch Installations" and the included tow hook installation instructions. Tow hook release is not STC or PMA approved. P/N 13-04974

GLIDER & BANNER TOW RING



The tow rings is designed for use with the glider and tow hook release. The size of the tow ring is 2 1/4" OD. The material is forged steel, finished with cadmium plate with a proof load to 2500 lbs. Tow ring is for use with Wings Unlimited, Inc. tow hooks only. It is not STC or PMA approved. P/N 13-06282

GLIDER & BANNER TOW RELEASE HANDLE



The release handle is attached to the support bracket in the cockpit of the airplane. A cable is attached to the handle and tow hook release. FAA approval can be obtained for the complete tow hook and release system by following the guidelines in FAA Advisory Circular 43.13-2B, Chapter 8, titled, "Glider and Banner Tow-Hitch Installations". The release handle is not STC or PMA approved. P/N 13-06283

GLIDER & BANNER TOW SUPPORT BRACKET



The support bracket is attached to the floor of the airplane in the cockpit and is the housing that holds the release handle. FAA approval can be obtained for the complete tow hook and release system by following the guidelines in FAA Advisory Circular 43.13-2B, Chapter 8, titled, "Glider and Banner Tow-Hitch Installations". The support bracket is not STC or PMA approved. P/N 13-06284

REDLINE TOW BARS

REDLINE SIDEWINDER POWER DRIVER

Powerful and portable, the Sidewinder will forever change the way you move your aircraft. Powered by Milwaukee's top of the line 28V power unit with a long-lasting, lithium ion battery pack, Sidewinder weighs less than 22 pounds, collapses to 27" and stows easily in your baggage compartment. Made in the USA using 4130 Chromoly material.

BEECHCRAFT BAR FITS: Bonanza, Baron, Travel Air, T-34
CESSNA SINGLE ENGINE BAR FITS: 172RG, 177RG, 182RG, 210, P210

15 inch Extension Tube is required on all models **except** 177RG
CESSNA TWIN ENGINE BAR FITS: C-310, C-320, C-340, C-414, C-421

PIPER BAR MODELS: Arrow, Lance, Saratoga (RG), Malibu, Matrix, Meridian, Seminole.
 Lance, Saratoga (RG), Malibu, Matrix, Seminole models require use of the 15 inch Extension Tube. Meridian requires the 30" Extension Tube.

MOONEY BAR FITS: All Mooney Models

ECLIPSE BAR FITS: All Eclipse Models
 15 inch Extension Tube is required.



Sidewinder attached securely to the front wheel.



Sidewinder extended.



Sidewinder collapsed.

| Sidewinder Application | Part No. | Price |
|--------------------------------|----------|-------|
| Beechcraft | 13-06838 | . |
| Cessna Single Engine | 13-06855 | . |
| Cessna Twin Engine | 13-06857 | . |
| Piper | 13-06859 | . |
| Mooney | 13-06860 | . |
| Eclipse | 13-06861 | . |
| Cirrus | 13-06862 | . |
| Rockwell 112/114 | 13-06863 | . |
| 15" Extension Tube | 13-06856 | . |
| 30" Extension Tube | 13-06858 | . |
| Sidewinder Carry Bag | 13-06839 | . |
| Sidewinder Replacement Battery | 13-06840 | . |

REDLINE BE-3/BE-3XL TOWBARS

BE-3: 2-piece design for hand or powered use. Extends to 43.5", collapses to 24.5" and weighs 4 pounds. For attachment to a golf cart, tractor or other powered vehicle, please use the S-3 Vehicle Adaptor. Made in the USA using 4130 Chromoly material.

BE-3XL: 2-piece design for hand or powered use. For attachment to a golf cart, tractor or other powered vehicle, please use the S-3 Vehicle Adaptor. Made in the USA using 4130 Chromoly material.

| Application | Part No. | Price |
|--|----------|-------|
| BE-3 Beechcraft - Fits Bonanza, Baron, Travel Air, T-34 | 13-06841 | . |
| BE-3XL Cessna - Fits 172RG, 177RG, 182RG, 210, P210 | 13-06843 | . |
| BE-3XL Mooney - Fits All | 13-06846 | . |
| BE-3 Piper - Fits Arrow, Lance, Saratoga (RG) | 13-06844 | . |
| BE-3XL Piper - Fits Arrow, Lance, Saratoga (RG), Malibu, Matrix | 13-06845 | . |
| S-3 Vehicle Adaptor | 13-01918 | . |

REDLINE BE-4 TOWBARS

2-piece design for hand or powered use for heavier airplanes. Extends to 61.5" and collapses to 33" and weighs 5 pounds. For attachment to a golf cart, tractor or other powered vehicle, please use the ST-1 Vehicle Adaptor. Made in the USA using 4130 Chromoly material.

| Application | Part No. | Price |
|--|----------|-------|
| BE-4 Beechcraft - Fits Bonanza, Baron, Travel Air, T-34, Duchess | 13-06849 | . |
| BE-4 Cessna - Fits 172RG, 177RG, 182RG, 210, P210 | 13-06850 | . |
| BE-4 Piper - Arrow, Lance, Saratoga (RG), Malibu, Matrix, Meridian, Seminole. | 13-06851 | . |
| BE-4 Eclipse - Fits All | 13-06852 | . |
| ST-1 Vehicle Adapter | 13-04066 | . |

REDLINE ST-1 TOWBARS

If you own models 33, 35 or 55, the ST-1 is the least expensive, most versatile option for hand or vehicle towing. With an overall length of 38.5" and 3 pound 8 ounce weight, it fits neatly on the floor of your baggage compartment. This is our recommended tow bar for the STIFFY. For attachment to a golf cart, tractor or other powered vehicle, please use the ST-1 Vehicle Adaptor. Length is 38.5" and weighs 3 pounds 8 ounces. Made in the USA using 4130 Chromoly material. **FITS THESE BEECHCRAFT MODELS:** Bonanza, Baron, Travel Air, T-34 P/N 13-06848
 ST-1 Vehicle Adapter.....P/N 13-04066

REDLINE PH-1 FOR ECLIPSE

Main gear axle adapter allow the use of floor jack or bottle jack for tire maintenance. Made in the USA using 4130 Chromoly material. **FITS ALL ECLIPSE AIRCRAFT.**
 P/N 13-06853



REDLINE UL/UL-XT TOWBARS

UL: Very light weight, 2-piece design for hand towing only. Extends to 43.5" and stows to 25.5" and weighs 3 pounds 4 ounces. Made in the USA using 4130 Chromoly material.

U.L.- XL: CESSNA Very light weight, 2-piece design for hand towing only. Extends to 48.5", collapses to 31.5" and weighs 3 pounds 6 ounces. Made in the USA using 4130 Chromoly material.

U.L. XL: MOONEY 2-piece design for hand or powered use for heavier airplanes. Extends to 61.5" and collapses to 33" and weighs 5 pounds. Made in the USA using 4130 Chromoly material.



| Application | Part No. | Price |
|---|----------|-------|
| UL - Beechcraft - Fits Bonanza, Bonanza, Baron, Travel Air, T-34 | 13-01914 | . |
| UL-XT - Cessna - Fits 172RG, 177RG, 182RG, 210, P210 | 13-01917 | . |
| UL-XT Mooney - Fits All | 13-06847 | . |
| UL - Piper - Fits Arrow, Lance, Saratoga (RG) | 13-01915 | . |

REDLINE STIFFY

A 1-pound, spring-loaded, reversible-ratcheting mechanism that greatly increases the "leverage" available to help move your plane. Must be used with either the ST-1 or BE-3 Towbar, purchased separately. Made in the USA using 4130 Chromoly material.

| Application | Part No. | Price |
|---|----------|-------|
| Beechcraft - Bonanza, Baron, Travel Air, T-34 | 13-04064 | . |
| Cessna - Fits 172RG, 177RG, 182RG, 210, P210 | 13-04068 | . |
| Piper - Arrow, Lance, Saratoga (RG), Malibu, Matrix, Meridian, Seminole. | 13-04067 | . |



REDLINE WEDGE-LOC LINK

Provides a solid "link" between your airplane and other brands of tow bars or power tugs that were designed to connect to either your axle or tow pins. With the WLL, nothing touches any exterior surface of your plane -- the result is no scratching or other damage! Made in the USA using 4130 Chromoly material.

FITS THESE BEECHCRAFT MODELS: Bonanza, Baron, Travel Air, T-34 P/N 13-01913



REDLINE SLIDER FOR ECLIPSE

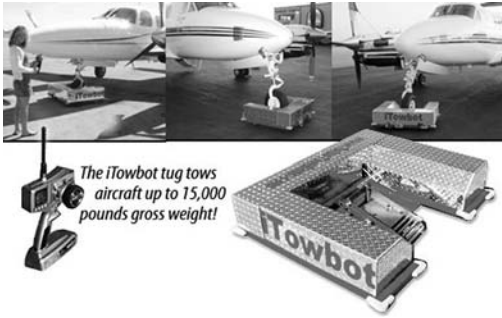
The Slider adapter inserts into the front axle and tightens securely. It provides a short "stub" on each side for any universal type tow bar attachment. With the Slider in place, nothing touches any exterior surface of the nose gear, avoiding scratching and other damage.

Made in the USA using 4130 Chromoly material. **FITS ALL ECLIPSE AIRCRAFT.**
 P/N 13-06854



TULSA TOWBOTS AIRCRAFT TUG

TULSA TOWBOTS REMOTE CONTROL AIRCRAFT TUG



The iTowBot's loading sequence is as easy as driving the unit directly under the nosewheel of your aircraft. The iTowBot is engineered so that when the aircraft loads, the weight of the loaded aircraft does not inhibit its zero-turn capability. This allows the operator to articulate the aircraft in a manner that places it ahead of all other towing equipment.

Releasing the aircraft is just as easy. A foot-operated release allows the operator to unlock the swivel carriage and merely back out from beneath the nosewheel. Now the operator can simply drive the unit back to its spot in the hangar....no tugging, pushing or rolling up extension cords required!

iTowBot can tow in any direction Tulsa TowBots offers a precision, ruggedly built towing machine that will allow the user to position aircraft in close quarters with ease. The iTowBot has the ability to rotate the aircraft inside of its own wingspan. With its hybrid zero-turn capability and fully-articulating self-locking carriage, turn limits of the aircraft nose wheel cannot be exceeded. The powerful 24VDC motors are regulated for smooth starts and stops while delivering the power you need to put your aircraft asset out on the ramp or back in the hangar.

The iTowBot was specifically designed to provide adequate distance for the operator to tow around the aircraft. The operator should exercise caution in selecting the vantage point from

which to operate the iTowBot.

Damage caused by conventional tugs This is a picture of the nosewheel strut damage caused by exceeding the turn limits with a conventional tug. This cannot happen with the iTowBot, since the front wheel remains stationary while the iTowBot is free to turn through 360°. With its hybrid zero-turn capability and fully-articulating self-locking carriage, turn limits of the aircraft nose wheel cannot be exceeded.

The DX2.0 transmitter is designed to provide bulletproof 2.4 GHz spread spectrum radio link. With the DX2.0 DSM system there are no worries of frequency clip or radio interference from noisy motors or no reason to be concerned that someone may turn on a radio on your channel. The unit is user-friendly and offers many features and functions that the operator may desire. The receiver is bound to the transmitter at our facility prior to shipment so that the receiver will only recognize its specific transmitter that comes with your iTowBot. During the binding process, the motor fail safe positions are also set to further provide another level of safety.

Specifications

- * Measures 38" Wide x 46" Long x 12" High
- * Rugged Steel Construction
- * Virtually Zero Maintenance
- * Max Towing Speed 1.7 Feet Per Second
- * Tows Aircraft up to 15,000+ Pounds Gross Weight
- * Solid State Heavy Duty Fully Articulating Motor Control
- * Hybrid Zero Turn Capability about Stationary Nosewheel
- * Also available with built-in 24V Auxiliary Power Plug (APU) & Power Cord
- * Powerful Reversible 24 Volt DC Motors
- * Powder-Coated Frame
- * Easy Ergonomic Remote Control Handset
- * Overvoltage Thermally Protected
- * Trouble Free Cast Iron Rims with Non-Marking Moldon Wheels
- * Equipped with Solid State Battery Charger/Maintainer

| Descriptions | Part No. | Price |
|--|----------|-------|
| Standard Model (NO APU) Up to 15,000 LB | 13-05252 | . |
| Standard Model (WITH APU) Up to 15,000 LB | 13-05253 | . |
| Gear Reduction Options (NO APU) up to 30,000 Lbs. | 13-05734 | . |
| Gear Reduction Options (WITH APU) Up to 30,000 Lbs | 13-05735 | . |

LITTLE STAR VTHRUST



Vthrust aircraft mover from Littlestar Products makes quick and easy work of moving your single-engine airplane, using an off-the-shelf 18V or 24V drill/screwdriver* as its power source. The drill's sealed mechanism means that there are no belts or chains to snag, and no adjustments to make. Most applicable drill/drivers have two or even three speed ranges for precise control of the Vthrust, and supply sufficient torque to move a 3000 lb. airplane up a 3% grade. The drill/driver chucks onto the vThrust, and attaches with a simple clamp. Just attach the driver and go! The drive system is versatile you've either already purchased the drill for other projects around the hangar and shop, or you've always wanted to! Operation is simple and safe. The internal worm-gear drive mechanism, coupled with the drill/driver's internal brake means the Vthrust stops and starts when you do smoothly and precisely. The variable speed of the drill/driver gives you complete control of the aircraft, from a standstill to moving at 40 feet-per-minute. Two versions are available -- in the deluxe steerable model, a simple twist of the stabilizing handle locks and unlocks the steering mechanism for total control. Robust construction gives the Vthrust the capability to deliver up to 325 lbs of drawbar force. Dual drive wheels deliver good traction and sta-

bility on almost all surfaces, and with the optional turf tires or tire chains, you're covered for the rest. Securing Vthrust to the aircraft is a snap, using a single lever to attach or detach the towbar. Several optional adapters are available, allowing the Vthrust to mate to many light aircraft, tricycle gear or conventional, with wheelpants or without.

The steerable model is easily converted to the trailer mover with the optional coupler adapter. The Vthrust is also available in a robust non-steerable model.

Lightweight and compact, the Vthrust aircraft mover's 62-lb. weight makes it easy to use and transport. All-stainless construction gives corrosion-free good looks, and the enclosed worm-gear drive mechanism is maintenance free. The Vthrust is easy to assemble and disassemble, making it a breeze to move and store. *Drill/Driver not included.

| | STANDARD | STEERABLE |
|-------------------------|--|--|
| MAXIMUM AIRCRAFT WEIGHT | 3000 LBS | 3000 LBS |
| MAXIMUM GRADE | 10% | 10% |
| MAXIMUM SPEED | 40 FPM | 40 FPM |
| WEIGHT WITHOUT DRIVER | 65 LBS | 65 LBS |
| HEIGHT | 36" | 36" |
| LENGTH | 73" | 73" |
| WIDTH | 17-1/2" | 17-1/2" |
| VTHRUST WARRANTY | 1 YEAR PARTS & LABOR (DOES NOT INCLUDE DRIVER) | 1 YEAR PARTS & LABOR (DOES NOT INCLUDE DRIVER) |

PS

| Description | Part No. | Price |
|---|-----------------|--------------|
| M-770-N - Standard Tugger, Non-Steerable | 13-06097 | . |
| M-778-S - Deluxe Tugger, Steerable | 13-06098 | . |
| Accessories | Part No. | Price |
| Hangar Ramps (Set of 3) | 13-06091 | . |
| Beechcraft Adapter | 13-06092 | . |
| Diamond DA-40 Adapter (Set of 2) | 13-06093 | . |
| Piper Adapter (Set of 2, for fixed gear with wheel pants) | 13-06094 | . |
| Diamond DA-42 Adapter (Set of 2) | 13-06095 | . |
| 18V Dewalt 1/2" Drill Driver (2 18V Batteries included) | 13-06096 | . |

TIE-DOWNS

“THE CLAW” TIE-DOWN SYSTEM



Advanced Aircraft Anchoring System – The Claw® Aircraft Tiedown kit comes complete with three earth anchors, rope, spikes, hammer and canvas carry bag. The Harder You Pull, The More It Grips The Earth. Features: Easy installation...Easy removal. No more struggling with screw-in anchors The “Claw®” is designed exclusively for aircraft. The “Claw®” system has a 3600 lb. combined capacity. The last tie down you will ever have to buy - Lifetime Warranty, Tremendous holding strength. The harder you pull, the more The “Claw®” grips. Ideal for all aircraft, Works in hard clay, sandy soil or anything in between Large foot print spreads the load over a larger area for maximum holding power, Low profile will not puncture tires, Complete System weighs only 8 lbs (Including Hammer), Light-weight aircraft aluminum with hardened corrosion resistant die cast zinc plated steel spikes 25 ft 3/8” dia. solid braid polyester rope, Anchoring System hammer doubles as removal tool The “Claw®” includes: Bag that is easy to carry and store that contains: 3 Anchors; 9 spikes; 1 hammer; 25-ft rope Wt: 3.8 lbs.

P/N 13-02448



JEB'S REMOTE TIE-DOWN KIT

Remote Release System - This new safety device will be appreciated by anyone who hand starts their plane. Release and retrieve without leaving the cockpit - get off to a safe start.

P/N 13-04787

THE COMPLETE TIE DOWN KIT



Includes: (9) Anchor Rods; (3) Wheel Chocks; (3) Tie-Down Straps; (1) Storage Bag

This kit includes everything needed to tie your plane down when you must park on the grass. You can tie down both wings and the tail, and the kit includes a convenient storage bag. You can use the wheel chock as a chock when parked on pavement, and the strap can be used to secure the plane on a tarmac with built-in tie downs.

When parking overnight on grass, simply drive the 3 anchor rods through the holes in the wheel chock to create a tie down and clip your tie down strap to the wheel chock & wing. P/N 13-03148



TIE DOWN STRAP

15 feet long, long enough for most high wing aircraft • 2'300 Lb ultimate strap strength • Snap buckle on each end • Safety yellow color Snap buckles cannot fall off of aircraft when loose or in gusty winds

P/N13-03149



BAGGAGE TIE-DOWN

A very strong, light weight, and quick way to secure your baggage. The photo shows two units; One with the clamp/ring installed in the base and one with the clamp/ring removed to show more detail. The unit parts are made of anodized 6061 T-6 aluminum with a stainless ring. 2 rivnuts and 2 countersunk 10-32 cad-plated screws are furnished with each complete unit. Extra bases can be purchased individually, and include rivnuts and screws.

Note: Use rivnuts to attach to surfaces with no rear access - simply drill a .25” hole and install rivnut. By installing additional bases you can tailor your baggage tie-down options to suit your current needs.

P/N 13-01729



E-Z LOCK TIE DOWNS

EZ- Lock Tie Downs feature a braid slip lock which provides excellent tie-down security without the need to tie into any knots.

P/N 13-00159



NELSON AIRCRAFT TIE-DOWNS

- Three 15” welded (not bent) steel anchors with sharp tips for easy installation
- Three 15’ nylon ropes- Cordura, Int'l. Orange, 8”x15” case
- Wt: 4 lbs. P/N 13-00663



SECURIT TIE-DOWN

Super-strong and simple to use, Securit has a unique braid lock that provides holding action automatically, even when the line is slack. It releases quickly and easily, but positively will not release by itself. Adjustable to 100”. Tensile strength of the polypropylene rope exceeds 4000 lbs. Hooks are cadmium plated. Rope is resistant to water, oil and gas. Wt. 19 oz...P/N 13-22750

Less 10% for 3 or more. Price shown is for one unit.

FLY TIES TIE DOWNS

FlyTies Tie Downs Rated “Top Choice” by Aviation Consumer

FlyTies® unique design allows quick insertion and quick removal using the easy-out extraction tool provided. Rugged, die-cast steel rods are 3/8” x 14” for deeper penetration into harder ground. Cumulative load capacity is 3,600 lbs. Kit includes 3 eas. Delrin hubs, 9 eas. steel rods, 3 ea. 3/8” x 12’ ropes, easy-out extraction tool, and rugged compact canvas tote bag. Complete kit weighs only 6 lbs. (less than 1 gal of Avgas) and has a lifetime warranty. P/N 13-22751



NYLON TIE-DOWN ROPE

American-made 100% duPont filament fiber nylon rope. Over twice the strength of manila. Highly resistant to sun-light, rot & mildew. Don't be fooled by foreign imitations. 3/8” Rope (4000 lb. test) P/N 13-05400 /Ft. 1/2” Rope (6250 lb. test) P/N 13-05500 /Ft.

15% Discount on 100 ft.

Tie-down bar is guaranteed for 10 years under normal use.

When making your own length of tie-downs, add at least 30” for rope reversal and knots.

HOOK-N-PULL TIE DOWNS

Hook-N-Pull Tie downs feature closed end “s” hooks made from high quality steel with heavy plating, and tie down bards are made from high grade aluminum, hardened for strength and ball burnished and anodized. Furnished with 3/8” diameter nylon rope.

High wing P/N 13-00448
Low wing or tail..... P/N 13-00449



AIRCRAFT TIE DOWNS

Three 17” x 3/8” plated steel cork screw stakes. Three 10’ x 3/8” polypropylene ropes. Cloth draw string bag. P/N 13-06634



GENUINE VELCRO

5819 Genuine Velcro Two 4 1/2” pressure sensitive hook and loop strips. P/N 13-06404



TOUGHMAN TIE-DOWN

The Toughman™ Tie-Down is a new and unique multi-use rope based tie-down system. The Toughman™ Tie-Down incorporate the patent protected Toughman™ Rope Clamp which has only two moving parts and is manufactured from high performance engineered nylon resin. It is very easy to use, extremely lightweight, high strength and permanently corrosion proof. The Toughman™ Tie-Down product package includes one rope clamp, ten or fifteen feet of rope and one corrosion resistant steel hook. Military Tough: The Toughman™ Rope Clamp has undergone rigorous testing by the US Army Soldier Systems Center, “Natick” test labs and has been approved for use on cargo nets and rope support lines on military tents.

3/8” Camo 10’ P/N 13-05115
1/2” Red & Yellow 15’ P/N 13-05116
3/8” Red & Yellow 10’ P/N 13-06142



SECURENET AIRCRAFT TIE DOWNS

| Aircraft Type | Net Size | Anchors | Frame Ratchets | Tie Downs | Foam Pads | Part No. | Price |
|--------------------|-----------------------|---------|----------------|-----------|-----------|----------|-------|
| Low Wing Aircraft | 3-5'x 12' | 10 | 4 | 12 | 15 | 13-06781 | . |
| High Wing Aircraft | 2-5'x 18' 1-5'x12' | 10 | 4 | 12 | 15 | 13-06782 | . |
| Amphibian Aircraft | 3-5'x 18' | 10 | 16 | 0 | 15 | 13-06783 | . |



STUBAI CARIBINERS

Incredible strength, 1400 lb capacity, quick release. Order teal or black. 3.25 in (8 cm) x 2.5 in (6 cm) x .375 in (1 cm) (approximate) Weighs 1.5 ounce (45 gm)
Teal P/N 10-03736
Black P/N 10-03737



TIE-DOWNS – CHOCKS



TIE-DOWN EYE BOLT

For non-structural applications. The 7/16" dia. threaded shaft is 7/8" long. Hole is 5/8" dia. Overall length 2-1/2". Furnished with AN365-720 elastic stop nut and wide-area AN970-7 washer
P/N 13-04303

AIRCRAFT TIE-DOWNS



These Aircraft Tie-Downs offer strong, durable, and easy to use tie downs for any weather condition. These tie downs are rated up to 3,000lbs. and tighten up with one quick pull. A sliding cap protects the buckle from freezing during cold weather and keeps grit out during windy field conditions. Each kit comes with: * Three 9 foot long tie down straps * Choice of tie down strap colors: black, red, or royal blue * A Dupont Cordura carrying bag with choice of colors; black, forest green, red, royal blue or navy.

Embroidery is available for an additional \$5. Choose from Silver, Royal, Navy, or Black.

| Description | Part No. | Price | Description | Part No. | Price |
|-------------|----------|-------|-------------|----------|-------|
| Black-Black | 13-06324 | . | Red - Royal | 13-06329 | . |
| Black-Red | 13-06325 | . | Royal-Black | 13-06330 | . |
| Black-Royal | 13-06326 | . | Red-Royal | 13-06331 | . |
| Red-Black | 13-06327 | . | Royal-Royal | 13-06332 | . |
| Red-Red | 13-06328 | . | | | |



THE PILOT BUDDY

The PILOT BUDDY is a pilot actuated safety and restraint system for hand propping and tail tie down. A 100 HP piston engine with climb propeller can produce about 500-700 pounds of thrust. The Pilot buddy is therefore constructed to meet and exceed that load for purpose of positive restraint. The Pilot

Buddy has a Black Velour storage Pouch (4" x 5"), and a slightly smaller restraint loop ring. The entire device and storage package weighs less than 2 OZ, and fits in the palm of your hand. Both the restraint loop (Left side-4 Yards=12'); and the release lanyard (Right side -6 yards = 18') are constructed of MIL Specification, MIL-C-5040, 750 pound test line. The Swing Latch Shackles release is test certified to 800 pounds tensile strength for operating loads. The Swing Latch mating ring on the Restraint loop (Left Side), is a ring constructed to MIL Specification. MS27762, with a tensile strength of more than 750 pounds. Package comes with instructions, a checklist for use, and other increasing safety materials.
P/N 13-04259



AIRCRAFT TIE-DOWN STRAPS

Monogramming available (max 10 letters or numbers). Monogrammed items are noncancellable and nonreturnable.

For Monogramming use PN 13-06073 . Specifications * Tensile Strength: 2970 (avg) * Weight(oz/yd): 1.12 * Width: 1" * Thickness: .070 (Avg) * Picks: 21

Blue P/N 13-04341
Orange..... P/N 13-04342
Balck..... P/N 13-04343
Red..... P/N 13-04344

AEROSPOILER KIT, AERO-SPOILER EXTENSION KIT



A lift reduction device used for storm protection on aircraft parked outside during adverse weather conditions. The AeroSpoiler kit contains 10 cup/receiver assemblies and 8 30"x3" inch blade assemblies. Each kit contains 20' of wing coverage.

The AeroSpoiler will reduce the lift producing capability of your aircraft wing by as much as 96% on the area of wing covered by the Spoiler. Extension kits are available for aircraft requiring more than 20' of wing coverage.
P/N 13-06505

Extension Kit..... P/N -13-06506.....

ASA WHEEL CHOCKS



Mandatory equipment for all aircraft, these tire stops are for keeping aircraft securely parked. A pair of black molded plastic wheel stops are connected with 22' bright yellow and black braided nylon rope that won't rot or retain water. The bottom cleats keep aircraft securely parked.

Lightweight; 7-3/4" x 2-1/2" x 4-1/2"; concave design fits any aircraft tire. One pair is needed for each wheel. P/N 13-05752

FOLD DOWN MINI CHOCKS



These mini chocks are so small and light you can take them with you. They work perfectly on both hard and dirt surfaces. Anodized aluminum, each wheel pair folds down to 3.75"x 2"x.5" & weighs just 4 oz. A 14' lanyard is attached.
P/N 5229



TRAVEL CHOCKS

Travel chocks are a very light weight wheel chock designed for airplanes and other vehicles. Compact and easily stored, Travel Chocks are popular with pilots across the country. Powder coated in durable red, blue, or yellow finish. Available in 3 sizes. Chock set is for one wheel only.

Small - 1 1/2" angle x 6" long x 1/8" Thick Heat Treated Alum.

Medium - 2" x 2" x 8" 1/8 Thick Angle Heat Treated Alum.

Large - 3 1/2" x 3 1/2" x 8" Heat Treated 3/16" Thick Alum.

| Description | Part Number | Price |
|----------------------|-------------|-------|
| Small Bare Aluminum | 13-01120-A | . |
| Small Blue | 13-01120-B | . |
| Small Red | 13-01120-R | . |
| Small Yellow | 13-01120-Y | . |
| Medium Bare Aluminum | 13-01130-A | . |
| Medium Blue | 13-01130-B | . |
| Medium Red | 13-01130-R | . |
| Medium Yellow | 13-01130-Y | . |
| Large Bare Aluminum | 13-01140-A | . |
| Large Red | 13-01140-R | . |
| Large Yellow | 13-01140-Y | . |



WOOD WHEEL CHOCKS

These chocks feature heavy duty wood construction and are finished in bright safety yellow. Connected with 18" of braided nylon rope.

Std chocks..... P/N 13-01765.....
Chocks w/ your N# or company name..... P/N 13-01766.....



RUBBER WHEEL CHOCKS

These ribbed rubber wheel chocks measure 4"x4"x8" and have reflective tape on all three sides. Connected with nylon rope. Very popular with corporate operations & FBOs.

P/N 13-01767

AIRGIZMOS WHEEL CHOCKS



These chocks are unique because they are stackable. This feature really cuts down on the amount of space required to carry them in the plane.

The durable plastic sides are lightweight, but are made to take a lot of abuse. There is space on the sides to put your airplane's n-number (you supply the vinyl lettering). The edges of these chocks are made of non-skid material, so they stay where you put them. They also won't damage anything else in your baggage compartment.

P/N 13-04298



HANDY CHOCKS

5904 "Handy Chocks" Light Weight - 8 oz* Powder Coated Aluminum Chock* 1 Pair per Package
Red..... P/N 13-06405.....
Yellow..... P/N 13-06406.....



QUICK CHOCK

Design - Unique but simple one-piece design consists of two chocking surfaces connected by a telescoping, tensioning member. Construction - Weather resistant PVC plastic exterior combined with heavy duty PVC (schedule 80) for interior support, along with military specification bungee assures years of service. The gripping surface is tire belt rubber to provide good friction and wear properties. P/N 13-06619..... ea.

WINDSOCKS

SCOTT'S WINDSOCKS



Scott's windsocks are manufactured of long-life polyester fabric that is treated to resist the effects of wind and weather. All seams are double stitched with polyester thread for strength. The windsock throat is reinforced and has solid brass grommets for easy attachment and corrosion resistance. Nylon ties are included with each windsock to attach it to the frame. Windsocks are available in high visibility orange, white or alternate orange and white stripes. Fully extended at 20 MPH or 15 Knots.

| BRIGHT ORANGE | | | |
|---------------------|-----------|----------|-------|
| Throat Dia. | Length | Part No. | Price |
| 8" | 30 inches | 13-04147 | . |
| 10" | 36 inches | 13-02026 | . |
| 13" | 55 inches | 13-04145 | . |
| 18" | 5 feet | 13-20200 | . |
| 18" | 8 feet | 13-20202 | . |
| 24" | 8 feet | 13-20204 | . |
| 28" | 7 feet | 13-20205 | . |
| 36" | 10 feet | 13-20206 | . |
| 36" | 12 feet | 13-20208 | . |
| INTENSE WHITE | | | |
| Throat Dia. | Length | Part No. | Price |
| 18" | 5 feet | 13-20210 | . |
| 18" | 8 feet | 13-20212 | . |
| 24" | 8 feet | 13-20214 | . |
| WHITE/ORANGE STRIPE | | | |
| Throat Dia. | Length | Part No. | Price |
| 18" | 5 feet | 13-20220 | . |
| 18" | 8 feet | 13-20222 | . |
| 24" | 8 feet | 13-20224 | . |
| 28" | 7 feet | 13-20225 | . |
| 36" | 10 feet | 13-20226 | . |
| 36" | 12 feet | 13-20228 | . |

SCOTT'S STANDARD WINDSOCK FRAMES



These very popular frames are constructed of welded steel for strength & durability. They have 2 ball bearings for easy swiveling and are painted for corrosion resistance. The frame is mounted to a 1-inch diameter support pipe threaded to fit a 3/4" size pipe or conduit. Order windsocks separately.

| | |
|----------|--------------------|
| 8"..... | P/N 13-20229 |
| 24"..... | P/N 13-20232 |
| 10"..... | P/N 13-20005 |
| 28"..... | P/N 13-20234 |
| 13"..... | P/N 13-20231 |
| 36"..... | P/N 13-20235 |
| 18"..... | P/N 13-20230 |

SCOTT'S EXTENDED WINDSOCK FRAMES

The extended frame turns much easier and keeps the windsock headed into the wind like a weathervane. The frame holds the windsock open fully so it will "fly" in lighter winds. Constructed of all welded steel with 2 ball bearings. The frame is mounted to a 1-inch diameter support pipe threaded to fit a 3/4-inch size pipe or conduit. **ORDER WINDSOCKS SEPARATELY**

| | | | |
|----------|-------------------|----------|-------------------|
| 18"..... | P/N 13-20244..... | 36"..... | P/N 13-20248..... |
| 24"..... | P/N 13-20245..... | | |

INTERNALLY LIGHTED EXTENDED FRAMES



An internally lighted windsock with extended frame makes the windsock "glow in the dark" for maximum visibility. The lamp operates on regular 120VAC current. The 18-inch diameter frame has a GE 8,000 hour lamp that lasts about 2 years. The 24-inch and 36-inch frames have reflector flood lamps. Designed to swivel without twisting the wires. The frame is constructed of all welded steel for strength and is painted to resist corrosion. The electrical connection for the lamps may be wired permanently or temporarily connected with an extension cord. The frame is mounted to a 1-inch diameter support pipe threaded to fit a 3/4-inch size pipe or conduit. **ORDER WINDSOCKS SEPARATELY.**

| | |
|----------|--------------------|
| 13"..... | P/N 13-02029 |
| 18"..... | P/N 13-20236 |
| 24"..... | P/N 13-20238 |
| 36"..... | P/N 13-20242 |

critical connection for the lamps may be wired permanently or temporarily connected with an extension cord. The frame is mounted to a 1-inch diameter support pipe threaded to fit a 3/4-inch size pipe or conduit. **ORDER WINDSOCKS SEPARATELY.**

MINIATURE 15" WIND SOCK



For home, office, hangar or workshop. The 15" long wind cone of Flame-Orange sailcloth material swivels on 23" high steel shaft. Wind directionals are cast aluminum with flat black finish. Furnished with mounting hardware and Complete KitP/N 13-03747
Replacement Sock....P/N 13-03748

instructions.

7" VINYL WINDSOCK



Features 27" long x 6-1/2" diameter fluorescent orange vinyl sock. Aluminum mast adjusts from 33" to 54" and up to 12 ft. with extension kit. Perfect for private strip, helicopters, or runway threshold.
Complete Windsock w/frame.....P/N 13-20015.....
Replacement Sock.....P/N 13-20025.....

8 FOOT VINYL WINDSOCK



18" diameter sock is double stitched, durable, fluorescent orange vinyl coated nylon. Ball bearings let sock turn easily even in light winds. Aluminum frame holds mouth open. Mount on appropriate pipe. Order frame and sock separately
8 Foot sock only....P/N 13-20035

NYLON WINDSOCKS



These socks are windtunnel tested and designed for conditions in which safety and wind direction are of greatest importance. They are constructed of nylon oxford cloth for strength and flyability and dyed a bright orange for higher visibility. The throat and tail bands are stitched with multiple rows of tough synthetic thread. The throat band is finished with #1 brass grommets and nylon ties are included. Unlike canvas or vinyl, these Socks fly in the slightest breeze.

| Part No. | Throat Diameter | Length | Price Each |
|----------|-----------------|--------|------------|
| 13-20040 | 10" | 36" | . |
| 13-20045 | 18" | 48" | . |
| 13-20050 | 18" | 60" | . |
| 13-20055 | 18" | 96" | . |
| 13-20060 | 36" | 144" | . |

AVIATION WINDSOCKS



All Aviation Windsocks are made of heavy-weight cross-woven Aviation blend material having special Rip-Stop characteristics, flexible, chemically resistant treated, Polyurethane Coated for bonding strength and water repellancy, Ultra-violet dyed, with Nylon Web support and brass grommets.

Color: Colorfast International Orange. Estimated 50% longer life and color retention. Aviation sized windsocks. FAA approved sizes per FAA Advisory Circular #AC 150/5345-27C dated 07/85. Estimated wind speeds: Fully extended shape for all sizes listed below, (wind tunnel tested) to be special cut Specification of 15 knots = 16.5 mph. 18" - 28" diameter windsocks 96" in length. 36" diameter 144" in length.
18" dia.P/N 13-02038..... 20" dia.P/N 13-02039.....
24" dia. ..P/N 13-02040..... 28" dia.P/N 13-02041.....
36" dia.P/N 13-02042.....

EXTRA LONG LIFE WINDSOCKS



"Extra Long Life" is a heavy-duty cross-woven Aviation blend Poly./Nylon material with special Rip-Stop characteristics, Medium-weight for more flexibility, chemically resistant treated, and Polyurethane coated for bonding strength and water repellancy. Ultra-violet dyed for best retention. Nylon support webbing on intake opening with brass grommets. Colorfast International Bright Orange in color. "Extra

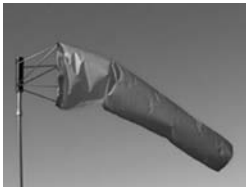
Long Life" windsocks have an estimate 50% longer life and color retention.

| Size | Part No. | Price | Size | Part No. | Price |
|---------|----------|-------|----------|----------|-------|
| 6"X18 | 13-20110 | . | 15"X55" | 13-04317 | . |
| 9X30 | 13-20111 | . | 20"X96" | 13-02039 | . |
| 10X36 | 13-20112 | . | 18"X96" | 13-02038 | . |
| 13X48 | 13-20113 | . | 24"X96" | 13-02040 | . |
| 18X60 | 13-20114 | . | 28"X96" | 13-02041 | . |
| 20X60 | 13-20115 | . | 36"X144" | 13-02042 | . |
| 12"X48" | 13-04316 | . | | | |



WINDSOCKS

AIRPORT WINDSOCKS



What makes these aviation windsocks different?

Two major things make a windsock, its material and its construction. Starting off with a premium nylon fabric that is made right here in the USA to exact standards. Nylon offers unparalleled windsock durability to the elements and will not become rigid in cold weather, keeping these windsocks extremely responsive in even the slightest of wind. From there it gets urethane coated and UV protected, giving the windsock superior fade resistance and color retention. The material is subjected to a variety of tests by an independent lab to verify its structural integrity and UV resistance. This superior material is then cut and sewn. Our reinforced double stitched hems and heavy duty brass grommets, assures these windsocks long life reliability.

The added expense of a superior material and manufacturing process meets the needs of even the most demanding windsock customers. Such as: US Military, US Coast Guard, US Embassies, State Airports, Offshore Oil Rigs, Nuclear Power Plants, Medical Heliports, Government Bio Hazard Units.

ORANGE WINDSOCKS

| Description | Size | Part No. | Price |
|-----------------|------------|----------|-------|
| Orange Windsock | 4" x 15" | 13-06386 | . |
| Orange Windsock | 6" x 24" | 13-06387 | . |
| Orange Windsock | 8" x 36" | 13-06388 | . |
| Orange Windsock | 10" x 36" | 13-06389 | . |
| Orange Windsock | 13" x 54" | 13-06465 | . |
| Orange Windsock | 18" x 60" | 13-06466 | . |
| Orange Windsock | 18" x 72" | 13-06467 | . |
| Orange Windsock | 18" x 96" | 13-06468 | . |
| Orange Windsock | 20" x 96" | 13-06469 | . |
| Orange Windsock | 24" x 96" | 13-06470 | . |
| Orange Windsock | 36" x 144" | 13-06471 | . |

ORANGE AND WHITE WINDSOCKS

| Description | Size | Part Number | Price |
|-------------------------|------------|-------------|-------|
| Orange & White Windsock | 4" x 15" | 13-06472 | . |
| Orange & White Windsock | 8" x 36" | 13-06473 | . |
| Orange & White Windsock | 10" x 36" | 13-06474 | . |
| Orange & White Windsock | 13" x 54" | 13-06475 | . |
| Orange & White Windsock | 18" x 60" | 13-06476 | . |
| Orange & White Windsock | 18" x 72" | 13-06477 | . |
| Orange & White Windsock | 18" x 96" | 13-06478 | . |
| Orange & White Windsock | 24" x 96" | 13-06479 | . |
| Orange & White Windsock | 36" x 144" | 13-06480 | . |

BALL BEARING FRAMES



The ball bearing windsock frames are a rugged design constructed of a welded steel construction and then a powder coated finish for corrosion protection. They incorporate a two bearing pivoting design for effortless pivoting. These frames are ready to be mounted on a 3/4" female pipe thread for the 8", 13", 18" and 24" and a 1" pipe thread for the 36".

| Description | Size | Part No. | Price |
|---------------------|---------------------|----------|-------|
| Ball Bearing Frames | 8" | 13-06481 | . |
| Ball Bearing Frames | 13" | 13-06482 | . |
| Ball Bearing Frames | 18" | 13-06483 | . |
| Ball Bearing Frames | 24" | 13-06484 | . |
| Ball Bearing Frames | 36" Non Collapsible | 13-06485 | . |
| Ball Bearing Frames | 36" Collapsible | 13-06486 | . |

EXTENDED BALL BEARING FRAMES



These windsock ball bearing extended frames are a rugged design constructed of a welded steel construction and then a powder coated finish for corrosion protection. They incorporate the same high quality construction as our standard ball bearing frames with the added performance of an extended frame. They incorporate a two bearing pivoting design for effortless pivoting.

These frames are ready to be mounted on a 3/4" female pipe thread for the 13" and 18" frames. Use 1" female pipe thread for mounting the 24" and 36" frames.

| Description | Size | Part No. | Price |
|------------------------------|------|----------|-------|
| Extended Ball Bearing Frames | 13" | 13-06487 | . |
| Extended Ball Bearing Frames | 18" | 13-06488 | . |
| Extended Ball Bearing Frames | 24" | 13-06489 | . |
| Extended Ball Bearing Frames | 36" | 13-06490 | . |

VERTICAL SOCK KITS



These complete kits include our standard frame, windsock, windsock ties, pole, and brackets. They are a stand alone unit for mounting on a flat vertical surface or they can be installed right onto an existing 3/4" pipe thread pole.

| Description | Size | Part No. | Price |
|-----------------------------|-----------|----------|-------|
| Vertical Mount Windsock Kit | 8" x 36" | 13-06491 | . |
| Vertical Mount Windsock Kit | 13" x 54" | 13-06494 | . |
| Vertical Mount Windsock Kit | 18" x 60" | 13-06495 | . |
| Vertical Mount Windsock Kit | 18" x 96" | 13-06496 | . |

TRIPOD MOUNT WINDSOCK KIT



These complete kits include our standard frame, windsock, windsock ties, pole, and tripod. They are a stand alone unit for mounting on a flat horizontal or peaked roof surface or they can be installed right onto an existing 3/4" pipe thread pole.

| Description | Size | Part No. | Price |
|---------------------------|-----------|----------|-------|
| Tripod Mount Windsock Kit | 8" x 36" | 13-06497 | . |
| Tripod Mount Windsock Kit | 13" x 54" | 13-06498 | . |
| Tripod Mount Windsock Kit | 18" x 60" | 13-06499 | . |
| Tripod Mount Windsock Kit | 18" x 96" | 13-06501 | . |

PORTABLE WINDSOCK KIT



Our portable windsock kit is a popular choice for remote locations where knowing the wind speed and direction is vital. This rugged, stand alone unit comes complete with the pole, frame, windsock and windsock ties. These units are manufactured right here in our facility reassuring only the best in quality and performance. This free standing system measures over 7' tall in its assembled configuration.

* It features an extremely rugged design that incorporates a pole with a foot lug and handle for easy installation and removal. The two part pole disassembles for easy transportation.

* The frame conveniently screws onto the top of the pole. Its aluminum hoop and bail pivot on a stainless steel shaft for years of reliable and responsive action.

* The portable unit incorporates the same high quality windsocks we manufacture for commercial airfield use. These high quality socks are constructed from U.S. made nylon fabric that is urethane coated and UV protected. This material is made to our very strict and exacting standards and then sewn right here in our facility, producing a windsock of uncompromising quality. They are offered in (3) sizes for the portable unit. UPS only on this product due to size of package.

| Description | Size | Part No. | Price |
|-----------------------|-----------|----------|-------|
| Portable Windsock Kit | 6" x 24" | 13-06502 | . |
| Portable Windsock Kit | 8" x 36" | 13-06503 | . |
| Portable Windsock Kit | 13" x 54" | 13-06504 | . |

AVIATION LIGHTED WINDSOCK FRAMES



Internally lighted, heavy duty ball-bearing frame, with 1-75 to 300W lamp, extended to 30" double hoop frameworks. (3/8" round metal frameworks) FAA approved sizes per FAA Advisory Circular #AC150/5345-27C dated 07/19/85. Furnished complete with windsocks.

- 18" dia.....P/N 13-02043.....
- 20" dia.....P/N 13-05729.....
- 24" dia.....P/N 13-05730.....
- 36" dia.....P/N 13-05731.....

WINDSOCK FRAMES



Totally enclosed housing prevents heavy duty ball-bearing from lock-ups, corrosion, and excessive premature wear. Bearings are grease packed, metal shielded. Self contained unit easily attaches with 3/4" standard threaded pipe.

- 6" dia.....P/N 13-20120.....
- 9" dia.....P/N 13-20121.....
- 10" dia.....P/N 13-20122.....

PS

MONTAGUE FOLDING BICYCLES

MONTAGUE CX COMFORT BIKE



The Montague CX features 26" standard wheels, 21-speed Shimano gearing and a brushed blue aluminum / chromoly frame. Folds to 36"x 28"x 12" in under 30 seconds without use of tools, and fits easily into light aircraft, car trunk, or boats. Extra cushioned saddle and wide tires offer a smooth ride on paved road and a good grip on light off-road terrain. Excellent for cruising city streets or boardwalks.

16" Frame P/N 13-02468
 18" Frame P/N 13-00386
 20" Frame P/N 13-01050

MONTAGUE - DX GRAND CANYON BIKE



The DX Grand Canyon® Crossover Bike is a great all-around bike for anyone looking for a comfortable ride at an unbeatable price. Perfect for cruising through the city or countryside, this 18-speed bike comes equipped with Shimano gears, Gripshift shifters, slightly raised handle bars, and a super soft gel saddle for your ultimate

comfort. At the end of your ride, just fold up the lightweight DX and stow it in your car trunk, city apartment or anywhere in-between. Think of it as an all-around bike for the all-around rider. The DX Crossover Bike uses all standard Mountain Bike wheels and components serviceable at any bike shop.

16" DX Crossover Bike P/N 13-01945
 18" DX Crossover Bike P/N 13-03272
 20" Crossover Bike P/N 13-02458

MONTAGUE PARATROOPER™



A 24-speed mountain bike which folds simply, without the use of tools. By turning one quick release lever, Paratrooper™ compacts in less than 30 seconds into a 3'x3' pack for easy portability & storage.

18" P/N 13-01068
 20" P/N 13-01069

VATAVIO FOLDING BIKE



Vatavio Up to 18 Miles per Charge and 20 MPH the Vatavio is the BEST FOLDING BIKE in its class! The EcoBike Vatavio Folding Electric Bike is the most advanced folding electric bike on the market. Its lightweight aluminum frame design (48lbs) and folding capability makes it a very versatile to store when space is an issue, car trunk(no rack req.), train commuting, RV or Camper, Boat, or even the closet! The Vatavio is the ONLY folding electric bike with standard 8ah Lithium Ion Manganese battery, SHIMANO 6-speed w/Revoshift, 290 watt motor with Zero Start Feature and adjustable speed controller. Additionally, it sports K-sheild puncture resistant 20" tires, giving it maximum power and torque to get you up almost any hill with ease! Features: • Frame Style: Folding (35"x17"x29" folded) • Frame Size: Fits 4'11"-6'4" • Color: Raw Aluminum • Frame: 6061 Hi-Strength Aluminum • Rim: 20" Double Wall Aluminum • Tire: Kenda K-Sheild 1.75" Thorn-Resistant Tubes/Puncture-Resist Liners • Charger: AC 110V P/N 13-05709.....

MONTAGUE FOLDING PEDALS



These pedals reduce the width of the folded bike by 4 inches. While not ideal for high performance riding, they do serve a purpose for those with tight space constraints. P/N 13-03745

MONTAGUE MX MOUNTAIN BIKE



The Montague MX is a full size, high performance mountain bike with 26" standard wheels. Excellent for off-road use, it features a brushed aluminum color or an aluminum/chromoly frame, and 24 speed Shimano gearing. Folds to 36"x 28"x 12" in less than 30 seconds without tools and stores easily

in light aircraft, car trunk, or boat.
 18" Frame P/N 13-00384
 20" Frame P/N 13-02936

MONTAGUE ACCESSORIES - Carrying Case P/N 13-08406

SWISS LX 24 SPEED MOUNTAIN BIKE



The SwissBike® LX Mountain Bike is tough, rugged, and ready for anything. Experienced riders will enjoy this mountain bike whether dealing with mountain terrain or city pot holes, the SwissBike® LX is prepared for action. The speed of unfolding this bike for riding will blow

you away. No tools required to fold and stash away. The SwissBike® LX comes equipped with front suspension, 24-speed EZ Fire Plus® shifters, and a front disc brake to tackle the roughest terrain. The SwissBike® LX Mountain Bike uses all standard mountain bike wheels and components serviceable at any bike shop.

18" LX 24 P/N 13-04702
 20" LX 24 P/N 13-04703

SWISS XO 27 SPEED MOUNTAIN BIKE



The SwissBike® XO Mountain Bike is an aggressive hard tail that can be ridden anywhere. This bike is designed for urban assaults of big hit riding and is ideal for anyone who likes to take their bike with them where ever they go. This 27 speed bike comes equipped with a hand welded custom drawn

aluminum frame, Sram® X-0 Trigger Shifters, hydraulic front disc brake and Rockshox® Recon front fork. Mountains, desert, single track, city streets - bring it on! The SwissBike XO Bike uses all standard Mountain Bike wheels and components serviceable at any bike shop.

18" XO 27 P/N 13-04704
 20" XO 27 P/N 13-04705

SWISS TX 21 SPEED MOUNTAIN BIKE



The SwissBike® TX Mountain Bike is a great all-around bike for anyone looking for a great ride at an unbeatable price. Perfect for cruising through the city or countryside, this 21-speed bike comes equipped with Shimano gears, Gripshift shifters for your ultimate ride. At the end of your ride, just fold

up the lightweight SwissBike TX and stow it in your car trunk, city apartment or anywhere in-between. Think of it as an all-around bike for the all-around rider. The SwissBike TX Bike uses all standard Mountain Bike wheels and components serviceable at any bike shop.

18" TX 21 P/N 13-04699
 20" TX 21 P/N 13-04701



DAHON FOLDING BICYCLES

20" DAHON SPEED FOLDING BICYCLE



The Speed folding bicycle from Dahon features the latest in frame design with gearing provided by a 8-speed Shimano SIS derailleurs. Frame is custom drawn 4130 lite-chromoly steel and the wheels are 20"x1-3/8" with stainless steel spokes and lite-alloy rims. The folded size of the bike is 10"x 22"x 32", Wt: 26.5 lbs., and folding time is only 10 seconds. Color: Blue P/N 13-00043.....

26" DAHON MATRIX FOLDING BIKE



Featured in AOPA Pilot and Flying magazines, the new Matrix 26" folding bicycle features 24-speed central gears with grip shift, all aluminum lightweight frame with suspension fork, Pro-Max brakes, alloy rims, and an all aluminum finish. Folded size: 13" x 28" x 38". Wt.: 28.5 lbs. A very lightweight high performance bike for the serious rider in a folded size that stows easily in an aircraft baggage

compartment or a car trunk. Color: Black P/N 13-00040.....

OTHER DAHON FOLDING BIKES



MARINER



SPEED



JETSTREAM



| Model | Color | Wheels | Speed | Fold Size | Wt | P/N | Price |
|------------|------------|--------|-------|-------------|----|----------|-------|
| Boardwlk-1 | Burgundy | 20" | 1 | 10"x20"x32" | 32 | 13-00042 | . |
| Mariner | Ocean Blue | 20" | 6 | 12"x22"x32" | 30 | 13-00037 | . |
| Helios P8 | Aluminum | 20" | 8 | 11"x23"x33" | - | 13-00789 | . |
| Mariner | Ocean Blue | 20" | 6 | 11"x23"x33" | - | 13-00037 | . |
| Speed P8 | Steel Blue | 20" | 8 | 14"x23"x33" | - | 13-00043 | . |
| Espresso | Dk. Cherry | 26" | 21 | 14"x27"x36" | - | 13-00791 | . |
| Curve D3 | Fire Red | 16" | 3 | - | - | 13-05780 | . |
| Speed 8 | Fire Red | 20" | 8 | - | - | 13-00043 | . |
| Ciao! P8 | Charcoal | 20" | 8 | - | - | 13-05781 | . |
| Glide P8 | Carmel | 24" | 8 | - | - | 13-05782 | . |

DAHON ACCESSORIES

| Description | P/N | Price | Description | P/N | Price |
|-------------|----------|-------|---------------|----------|-------|
| Kickstand | 13-08310 | . | Rear Rack | 13-08340 | . |
| | | | Carry Bag 20" | 13-08360 | . |

DAHON SPEED D7 FOLDING BICYCLE



Riding a bike has never been this fun. The Speed combines sporty performance with unbelievable value. The frame is hand-welded from custom-drawn 4130 chromoly Sonus tubing and incorporates six different patented technologies, resulting in what is probably Dahon's stiffest frame. It features the Dahon Neos rear derailleurs, a revolutionary new design that has an ultra short cage for improved ground clearance and super fast shifting. Dahon paired the Neos with an 11-30T cassette, which, when compared with the previous 14-28T freewheel, represents a 37% increase in gear range. Sleek, simple and excellent value - just what most people want in a folding bike. Moroccan Blue 27.1lbs..... P/N 13-04094.....

DAHON CADENZA FOLDING BICYCLE



The Cadenza is a full-size 16 SPEED road bike which is ideal for long range riding on asphalt. With its skinny tires and lightweight aluminum frame and components, the Cadenza is a fast road bike which affords the rider an upright posture. Features include carbon-wrapped aluminum handle bar and ergonomic bar ends, quick release folding stem, and alloy rims with stainless spokes. P/N 13-04062.....

RIVIERA FOLDING ELECTRIC BICYCLE

Riviera folding electric bicycle is a one of kind folding electric bicycle that anyone can have fun with. You can ride this electric bike three different ways: 1. Like a regular bike in the "OFF" mode. 2. Pedal normally in the "ON" position and the pedal assist kicks in and helps you out! 3. Use the thumb throttle and NO pedaling is required! The Riviera is popular with RVers as well as private pilots. With gas prices high and with more people concerned about the environment, the electric bike is a wonderful option. P/N 13-04070.....



FUN CRUZ'N PORTABLE SCOOTER

Built with highest quality parts • Subaru Robin 4-stroke engine • Quiet, smooth, and "Subaru" long life • Meets California & Federal emissions • No mixing fuel/enclosed tank for 85 mi. • Foldable handlebars & adjustable seat • Compact and light for stowing • Rear "cruising" suspension • Front & back disk brakes • Quiet long-life belt drive • Many "cruising accessories". P/N 13-03273.....



TRAVEL SCOOT



Incredibly small folding size 33" x 12" x 10". Fits where no mobility scooter has fit before. Made of aircraft-grade aluminum. Weighs only 47 lbs. including the 24V 12Alt battery, basket, and carrying bag. Set up time less than one minute. Heaviest part is only 20 lbs. Supports 260 lbs plus some luggage. Speed 7 mph & 8 miles percharge. Battery approved for airline transport. P/N 13-03635.....

PATMONT GSR CRUISER

After 22 years of building high quality motorized scooters for a wide variety of customers, PMW has now developed what it believes is the perfect machine for a very large segment of motorized scooter enthusiasts. * Suggested Usage: City / Cruising * Engine: 29cc two-stroke 40:1 oil ratio * Max Speed: 24mph * Transmission: chain drive w/ centrifugal clutch * Weight: (lb) 32lbs * Est. Fuel Econ. (* California Air Resource Board Legal * Dimensions: L-34" W-13" H-42 (Folded L-34" W-13" H-14") * Additional Features Frame: 4130 chromoly - lifetime warranty on the frame * Forks: 4130 chromoly - lifetime warranty on the fork * Handlebars: 6061 T6 aircraft grade aluminum with slightly wider than standard cross bar for better handling * Suspension: No suspension but the frame is designed to flex to absorb shock " Flexdynamic " * Carburetor : Non adjustable/ maintenance free * Capacity: 400lbs P/N 13-06077.....



PS

PARACHUTES

SOFTIE EMERGENCY PARACHUTES



MINI-SOFTIE

An extremely comfortable State-of-the-art lightweight emergency parachute system designed to fit into the restricted cockpits of today's aircraft. The steerable conical canopy is designed for a 240# maximum suspended weight. System size and weight 2"x15" w. x 24" long. 14 lbs.

P/N 13-03505-X.....

MICRO-SOFTIE

A narrower version of the Mini-Softie with a 13" wide harness designed to stay secure over the shoulders of slightly built people. The steerable conical canopy is designed for 180# maximum suspended weight. System size and weight 2"x13" w. x 23" long. 13 lbs.

P/N 13-03510-X.....

LONG-SOFTIE

Specifically designed for today's high-tech soaring machines and aerobatic aircraft which have little if any cockpit room. The Long-Softie comes complete with a steerable conical canopy designed for 240# maximum suspended weight. System size and weight 2"x15" w. x 35" long. 15 lbs.

P/N 13-03515-X.....

SOFTIE-SEAT PACK

Container and harness only. Order a parachute separately or specify type of parachute you have to make sure container is suitable size.

P/N 13-03520-X.....

WEDGE-SOFTIE

A wedged shaped version of the popular MINI-SOFTIE and MICRO-SOFTIES. The WEDGE-SOFTIE is designed specifically to add lumbar and sacral support during high positive "G" maneuvers. Ideal for the upright scotting found in Pitts style seating. Specifications: 3" thick at bottom, 1/2" thick at top x 14" wide x 24" long. Canopy Type: Slecraable Conical*. Total weight: 14 lbs.

P/N 13-03524.....

NOTE: Complete the Part Number with Color (-1) Red, (-2) Black (-3) Royal Blue, (-4) Navy Blue, (-5) Grey, (-6) Sage Green or (-7) Olive Drab. Also complete P/N with "C" for Conventional or "A" for Aerobatic. Example: P/N 13-00000-5A.



PREMIUM TRIM PARACHUTE

360/425/490" Premium Trim Emergency Back Parachutes. Includes: Snaps on legs, Snaps on thread thru adapter on the chest, free carrying bag. **Features:** * Color Choices: Black or Red or Navy Blue (Black Trim & Harness). * Hard-

ware: B-12 Snaps on Leg Straps, Thread-thru on Chest. * Logic: Mass produce in "standard configuration" with limited colors. * Free Carry Bag Included * Same quality parachute system that performs equally as the pre-existing "Signature Series" without frills or options.

| Description | Part No. | Price |
|-----------------------------|----------|-------|
| Premium National Flat Red | 13-06263 | . |
| Premium National Flat Black | 13-06264 | . |
| Premium National Flat Navy | 13-06265 | . |

NATIONAL EMERGENCY PARACHUTES

National parachutes are built with the finest U.S. materials in accordance with TSO C23b in the Standard Category. Constructed with 1.1 oz. ripstop nylon. High stressed areas are reinforced with Kevlar. The pack design allows greater movement in and around the aircraft. Highly recommended by Aerobatic Champions Leo Loudenslager and Patty Wagstaff.



NATIONAL'S BACKPACK - developed with the pilot in mind and the most popular model. The teardrop shape provides flexibility and maximum comfort even in the tightest cockpits.

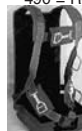
Standard design includes a tapered width and teardrop shape that hugs the back and also provides comfortable lower lumbar support

| Size | L | W Top | W Bottom | Thickness Upper Back | Thickness Lower Lumbar | Part No. | Price |
|------|-----|-------|----------|----------------------|------------------------|----------|-------|
| 360" | 22" | 13" | 15" | 1-3/4" | 1-3/4" | 13-03300 | . |
| 425" | 22" | 13" | 15" | 1-3/4" | 2" | 13-03200 | . |
| 490" | 22" | 13" | 15" | 1-3/4" | 2-1/4" | 13-03400 | . |

*360 = Recommended Pilot Weight is up to 177 lbs.

*425 = Recommended Pilot Weight is up to 208 lbs.

*490 = Recommended Pilot Weight is up to 241 lbs.



NATIONAL'S SEAT PACK - Especially desirable when the cockpit has more vertical space than horizontal. For added comfort, the seat pad has 1 inch of "Astronaut Foam" above the parachute (accessible to remove or add foam/padding as required). Comes with TT adapters or two B12 snaps. Quick ejector snaps available (special order).

| Size | L | W Top | W Btm. | Thickness Upper Back | Thickness Lower Lumbar | Part No. | Price |
|------|-----|-------|--------|----------------------|------------------------|----------|-------|
| 360" | 22" | 13" | 15" | 1/4" | 2-3/4" | 13-03411 | . |
| 425" | 22" | 13" | 15" | 1/4" | 3-1/4" | 13-03412 | . |
| 490" | 22" | 13" | 15" | 1/4" | 3-1/4" | 13-03413 | . |



NATIONAL'S CHAIR - Designed for pilots whose aircraft has little cockpit space and to accommodate pilots who prefer a wrap around pack. The parachute is packed through the entire container length to maintain full flexibility and the slimmest profile throughout the container.

| Size | L | W Top | W Bottom | Thickness Upper Back | Thickness Lower Lumbar | Part No. | Price |
|------|-----|-------|----------|----------------------|------------------------|----------|-------|
| 360" | 40" | 13" | 15" | 1-3/4" | 2" | 13-03421 | . |
| 425" | 40" | 13" | 15" | 1-3/4" | 2-1/4" | 13-03422 | . |
| 490" | 40" | 13" | 15" | 1-3/4" | 2-1/2" | 13-03423 | . |



NATIONAL FLAT PARACHUTE

The flat pack is slightly wider and more rectangular but much flatter than our original back parachute's "teardrop" shape. The National FLAT is thinner and even more supple than before. The "Flat-Pack" parachute container provides two choices in packing configuration: 1. More canopy in the upper container for the absolute thinnest beltline thickness (Taper Pack). 2. Canopy spread evenly to be one thickness (thinness!) top to bottom (Fully Flat Pack).

| Description | Part No. | Price |
|----------------------------|----------|-------|
| National Flat | 13-06270 | . |
| National Flat Bag | 13-06266 | . |
| National B-12 Snaps | 13-01959 | . |
| National Quick Eject Snaps | 13-06268 | . |

PARA-CUSHION EMERGENCY PARACHUTES



Each Para-Cushion system features the patented Pop-Top type container with the externally mounted pilot chute which provides a flat profile while worn and gives a quick and positive send off when released. The canopy risers are neatly hidden in built-in channels contoured into the container.

Each container is padded with a luxurious 1/2" (1cm) layer of Confor™ foam, covered with rich silver grey velour fabric. The harness utilizes a light weight fixed-dimension main lift web with individual leg strap design for ease of walking and maximum cockpit movement while saving weight and space. Fully adjustable. Deployment is ripcord actuated with the handle located at the front left side of the harness. Each system is assembled with the popular 26 ft diameter MID-LITE canopy freshly packed by an FAA licensed parachute rigger. Every system is delivered in a matching carrying bag with the complete service manual, ready for flight.

PARA-CUSHION BACK™ - The Model 303 parachute assembly is the most popular model and used by warbird, sailplane & aerobatic pilots. The back-mounted container conforms to the curve of your shoulders, and is only 24" (60 cm) tall by 16" (40 cm) wide and less than 3" (7 cm) thick. The Model 303 weighs approximately 15 lbs. (6.5 kg.). It is recommended when head space is at a minimum, such as Christen Eagle & Grob.

P/N 13-03440.....

PARA-CUSHION CHAIR™ - The Model 305 is truly a chair-parachute, covering the back of the body from shoulders to just above the knees. The patented chair-type container conforms to the curve of your back. It is especially popular among sailplane pilots flying for hours in the supine position, it is literally a "parachute-cushion" beneath the pilot. It is 42" (105 cm) long by 16" (40 cm) wide and varies from 2.5" to less than 1" (6.5 to 2.5 cm) thick, designed specifically for use where space is minimal. The complete system weighs approximately 16.5 lbs. (7.5 kg.).

P/N 13-03442.....

PARA-CUSHION SEAT™ - The Model 304 parachute assembly is designed specifically for emergency use by sport aviators flying aircraft utilizing a seat pan. The parachute container is a seat cushion 12"x16" (30cmx40 cm) and less than 3" (7 cm) thick. Because the backpad is only a half inch (1 cm) thick, the system is also especially suited to aircraft with restricted stick or rudder travel, or when head room is not restricted, such as Stearman, Great Lakes and Citabria. The complete system weighs approximately 15 lbs. (6.5 kg.). A zip-on 3" (7 cm) Confor-foam™ padded Travel Cushion is an optional accessory

P/N13-03441.....

OXYGEN POCKET - Zipper pocket that your oxygen tank can fit in. Available for the 303 & 305.

P/N 13-04921.....

| OPTIONS | | | |
|--------------------------|-----|--------------------------|---|
| Aerobatic Harness Option | N/C | Quick ejector snaps | . |
| Capewell riser releases | . | Quick ejector snaps | . |
| Oxygen pocket | . | (Aerobatic) | . |
| Sheepskin backpad | . | Monogram personalization | . |

PS

SURECHECK CHECKLISTS – MUTT MUFFS



SURECHECK CHECKLISTS

These versatile checklists cover all aspects of preflight, standard operation procedures, emergency procedures, V-speeds, ATC light signals, and include a TCA and sectional scale. Easy to read large, black on white type.

| Model | Part # | Price | Model | Part # | Price |
|----------------|----------|-------|---------------|----------|-------|
| PIPER | | | CESSNA | | |
| Tomahawk | 13-09708 | . | C-177 | 13-09731 | . |
| Cher 140 | 13-09709 | . | C-182 | 13-09732 | . |
| Cadet | 13-09710 | . | C-206 | 13-09733 | . |
| Warrior II | 13-09711 | . | C-210 | 13-09734 | . |
| Archer II | 13-09712 | . | C-172RG | 13-09735 | . |
| Arrow II | 13-09713 | . | C-182RG | 13-09736 | . |
| Arrow III | 13-09714 | . | C-177RG | 13-09737 | . |
| Arrow IV | 13-09715 | . | BEECH | | |
| Cher "six" 260 | 13-09716 | . | Debonair A33 | 13-09738 | . |
| Cher "six" 300 | 13-09717 | . | Debonair B33 | 13-09739 | . |
| Saratoga | 13-09718 | . | Debonair C33 | 13-09740 | . |
| Lance | 13-09719 | . | Bonanza F33A | 13-09741 | . |
| Seminole | 13-09720 | . | Bonanza V35 | 13-09742 | . |
| Seneca I | 13-09721 | . | Bonanza A36 | 13-09743 | . |
| Seneca II | 13-09722 | . | Duchess 76 | 13-09744 | . |
| Seneca III | 13-09723 | . | Baron 55 | 13-09745 | . |
| Seneca IV | 13-09724 | . | Baron 58 | 13-09746 | . |
| Aztec E | 13-09725 | . | OTHER | | |
| Aztec F | 13-09726 | . | Katana DA 20 | 13-09747 | . |
| CESSNA | | | Commander 114 | 13-09748 | . |
| C-150 | 13-09727 | . | Mooney M20C | 13-09749 | . |
| C-152 | 13-09728 | . | Mooney 201 | 13-09750 | . |
| C-172 | 13-09729 | . | AA-5B Tiger | 13-09751 | . |
| C-172XP II | 13-09730 | . | Tabago | 13-09752 | . |



SURECHECK ACCESSORIES

ATISPAD - Sticky posting pads for obtaining ATIS, ASOS, AWOS. Shrink wrapped in pads of (50) 3-3/4" x 4"
P/N 13-09753



CLEARANCE PAD - Posting pads for obtaining IFR Clearances by pilots. Provides in-flight writing for Altitude, Heading, Frequency. Shrink wrapped in pads of 50 "CRAFT" style 5-1/2" x 6-1/4"
P/N 13-09754



FSSPAD - Bonded legal pad for obtaining weather briefings from FSS Shrink wrapped in pads of 50 sheet 5-1/2 x 6-1/4.
P/N 13-09755



APPROACHPAD - Spiral Bound IFR approach chart holder. Holds up to 10 approach charts in transparent plastic. Easy Access with visible chart name in right corner. Fits on yoke clips or kneeboards for easy in-flight use.
P/N 13-09756



V BOOK - Small notebook with V-Speeds and approach Speeds. Perfect for Flight Schools, and Renters.
P/N 13-09757



PREFLITEPAD - All the information you need for weight and balance and V-speeds. Calculate center of gravity and keep other vital information at your fingertips. You'll wonder how you got through preflight without it! 4.25" x 7". Pad of 40
P/N 13-09854



CHECKRIDE CHECKLISTS - Unique to the SureCheck brand. Incorporates FAA PTS standards for new ratings. Also serves as a handy reference during all phases of training. Packed with a wealth of information not found anywhere else in such a complete configuration. Perfect for students and seasoned pilots to renew rating certs. Include the updates from the FAA (effective August 2002). New redesigned format with increased size to make them

even easier to read.
Private pilot..... P/N 13-00051

Instrument..... P/N 13-00052

Commercial..... P/N 13-00053



MUTT MUFFS

- Over-the-Head Hearing Protector for Animals.
- Specially Designed Wide Foam Filled Ear Seals for Maximum Comfort.
- Engineered specifically to properly meet the contour of a dog's head
- Comfortable and Lightweight
- Adjustable Straps for Optimum Fit.
- Inner sound-deadening foam is the same density found in pilot's high-end headsets
- Made entirely in the United States of America
- Patent Pending

SIZE CHART - The overall circumference measurement of your dog's noggin at the largest point is the best determination of size, because if you choose a size too large, the muffs won't seal well against his head, and you lose all the sound-reducing properties you were shooting for. Your dog's weight is also a good indicator of which size to choose.

| Muff Size | Typical Dog Weight | Head Circumference | Inner Shell Width | Inner Shell Height |
|-----------|--------------------|--------------------|-------------------|--------------------|
| X-Small | 5-10 lbs | 7-9" | 1.5" | 1.625" |
| Small | 9-25 lbs | 9-13" | 1.75" | 1.75" |
| Medium | 20-50 lbs | 13-18" | 2.5" | 2.5" |
| Large | 50-95 lbs | 18-23" | 3.25" | 3.25" |
| X-Large | 95+ lbs | 23+" | 4" | 4" |

| Size | Weight | Part No. | Price | Size | Weight | Part No. | Price |
|---------|--------|----------|-------|-------|--------|----------|-------|
| X-Small | 1.5 oz | 13-05536 | . | Large | 4.0 oz | 13-05539 | . |
| Small | 1.7 oz | 13-05537 | . | XL | 5.8 oz | 13-05540 | . |
| Med | 3.0 oz | 13-05538 | . | | | | |

CUSTOM COLORS - David Clark® has their signature "Green" and there's the ever-classic "Mutt Muff® Gray". But now, Mutt Muffs® are available in three additional colors! **Red! Blue! and Pink!**

P/N 13-05541



CO-PILOT - TRIANGLE BANDANA FOR DOGS

The proper uniform for the distinguished canine aviator. Sewn on all three sides. Finished Sizes: Large: 21.5" x 21.5" x 29", Small: 14" x 14" x 20"
Large..... P/N 13-05547

Small..... P/N 13-05548



HYDRO-BOWL FOR DOGS

Next time your pooch is pantin' for a drink, pull out the convenient, collapsible Hydro Bowl. Waterproof and made of a high-tech, durable plastic canvas, the Hydro Bowl folds up and snaps closed into a compact triangle for storage. Attach it to a leash, backpack, bicycle, or a variety of other places for easy storage. Hold 5 cups
P/N 13-05546

DOG IS MY CO-PILOT - BUMPERSTICKER



"Dog Is My Co-Pilot" is the trademarked motto of Bark magazine - accept no substitute. As seen on dog-friendly cars from coast to coast!.... P/N 13-05545



E.S.P. CHECKMATE™

E.S.P. CheckMate™ is a 1st for Aviation, and the only product of its kind available. Our new "Emergency Substitute Pilot"™ could save the lives of you and your passengers by providing the most basic and simplest of terms and procedures to the NON-PILOT, in the unfortunate event the real pilot becomes incapacitated. E.S.P. CheckMate™ assists the NON-PILOT in controlling the aircraft, reaching help on the radio, and if necessary, landing the aircraft. The graphical format makes it easy and comfortable to follow. E.S.P. CheckMate™ can easily be the difference in the outcome of this most serious type of emergency. For safety

and readability, we are publishing only in 7.5" x 10" size.

P/N 13-01834

CHECKMATE CHECKLISTS



CHECKMATE CHECKLISTS

Checkmate is the only checklist that contains virtually all data desired by pilots to fly the airplane while excluding the extraneous information which leads to inefficiency, confusion and even refusal to use. They eliminate the tedious and cluttered 15-page flip-book that pilots quickly become discouraged from using.

Checkmate contains the most comprehensive V-speed section in the industry. V-speeds are listed in Knots and MPH. Checkmate not only makes a dramatic difference in everyday use, but also in critical situations. Emergency procedures are right there! Every time! With most of the emergencies there is no time to flip pages looking for the correct procedures.

Available for over 300 single and twin engine aircraft. All follow a standard format. Used by some of the best flight schools in the country. Checkmate checklists come in standard 6.5"x9" size.

| Description | Part No. |
|---------------------------------|----------|
| Alarus/Zenith CH2000 | 13-04627 |
| Aviat Husky A1-B | 13-05490 |
| Aviat Husky A1-B Amphibian | 13-05491 |
| Beechcraft Baron B55 64'-76" | 13-04649 |
| Beechcraft Baron B55 77'-82" | 13-04650 |
| Beechcraft Baron 58 285 HP | 13-04651 |
| Beechcraft Baron 58 300 HP | 13-04652 |
| Beechcraft Baron 58P 310 HP | 13-04653 |
| Beechcraft Baron 58P 325 HP | 13-04654 |
| Beechcraft G58 G100 | 13-04655 |
| Beechcraft Bonanza A36 '84 & On | 13-08699 |
| Beechcraft Bonanza F33A | 13-04601 |
| Beechcraft Bonanza G36 G1000 | 13-04608 |
| Beechcraft Bonanza JKM35 | 13-04602 |
| Beechcraft Bonanza NP35 | 13-04604 |
| Beechcraft Bonanza V35 | 13-04605 |
| Beechcraft Bonanza V35TC | 13-04606 |
| Beechcraft Bonanza A36 thru '83 | 13-04607 |
| Beechcraft Debonair CEF33 | 13-08697 |
| Beechcraft Duchess 76 | 13-04648 |
| Beechcraft Bonanza S35 | 13-08698 |
| Beechcraft Sundowner | 13-08696 |
| Cessna 150 '59-'63 | 13-08605 |
| Cessna 150L | 13-08606 |
| Cessna 150M | 13-08607 |
| Cessna 152 | 13-08610 |
| Cessna 172 F, G, H | 13-08612 |
| Cessna 172 I, K, L | 13-08613 |
| Cessna 172 M | 13-08615 |
| Cessna 172 N | 13-08620 |
| Cessna 172 P | 13-08625 |
| Cessna 172 R G1000 | 13-04575 |
| Cessna 172 RG | 13-08635 |
| Cessna 172 S | 13-04576 |
| Cessna 172 S G1000 | 13-04577 |
| Cessna 177 | 13-08636 |
| Cessna 177 RG | 13-08637 |
| Cessna 182 E-M | 13-08638 |
| Cessna 182 P | 13-08639 |
| Cessna 182 Q | 13-08640 |
| Cessna 182 R | 13-08641 |
| Cessna 182 RG | 13-08645 |
| Cessna 182 S | 13-04578 |
| Cessna 182 T | 13-04579 |
| Cessna 182 T G1000 | 13-04580 |
| Cessna T182T | 13-04581 |
| Cessna T182T G1000 | 13-04582 |
| Cessna 206H | 13-04583 |
| Cessna 206H G1000 | 13-04584 |
| Cessna T206H G1000 | 13-04585 |
| Cessna T206H G1000 GFC700 S | 13-05637 |
| Cessna T206H G1000 GFC700 C | 13-05638 |
| Cessna T206H G1000 Amphibian | 13-05394 |
| Cessna 210M | 13-05476 |
| Cessna T210M | 13-05483 |
| Cessna 210N | 13-05482 |
| Cessna T210N | 13-05484 |
| Cessna 303 Turbo Crusader S | 13-05635 |
| Cessna 303 Turbo Crusader C | 13-05636 |
| Cessna 310Q | 13-04629 |
| Cessna 310R | 13-04630 |
| Cessna 340A | 13-04631 |
| Cessna 402B | 13-04632 |

| Description | Part No. |
|---------------------------------------|----------|
| Cessna 421B | 13-04634 |
| Cessna 421C | 13-04637 |
| Cirrus SR20-Electric | 13-04614 |
| Cirrus SR22 | 13-04615 |
| Citabria 7ECA | 13-04609 |
| Citabria 7KCAA | 13-04610 |
| Citabria 7KCAB | 13-04611 |
| Citabria 7GCBC | 13-04612 |
| Diamond DA20 C1 | 13-04621 |
| Diamond DA20-100 | 13-04622 |
| Diamond DA40-180 | 13-04623 |
| Diamond DA40-180 G1000 | 13-04624 |
| Diamond DA40-180 FP | 13-04625 |
| Diamond DA40-180 FP G1000 | 13-04626 |
| Diamond A42 G1000 | 13-04656 |
| Maule MT 7-235 | 13-04613 |
| Mooney 201 (M20J) | 13-08700 |
| Mooney Encore M20K | 13-05492 |
| Mooney M20K-231 | 13-04616 |
| Mooney M20K-252 | 13-04617 |
| Mooney M20M/Bravo | 13-04618 |
| Mooney M20M/Ovation | 13-04619 |
| Mooney M20R/Ovation | 13-05493 |
| Mooney M20R/Ovation G1000 | 13-04620 |
| Mooney M20S/Eagle | 13-05494 |
| Mooney M20TN/Acclaim Standard | 13-04714 |
| Mooney M20TN/Acclaim Compact | 13-04715 |
| Piper 6X | 13-04586 |
| Piper 6XT | 13-04587 |
| Piper Archer II | 13-08670 |
| Piper Archer III | 13-04591 |
| Piper Archer III with Avidyne Entgra | 13-05487 |
| Piper Arrow II | 13-08675 |
| Piper Arrow III | 13-08680 |
| Piper Arrow 180 | 13-04592 |
| Piper Arrow 200 | 13-04593 |
| Piper Aztec E | 13-04643 |
| Piper Aztec F | 13-04644 |
| Piper Cherokee 140 | 13-08655 |
| Piper Cherokee 180 | 13-08656 |
| Piper Cherokee 235 | 13-08685 |
| Piper Cherokee Six/26 | 13-05485 |
| Piper Cherokee Six/30 | 13-05486 |
| Piper Lance | 13-04594 |
| Piper Lance II Turbo | 13-04588 |
| Piper Malibu 310 | 13-04598 |
| Piper Mirage 350 | 13-04599 |
| Piper Navajo 310 | 13-04645 |
| Piper Navajo 350 Chieftan | 13-04647 |
| Piper Saratoga FG | 13-04595 |
| Piper Saratoga SP | 13-05489 |
| Piper Saratoga II HP | 13-04596 |
| Piper Saratoga II TC | 13-04597 |
| Piper Seminole | 13-08690 |
| Piper Seneca I | 13-04639 |
| Piper Seneca II | 13-08695 |
| Piper Seneca III | 13-04640 |
| Piper Seneca IV | 13-04641 |
| Piper Seneca V | 13-04642 |
| Piper Tomahawk | 13-08650 |
| Piper Twin Comanche | 13-04638 |
| Piper Warrior | 13-04588 |
| Piper Warrior II | 13-08665 |
| Piper Warrior III | 13-04590 |
| Piper Warrior III with Avidyne Entgra | 13-05640 |
| Piper Warrior III Standard | 13-05639 |
| Symphony SA160 | 13-04628 |

Checkmate Checklists.....All Models..... - \$16.95
 Checkmate Universal Single.....P/N 13-08705.....

CHECKMATE IFR



In the IFR environment organization and management lead to smoother, stress-free and safer outcomes. CheckMate IFR will assist you through preflight planning to touch-down on the IFR flight. Whether you are cleared for the complete approach or radar vectored to the FAF, CheckMate IFRs format will help keep the flight business orderly and functional. It is precise & specific to the different phases of those sometimes precarious flights. You will be reminded when to prepare and look ahead to each phase. A quick review of CheckMate IFR before flight will help you determine pilot and aircraft preparedness and legalities, how to give those greatly appreciated pilot reports on icing and turbulence, and what ATC expects you to do after radio failure; Professional information in a concise and orderly manner. Standard (6" x 9.5").....P/N 13-08805.....
 Compact (5" x 7").....P/N 13-08810.....

SURVIVING THE FIRST 24 HOURS CHECKMATE®



Surviving the First 24 Hours CheckMate® clearly details the procedures and equipment that you will need to survive a forced landing and the subsequent 24 hours. The preparation before a flight can easily make the difference between surviving or not surviving. This is one of the most important pieces of equipment in a pilot's pre-flight planning.

Available in three sizes.

Standard (6.5" x 9")..... P/N 13-00444
 Compact (5" x 7")..... P/N 13-00446
 Pocket (3.75" x 3.25")..... P/N 13-00447

CHECKBOOK CHECKLISTS



Aviation Checkbook is a high quality, multi-page laminated checklist utilizing factory type information for FAA Part 141 and 61 schools. Designed as a primary checklist giving all details and responses needed by new students or pilots wanting a multi-page checklist without the usual bulk. Shirt pocket size with mark and erase surface for notes. The various checklists for your aircraft are stacked and color tabs allow you to locate the checklist you need.

| Part No. | Description (Checkbook Checklist for:) | Price | Part No. | Description (Checkbook Checklist for:) | Price ea. |
|----------|--|-------|----------|--|-----------|
| 13-03091 | Cessna 150 D-K | . | 13-01275 | Cessna 182Q | . |
| 13-01262 | Cessna 150M | . | 13-01276 | Cessna 182R | . |
| 13-01263 | Cessna 152 | . | 13-01277 | Cessna 182S | . |
| 13-01264 | Cessna 172FGH | . | 13-01278 | Cessna 182RG | . |
| 13-01268 | Cessna 172R | . | 13-01280 | Cherokee160 | . |
| 13-01270 | Cessna 172P | . | 13-01281 | Cherokee180 | . |
| 13-03102 | Cessna 172RG | . | 13-01282 | Piper Warrior | . |
| 13-01272 | Cessna 182E-M | . | 13-01283 | Piper Warrior II | . |
| 13-01273 | Cessna 182N | . | 13-01284 | Piper Archer II | . |
| 13-01288 | Piper Seminole | . | 13-01286 | Piper Arrow II | . |
| 13-01291 | Piper Seneca I | . | 13-01287 | Piper Arrow III | . |

FLYWRITE COCKPIT WRITING PAD



FlyWrite™ is not another "flight planning" layout. It is designed to give you a dedicated place for all the information that flows while in the cockpit of the aircraft. Convenient top-bound writing pad. Each pad contains 50 5" x 8" sheets and can be used with or without standard junior legal vinyl binders. IFR clearances, ATIS, AWOS, frequencies, flight times, hobbs times, tach times, airport information, frequency changes, hand-offs, altitude changes, weather, etc, now have a home. There is also an area for random information or diagrams. FlyWrite™ also contains a handy vertical scale which measures mileage for WAC, SEC, TAC, NOS, JEPP, & ELA charts, eliminating the need for that ruler you can never find.
 P/N 13-03307.....



MOUNTAIN FLYING CHECKMATE™

CheckMate Aviation's new Mountain Flying CheckMate™ is a full color, plastic card that is a compilation of the special knowledge required for mountain flying. Competent flying in mountainous terrain requires knowledge far beyond what is taught in standard flight courses; and as most pilots discover, sooner or later, flying in mountainous terrain is inevitable.

CheckMate Aviation's Mountain Flying CheckMate™ covers both the rules and common sense of flying that are critical when in this aspect of flight. Available in 3 sizes. Each carries CheckMate's usual lifetime guarantee.

Standard (6.5"x9")..... P/N 13-02713.....
 Compact (5"x7")..... P/N 13-02714.....
 Pocket (6.75"x3.25")..... P/N 13-02716.....

CHECKLISTS

PROPILOT CHECKLISTS



Step up to professional quality with ProPilot Checklist! These handsome booklets are fully laminated and wire-bound for durability and long life, and are perfect for VFR and IFR pilots of all skill levels.

All Preflight, Normal, and Emergency procedures are included. IFR checklist items are integrated into phase of flight, and IFR Approach and Departure Briefing sections are also provided.

Flight planning is simplified by the inclusion of aircraft-specific performance data (V-speeds, takeoff distance, climb performance, cruise power settings, true airspeed, fuel burn, and landing distance), as well as weight and balance graphs. No

more digging through a bulky POH for critical performance numbers! Additionally, a wealth of other useful information is included, such as VFR communications and weather requirements, METAR & TAF codes, IFR Holding Procedures, illustrated Airport Signs & Markings, Light Gun Signals, and Intercept Procedures.

Conveniently sized at 6" wide by 9" high, ProPilot Checklist fits easily on your kneeboard. It's truly "The Last Checklist You'll Need!"™

| Description | Part No. | Price |
|---|----------|-------|
| ProPilot Checklist Cessna 150M | 13-06103 | . |
| ProPilot Checklist Cessna 152 | 11-05187 | . |
| ProPilot Checklist Cessna 172P | 11-05188 | . |
| ProPilot Checklist Cessna 172R | 11-05189 | . |
| ProPilot Checklist Cessna 172RG | 11-05192 | . |
| ProPilot Checklist Cessna 172S/SP | 11-05190 | . |
| ProPilot Checklist Cessna 172S/SP NAV | 11-05191 | . |
| ProPilot Checklist Cessna 172M | 13-05121 | . |
| ProPilot Checklist Cessna 182R | 13-05122 | . |
| ProPilot Checklist Cessna 182S | 13-05123 | . |
| ProPilot Checklist Cessna 182T | 13-05124 | . |
| ProPilot Checklist Cessna 182T NAV III | 11-05193 | . |
| ProPilot Checklist Cessna R182RG | 13-05125 | . |
| ProPilot Checklist Cessna TR182RG | 13-05126 | . |
| ProPilot Checklist Cessna Turbo T182 | 11-05194 | . |
| ProPilot Checklist Cessna 172N | 13-04940 | . |
| ProPilot Checklist Cessna 206 NAV III | 13-04941 | . |
| ProPilot Checklist Cessna Turbo T206H | 13-04942 | . |
| ProPilot Checklist Cessna Turbo T206H NAV III | 13-04943 | . |
| PropPilot Checklist Cessna A36-927 up | 13-05127 | . |
| ProPilot Checklist Diamond DA20-C1 | 11-05195 | . |
| ProPilot Checklist Diamond DA40-180 | 11-05196 | . |
| ProPilot Checklist Piper PA28-161 | 13-04792 | . |
| ProPilot Checklist Piper PA28-181 | 11-05197 | . |
| ProPilot Checklist Piper PA28R-201 | 13-04794 | . |
| ProPilot Checklist Piper PA28-161 Warrior II | 13-04944 | . |
| ProPilot Checklist Piper PA28R-201 Arrow | 13-04945 | . |
| ProPilot Checklist Piper PA34-200T Seneca II | 13-04946 | . |

THE PRECIFLIGHT CHECKLIST



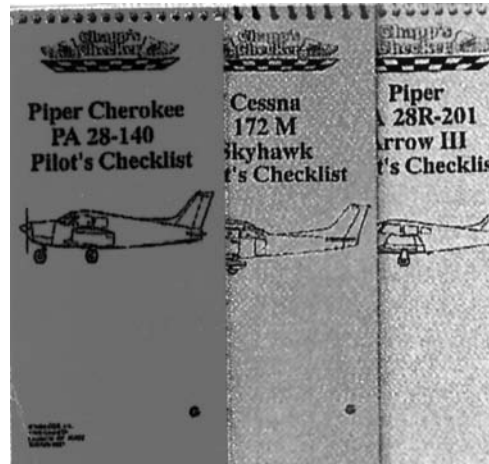
More than just a checklist, PRECIFLIGHT® will actually help pilot along all phases of flight: from preparation to tie-down and through emergencies. It is a brightly colored 18 pages booklet that is logically divided to minimize page flipping. Once used to it, it is a natural as good landings.

It regroups important information such as light gun signals, VFR minimums, weather symbols and all that with easy to interpret drawings. Even better, it has features that pilots have to look for in other publications and equipment like a built-in 1/500 000 ruler, frequently used aviation phone numbers and Internet sites and more.

PRECIFLIGHT® was also designed for convenience: it will fit in your shirt pocket or clip on the aircraft yoke where it will be available to use with one hand. Made of a sturdy waterproof paper, it will last a lifetime. It is designed to conform to FAA and Transport Canada regulations by a team of flight instructors and airline pilots

| Description | PN | Price |
|-----------------|----------|---------|
| Cessna 150/152 | 13-04979 | \$28.50 |
| Cessna 172 | 13-04980 | \$28.50 |
| Piper PA 28-160 | 13-04981 | \$28.50 |
| Piper PA 28-180 | 13-04982 | \$28.50 |
| Universal Model | 13-04983 | \$28.50 |

CHAPPS CHECKLISTS



Chapp's Checker provides aircraft-specific, POH-accurate checklists for a number of airplanes. Made of heavy, plastic-laminated paper, the Checkers are top spiral bound and measure about 3 x 6.5 inches. Tabbed indexing of each page makes selecting the needed checklist a 2-second operation.

The checklists are presented in order of use during a normal flight. Emergency procedure checklists are boldly marked for quick access. In addition, there is a page on which you can write your local radio frequencies.

The POH checklists comprise just 85 percent of each Chapp's Checker. The remaining 15 percent is composed of good piloting procedures, such as when to contact ground control or the tower. A separate page lists all of the aircraft's V-speeds. The back cover provides general information about the aircraft in question, such as gross takeoff/landing weight, engine type, fuel capacity, and true airspeed, power settings, and fuel consumption (in gallons per hour) at different altitudes.

| Cessna Checklists | Part No. | Price |
|---------------------------|----------|-------|
| C-150 (1959-1977) | 13-03390 | . |
| C-152 (1978-1985) | 13-03391 | . |
| C-172H (1967) | 13-03392 | . |
| C-172M (1973-1976) | 13-03393 | . |
| C-172N (1977-1980) | 13-03394 | . |
| C-172P (1981-1986) | 13-03395 | . |
| C-172Q (1983-1985) | 13-03396 | . |
| C-172R New (1996-) | 13-03397 | . |
| C-172S New (1997-) | 13-03398 | . |
| C-172RG (1980-1985) | 13-03431 | . |
| C-177B (1970-1978) | 13-03399 | . |
| C-182Q (1980-1986) | 13-03401 | . |
| C-182S New (1997-) | 13-03402 | . |
| C-182RG (1978-1986) | 13-03403 | . |
| Piper Checklists | Part No. | Price |
| Tomahawk (1978-1982) | 13-03404 | . |
| Cherokee 140 (1964-1977) | 13-03405 | . |
| Cherokee 180 (1963-1975) | 13-03406 | . |
| Warrior 151 (1974-1977) | 13-03407 | . |
| Warrior 161 (1997-1990) | 13-03408 | . |
| Archer II 180 (1976-1990) | 13-03409 | . |
| Arrow 180 (1967-1971) | 13-03415 | . |
| Arrow II (1973-1978) | 13-03410 | . |
| Arrow III 201 (1977-1990) | 13-03414 | . |

PLOTTERS

FLIGHT COMPUTERS



E6B METAL FLIGHT COMPUTER - The best slide-rule-style flight computer on the market, with solid aluminum construction and easy-to-read lettering. ASA's E6-B features a wind component grid and comprehensive cross-wind correction chart, and on the other side the slide computes time, speed, distance, altitude, true airspeed, and density altitude problems as well as conversions. Nautical and statute scales are included.

P/N 13-00813



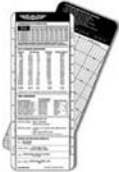
E6B PAPER FLIGHT COMPUTER - Made from solid, heavyweight fiberboard, an economical version of the aluminum model described above including all its problem-solving features.

P/N 13-02298



MICRO E6-B - This pocket-sized, brushed aluminum E6-B is a full function aviation computer. Popular among military pilots, it features a high-speed and low-speed wind correction slide, high-speed compressibility table, and instruction manual. Micro E6-B performs all the standard manual flight computer functions, and it conveniently fits in a shirt pocket or glove box.

P/N 13-02299



E6-B HIGH SPEED SLIDE - A companion product, this slide picks up where the traditional metal flight computer leaves off (ASA-E6B), providing calculations for the high-speed realm of flight (in the range of 220-700 knots or miles per hour). Pilots simply replace their current slide with this one, which then continues to use the circular computer from traditional E6-Bs. The slide also

includes compressibility correction chart, ICAO Standard Atmosphere reference table, worldwide time conversion table, speed limits for the United States, and most frequently-used weight & balance formulas. All of the pertinent formulas & information required for high-altitude, high-speed operations. Meets both FAR & JAR (international) requirements.

P/N 13-02301

FOLDING LAP BOARD



This 9" x 16" flying desk has 2 large clips to hold in-flight necessities such as charts, flightlogs, and approach plates. Lost communications procedures for both VFR and IFR, light gun signals, position reports, frequencies, and transponder codes are silkscreened on the brushed aluminum lapboard for quick reference during

emergencies. It folds in half when less space is needed and for convenient storage. Foam strips on the back keep the lapboard comfortably in place.

P/N 13-02314

TRI-FOLD KNEEBOARD



For the pilot who has a little more to juggle, the Tri-Fold Kneeboard uses the expertly styled VFR Kneeboard in a 3-panel jacket. The high-quality construction features durable material & double-sewn seams where extra stress takes place. The color is jet black with a logo attractively embroidered in silver on the front. The left panel has ample

room for small books, papers and unusually shaped items. The center panel holds the kneeboard under clear plastic. Either side of the center includes a pen/pencil holder and buttonholes that allow the pilot to fold back one or both panels of the kneeboard with the legband. This is ideal when operating a cyclic or stick. The right-hand side contains a clear pocket for easy map viewing. The elastic legband has velcro closures and will comfortably fit any leg size. Try the kneeboard that puts everything at your fingertips.

P/N 13-06950

PLOTTERS

Durable Lexan® resin won't melt, warp or break in extreme temperatures - guaranteed! Each plotter features 8 scales to meet the needs of all VFR aeronautical charts - nautical on one side, statute on the flip. Nautical-Statute conversion scale also included. Made in USA.



ULTIMATE ROTATING PLOTTER - 13-1/4" long. Rotating azimuth eases flight planning with direct readout of course. Made in USA.

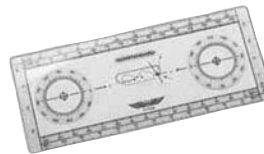
P/N 13-02302

ULTIMATE FIXED PLOTTER - 13-1/4" long. Quick scale reference is provided for both statute and nautical miles. Made in USA.

P/N 13-02424 .

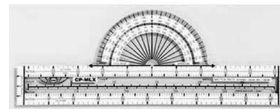
ULTIMATE MICRO PLOTTER - 8" long. Convenient for flight bag, shirt pocket, or airplane storage. Made in USA.

P/N 13-02303



INSTRUMENT PLOTTER - ASA's instrument plotter features: 12 scales to accommodate both NOS & Jepp instrument charts, including a conversion scale for Nautical and Statute miles; holding patterns depicted for both Standard and Nonstandard entries; compass roses allowing quick course & bearing information; and professional layout enabling easy reading during en route spot checks.

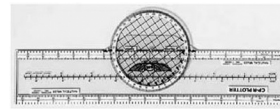
P/N 13-02306



FIXED PLOTTER - Constructed of sturdy clear plastic with easy-to-read numbers and scales. It includes WAC, Sectional, and Terminal Area scales, and is checked and approved by the Weights and Measures Department.

Quick scale reference is provided for both statute and nautical miles.

P/N 13-02304



ROTATING PLOTTER - Made from the same material and having the same features as the Fixed Plotter, but with the addition of a non-slip rotating azimuth to ease flight planning.

P/N 13-02307

ASA IFR & VFR KNEEBOARDS



These IFR and VFR Kneeboards are an attractive, light gray, brushed aluminum. Instrument and visual information is clearly silkscreened on the boards so pilots can quickly reference rules at a glance when operating a cyclic or stick. All information on the Kneeboards match current Federal Aviation Regulations. The Kneeboards feature a comfortable, 1.5" wide elastic legband that hugs the leg without binding. Velcro fasteners

can be adjusted without removing the kneeboard and fits all leg sizes. A pencil/pen holder is designed into the leg for fast note taking. The Kneeboards also feature a 4-3/4" wide metal clip that is easy to lift and strong enough to hold NOS charts and other necessary papers. Paper-protector elbows secure material, yet papers won't rip when pulled out.

VFR Kneeboards P/N 13-06925

IFR Kneeboards..... P/N 13-06930

ASA PILOT SUPPLIES

APPROACH PLATE BINDER

Made of durable black vinyl with a reinforced spine, it has easy-to-open, 1-1/2" steel rings that accommodate the drill pattern of the approach plates. ASA wings tastefully silver-foiled on the front cover. Choose from either 4-ring NACO or 7-Ring design.



NACO.....P/N 13-01066
7-Ring.....P/N 13-02316

FLIP BINDER

Perfect for Instrument Pilots who carry a smaller number of approach charts. One-inch rings are attached to a sturdy poly backing, with a loose poly cover. Scoring on front and back covers allows you to flip charts completely around the rings and display the one you want on top. Compact, convenient, and practical.



P/N 13-02321

BINDER KIT

Contains 1 binder, 10 sheet protectors, 5 color side dividers and a sheet of area stickers. NOS kit also contains 3 color dividers which hang from the bottom.



NACO.....P/N 13-01065
7-Ring.....P/N 13-02322

ASA DELUXE RING BINDER

The Deluxe 2" 7-Ring Binder is made of richly-grained simulated leather with edge stitching. It's bound for maximum durability and equipped with a ring system that will keep your approach plates securely organized and easily accessible. Convenient 8.5" x 9" size makes it easy to fit in



almost any flight bag.
ASA Deluxe 1" 7-Ring Binder.....P/N 13-05759
ASA Deluxe 2" 7-Ring Binder.....P/N 13-05760

ASA 1 INCH 7 RING TRIP BINDER

The 7-Ring Trip Binder is made of durable poly. It's bound for maximum durability and equipped with a ring system that will keep your approach plates securely organized and easily accessible. The three rings are spaced to match the 7-hole approach plate drill pattern. Convenient 7" x 9" size makes it easy to fit in almost any flight bag.



P/N 13-05825

SHEET PROTECTORS

Made of durable, translucent plastic to protect the most frequently used approach plates. Sold in packs of 10.



NACO Vinyl Pocket pk of 10P/N 13-02317
NACO Poly Folders pk of 10P/N 13-05820
7-Ring Vinyl Pocket pk of 10P/N 13-02318
7-Ring Poly Folders pk of 10P/N 13-05821

5 COLOR DIVIDERS

For quick reference of various sections of both types of approach plate charts, these five distinctly-colored dividers extend out beyond the side of the charts. Set of 5.



7-Ring.....P/N 13-02323.....
4-Ring.....P/N 13-05826.....

ASA 4 RING NOTEPAD

Compact, convenient writing pad that fits in your approach plate binder. 100 sheets per pad. Weight .80lbs



7-Ring.....P/N 13-05823.....
4-Ring.....P/N 13-05822.....

CHART WALLETS

These chart wallets organize, hold, carry, and display standard FAA charts conveniently. All styles feature black covers, silver wings logo, and clear vinyl organizer pockets so you can easily find the correct chart in a busy or turbulent cockpit environment.



Accordion-Fold Chart Wallet - 10 map pockets plus front & back covers
P/N 13-02324

Book-style Chart Wallet - 6 double-sided pockets holds up to 12 maps between the covers.
P/N 13-02325

Large Book-style Chart Wallet - Pockets hold up to 22 charts between the covers. Riveted spine.
P/N 13-00412

YOKE CLIP

ASA's new yoke clip holds all the necessary flight paperwork right where pilots need it, leaving their hands free to fly. Simple to install, the black plastic, I-Beam construction is strong enough to serve as a pilot's third hand. The clip is higher than other yoke clips, holding sectionals, approach plates, flight logs, checklists, flight computers, and pens in easy view.



The unique, over-centering cam easily adjusts to fit all general aviation aircraft yokes without modification.
P/N 13-01043

QUICK CHECK CARDS

A great reference tool for student pilots, pilots who fly more than one aircraft, or pilots flying at a new airport. Convenient shirt-pocket size provides quick access to aircraft V-speeds, weight and balance limitations, airport information, radio frequencies, and light gun signals. The durable plastic cards have room for pilots to write in their own data. Sold in packs of 5.



P/N 13-02332

FLIGHT PLANNER SHEETS

Cross-country planning sheets contain a flight plan section, weight & balance calculation chart, special equipment suffix chart, fuel management, space for radio frequencies, & more. Sold in pads of 48.



P/N 13-02331

STUDENT FLIGHT RECORDS

ASA Flight Record Folders provide areas to record pertinent student information, stage checks passed, lesson content, lesson performance, flight hours, instructor notes & endorsements, solo endorsements or aircraft checkout records, and are current to both Part 61 & Part 141 program requirements. Sturdy & durable, these flight records are available



separately, as part of ASA's pre-packaged training kits, or as part of an ASA PACK - Personalized Aviation Custom Kit.

SFR Private.....P/N 13-01548.....
SFR Commercial.....P/N 13-01549.....
SFR Instrument.....P/N 13-01551.....
SFR Helicopter.....P/N 13-01547.....

CERTIFICATES AVIATION ACHIEVEMENT AWARDS

Authentic, full-color certificates are perfect for framing yet sturdy enough to slip into the student's flight record as a pleasant surprise to be discovered on their next visit to the airport. Mark progress with style, while further motivating students. 9"x12". Sold in packs of 10.



Solo Flight Certificate.....P/N 13-02326.....
Private Ground School Certif.P/N 13-02327.....
Aviation Achievement Certif.P/N 13-02330.....
Helicopter Solo Flight Certif.P/N 13-02329.....

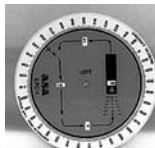
HOLDING PATTERN VISUALIZER

This useful tool shows a pilot which entry is appropriate given the assigned holding radial, making it a superb learning tool.

P/N 13-06940

LANDING PATTERN COMPUTER

Easily helps determine appropriate headings for each leg when landing or departing the airport - great teaching aid!



P/N 13-06935

HEADSET BAGS / FLIGHT BAGS

FLIGHT ATTACHE' - Holds all the materials a student pilot needs. 15" long x 11" deep.
P/N 13-02335



FLIGHT BAG - 23.5" long x 7.5" deep x 7.5" wide with expandable pockets.
P/N 13-02336.....



SINGLE HEADSET BAG - For those who like to fly with minimum baggage, this holds one headset, has extra pockets, and all-around padding.
P/N 13-02333



DOUBLE HEADSET BAG - Double-sided, 1/4" padding everywhere; can hold two headsets.
P/N 13-02334



ASA PILOT CAP

Pilot cap featuring comfort headband and classic wings logo. Stylish baseball cap. Black with classic grey trim neatly embroidered with white ASA wings. Adjustable headband for maximum comfort. No button to interfere with headset band. Long bill for sun protection. Perfect for cross-country flying, lounging with friends or on the tarmac hangar flying. Wear it proudly!
P/N 13-05841



FLIGHT COMPUTERS - LOG SHEETS - PLACARDS



AERO PRODUCTS RESEARCH CR COMPUTERS

CR computers are very popular with pleasure and professional pilots. They solve T/8/D and wind triangle problems for light aircraft as well as those which approach Mach 2 speeds. Corrections for errors of compressibility and temperature rise are computed with ease. The wind solution is displayed graphically using the small back-side discs. Each computer comes with handsome vinyl case and fully illustrated manual.

- CR-3** - 3-3/4" dia. shirt-pocket size (same as Jepp CR-5); vinyl P/N 13-03499
- CR-4** - 4-1/4" dia. (same as Jepp CR-2); vinyl. Standard model used by the military. P/N 13-03501
- CR-6** - 6" dia. Used by navigators for maximum readability (Same as Jepp CR-3); vinyl. P/N 13-03502

AERO PRODUCTS RESEARCH FLIGHT DESK



Folded size 8" x 9" Extends to 16" x 9" Anodized aluminum. Versatile space-saver lap desk locks in open position; folds in half for drop-in storage in your flight case. Heavy-duty clips hold charts and flight plans. Important VFR and IFR information always visible when open. Foam strips on back keep lap desk from slipping..... P/N13-03517

AERO PRODUCTS RESEARCH TIME/ SPEED/ DISTANCE COMPUTER



Time/Speed/Distance computers. "How-to-use" instructions printed right on the unit. Text printed in straight, easy-to-read lines; desired scales and windows located at a glance. Perfectly calibrated 2-color dials eliminate parallax errors. Fully illustrated instruction manual with each model. APR-303 3-3/4" dia. T/S/D computer with traffic pattern orientator; anodized alum. P/N 13-01133

THE ATIS WHEEL



Atis Wheel - Pilots and air crew now have the ability to reduce their pre-landing and pre-takeoff workload through the use of the amazing new Atis Wheel™.

The Atis Wheel™ is a mechanical device designed to help the airplane pilot in recording all ATIS information while presenting the data as a graphic depiction. The Atis Wheel™ is presented on a 5.5" x 8.5" rectangular durable format with seven individual 1.5" wheels positioned about the perimeter of the device along with two, 3" concentric wheels positioned in the center. Each wheel's topic coincides with

the sequential information reported in the airport terminal broadcast. Once the information is entered onto the Atis Wheel™, this displayed information is now available to the pilot for continued reference without the possibility of transcription error or forgetting the pertinent ATIS data. (It is recommended that the pilot listen to the pre-recorded ATIS information twice to verify that the correct information has been entered on the Atis Wheel™.) The Atis Wheel™ information coincides with the sequential layout of the Atis Wheel™, providing the pilot with all of the broadcast ATIS information data. Additionally offered on the Atis Wheel™ (though not offered in the ATIS broadcast) is an input on a wheel to display the airport Field Elevation, critical for instrument approaches. The Atis Wheel™ also displays clearly the visual relationship between the wind direction and the active runway, informing the pilot as to the pending cross wind takeoff and landing situation. The ATIS Wheel is 5-1/2" x 8-1/2" and fits nicely into a Jeppesen binder. This is a large format preferred by flight instructors and students. **Atis Wheel Pro** - Like the ATIS Wheel, but smaller (approximately 3.5" x 5.5") for the professional pilot to conveniently fit in a shirt pocket for quick and easy reference. Note, the ATIS Wheel Pro does not contain the "Wind Velocity", "Visibility" or RWY/Approach" wheels like its big brother ATIS Wheel Pro - Like the ATIS Wheel, but smaller (approximately 3.5" x 5.5") for the professional pilot to conveniently fit in a shirt pocket for quick and easy reference. Note, the ATIS Wheel Pro does not contain the "Wind Velocity", "Visibility" or RWY/Approach" wheels like its big brother ATIS wheel..... P/N 13-06643

ATIS wheel Pro P/N 13-05003

EZ ATIS REMINDER PILOT TOOL



The EZ ATIS Reminder makes it easy to communicate the ATIS identifier. No more fumbling through papers for the ATIS identifier - or worse yet, having to recall the prefix from memory! The 1-5/8" diameter knob with 1/2" pointer has a peel and stick adhesive tape on the back that can

be easily mounted on your instrument panel, knee board, or anywhere you need a quick ATIS recall. P/N 13-04920



AERO PRODUCTS RESEARCH T/S/D COMPUTER KEYCHAIN

1-1/2" diameter. Identical to the real thing, this traditional usable Time/Speed/Distance keychain has a beautiful compass star with flight plan on the back side. The computer keychain is calibrated meaning the ability to relate the key chain to the functions of the E6-B type Time/Speed/Distance computers. P/N 13-03505



AERO PRODUCTS RESEARCH CR COMPUTERS

Simplify VFR or IFR navigation with these handy logs which provide for listing of intersections, radials, frequencies, clearances and complete flight plan.

- EFL-100 Pad of 5-1/2" x 8-1/2" sheets; IFR Flight Logs P/N 13-03526
- EFL-200 Pad of 5-1/2" x 8-1/2" sheets; IFR Flight Logs P/N 13-03527
- EFL-100 Pad of 11 " x 8-1/2" sheets; organized detailed pre-planning and navigation on cross-country flights. Includes pre-flight checklists and sample instruction sheet. P/N 13-03528

AERO PRODUCTS RESEARCH PLACARDS



Now you can customize your cockpit with APR's easy-to-apply placards. Just cut out and press these stick-ons into place for that "factory-fresh" cockpit look. For all single and multi-engine aircraft systems, seaplanes, and gliders. Includes most-used legends (on, off, open, close, etc.), common amperage, voltage values, arrows, numbers and blanks. 8-1/2" x 10-1/2"; aircraft panel placard set; over 250 aluminum placards.

APR Instrument Panel Placard Set..... P/N 13-03522

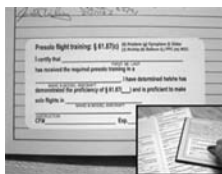
EXPERIMENTAL AIRCRAFT CERTIFICATION KIT



A new amateur-built aircraft certification kit created by the Experimental Aircraft Association (EAA) gives builders a simplified way to complete the required FAA paperwork for their new projects. The Amateur-Built Aircraft Certification Kit includes everything you need to register and certify a new experimental amateur-built aircraft in the United States. The 15-page, step-by-step guide walks you through the entire process from

getting an N-number to the aircraft inspection, and provides samples to help complete each required form. The kit includes all FAA forms, Experimental sticker (in black), data plate, and a convenient placard decal sheet. P/N 13-04244

SPORT PILOT PRE-PRINTED LOGBOOK ENDORSEMENTS



The Instructors Endorsement Pack contains 14 sheets of labels. Each sheet of labels contains 10 copies of a specific endorsement. Each 2" x 4" endorsement label is identified by title and FAR number, has the exact wording as required by the regulations, and has data-prompted blanks for the students' name, your name, CFI cert.#, Biennial Flight Reissue Certification 61.56(a).

| Description | Part No. | Price |
|---------------------------------|----------|-------|
| INSTRUCTOR ENDORSEMENT PK ENPAK | 09-01310 | . |
| PRE-SOLO AERONATICAL KNL 6187B | 09-01311 | . |
| PRE-SOLO FLIGHT TRAINING 6187C | 09-01312 | . |
| PRE-SOLO TRNG & 90 DAY RNL | 09-01313 | . |
| SOLO AT ANOTHER AIRPORT 6193B | 09-01314 | . |
| 1ST SOLO X-C 61.93(C)(1) 6193C | 09-01315 | . |
| SOLO X-C 61.93 (C)(2) 6193C2 | 09-01316 | . |
| REPEATED SOLO X-C <=50NM 6193B2 | 09-01317 | . |
| SOLO IN CLASS B,C & D 6194A | 09-01318 | . |
| SOLO TO/FROM CLASS B,C OR D | 09-01319 | . |
| TAKING KNOWLEDGE TEST 6135A | 09-01320 | . |
| PROFICIENCY CHECK 61321 | 09-01321 | . |
| PASSING FLIGHT TEST 61309 | 09-01322 | . |
| TAKING SPORT PILOT PRACT 61313 | 09-01323 | . |

PS

FLIGHT COMPUTERS



CX-2 PATHFINDER ELECTRONIC FLIGHT COMPUTER

ASA's new electronic flight computer is a price/performance breakthrough, resulting from advances in display and microcomputer technologies. Aviators can calculate true airspeed, ground speed, mach number, altitudes, fuel headings and courses, time/speed/distance, winds, headwind/crosswind components, gliding info and weight & balance.

P/N 13-01040.....



JEPPESEN CIRCULAR COMPUTERS

Dial up the answers to your navigation problems, including polar grid navigation, pressure pattern flying, crosswind components, and wind solutions. These computers automatically compensate for the temperature and compressibility factors found at high speeds. Tough laminated plastic, with carrying case. CR-3 (6" diam.) P/N 8434.....

case.

PN-1 NAVIGATION PLOTTER



Allows easy identification of WAC and Sectional chart scales. Calibrated in statute & nautical miles. (Size: 12.25" x 4")

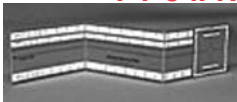
P/N 13-21724.....



PJ-1 ROTATING AZIMUTH

Measure the true course or to determine the magnetic course. Includes scales for sectional terminal area & WAC charts in statute & nautical miles. Size: 3.25 x 13"; 3-3/8" Dia. P/N 13-21726.....

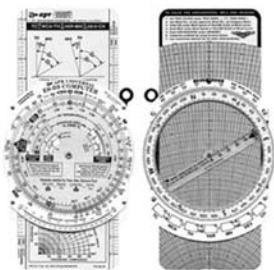
PV-5 IFR ENROUTE PLOTTER



Folding Navigational Plotter (Size: 3-3/16 x 8-1/2 inches) Pocket sized, fold out to full size (15"). The course line extends the entire length to measure true course from line of latitude or longitude. Scales for WAC, Sectional and TCA charts are calibrated in nautical miles, statute miles and kilometers. Folded Size: 2-3/4"x5-3/16" P/N 13-21722.....

and TCA charts are calibrated in nautical miles, statute miles and kilometers. Folded Size: 2-3/4"x5-3/16" P/N 13-21722.....

AERO PRODUCTS RESEARCH E6-B UNIVERSAL FLIGHT COMPUTERS



The very latest in air navigation computers include not only T/S/D and Dead Reckoning calculations, they now incorporate "Universal" features for world-wide use. Most E6-B computers include the following:

- **Improved Instructions** - The back side of the wind slide features scales for Sectional and WAC charts and new graphic instructions on how to work the computer.

- **Formula Boxes** - Designed to assist in solving problems. Enter the indicated details using a pen or pencil - then erase

- **Fully Graduated Scales**

Wind Slides with speed ring lines representing values of one. This eliminates the need for interpolating between "every other" speed ring and reduces possibility of error.

E6-B2U - Deluxe, top-of-the-line quality, 5" x 9-5/8", all aluminum construction. Includes: • "Universal conversions: feet to meters, pounds to kilograms, liters to US gallons, US gallons to IMP. gallons or fuel weight or oil weight. • Patented micro-set (aligns scales to perfect accuracy). • Flush dials to eliminate parallax; answers are read with absolute accuracy. • Scales with contrasting colors for easy computation. • "Universal" conversions color-coded for quick and easy use. • Heavy gage anodized aluminum for added rigidity and non-glare surface. • 2-color fully illustrated instruction manual plus supplement on Dead Reckoning, Wind Effect Theory and Calculations..... P/N 13-03492.....
cket-size deluxe, all anodized aluminum; high/low wind slide. P/N E6-B4.....

E6-B8 - Budget student computer, plastic body, plasticized wind slide..... P/N 13-03495.....

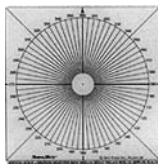
E6-B8P - Budget student computer, plastic body, plasticized wind slide; includes an 8" Navigation Plotter. P/N 13-03496.....



PILOT'S WIND VISUALIZER

The Wind Visualizer takes the guesswork out of crosswind takeoffs and landings. Simply put the Wind pointer on the wind direction, the Landing Pointer on the Runway heading, and "see" the wind in relation to your direction of flight. Then read your crosswind component from the table on the back. Simple, and fast to use. Durable non-warping 3.75" diameter plastic. Includes full instructions.

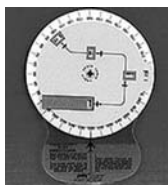
P/N 13-19520.....



RADIALMATE COMPASS ROSE

RadialMate™, a 3.5" clear 20 mil plastic compass rose allows you to instantly read a desired course by placing the product over any sectional, chart, or graphic. There are no reciprocals to calculate. RadialMate™ comes with a hole in the middle, allowing additional use as a string compass. It is conveniently sized to fit in your pocket. RadialMate™ also contains Safe Flight's vertical scale which measures mileage for WAC, SEC, TAC, NOS, JEPPE and ELA charts eliminating the need for that ruler you can never find.

P/N 13-08799.....



PDQ COMPUTER

The PDQ Computer is a quick visual presentation of the traffic pattern at your airport of arrival. Easy to operate with one hand, the PDQ shows you the 45° entry, downwind, base and final approach to the active runway. Durable plastic construction. Instructions included. P/N 8313.....

JEPPESEN STUDENT CSG COMPUTERS



This computer made of composite materials works just like an aluminum computer with all the same functions and features, but at a lower cost. Ideal for new students or as an extra to keep in your desk at home. Printed numbers are sharp, clear, and easy to read. Like all Jeppesen products, the quality is superior.

Plastic.....P/N 3866.....

Metal.....P/N 3867.....



EZ-VOR (A VOR TRAINING TOOL FOR STUDENT PILOTS)

Ever wish you could quickly determine where you are in relation to a VOR? I thought I was the only one! There are too many pilots that simply dial in a "TO" reading and fly to the VOR. Now you don't have to! EZ-VOR is designed to allow anyone, pilot or not, to quickly and easily determine the relative direction to the VOR.

Simply dial in your heading, your OBS setting and with a quick glance at your "TO - FROM" indicator and "Left & Right" needle deflection, your position relative to the VOR is amazingly apparent. Best of all, the directions are printed right on the back, no ten page manual to read! Small enough to fit on most kneeboards (5-1/2" in diameter) yet large enough to see clearly and accurately. P/N 13-04305.....



ASA E6B METAL FLIGHT COMPUTER

The best slide-rule-style flight computer on the market, with solid aluminum construction and easy-to-read lettering. ASA's E6-B features a wind component grid and comprehensive crosswind correction chart, and on the other side the slide computes time, speed, distance, altitude, true airspeed, and density altitude problems as well as conversions. Nautical and statute scales are included.

Standard..... P/N 13-00813.....

Mini..... P/N 13-02299.....



VOR FLASH CARDS

Designed to show any pilot how to look at a VOR receiver and read it at a glance. There's no time in the cockpit to spend slowly analyzing the CDI needle and To/From indicator! VOR-At-A-Glance flash cards will teach you: • The difference between VOR courses and VOR radials • What the VOR does not show you • The best way to think about the course deviation indicator • Inbound vs. outbound course indications • How to instantly know your position relative to the VOR • Tricks for reading interception courses right off the VOR • Pilots need to be able to look at a VOR and read the information off immediately. It's just like when you first learned how to read. There is a big difference between the ability to sound the words out and the ability to look at a work and just read it. Pilots need to be able to "read" the VOR! P/N 13-05773.....

PLOTTERS - COMPUTERS

PLOT-RITE ALL METAL NAVIGATION PLOTTER

The new Plot-Rite is an all metal navigational plotter for use with VFR sectional, terminal and WAC charts. The front has both sectional and terminal area scales and the rear has WAC and sectional scales. The top edge has the familiar 180° compass rose and the open center enables you to find longitude lines easily. Outside edges have full east and west routes, inside edges have north and south. Plot-Rite is all metal and will never break, warp, crack, shrink or distort in any way if left in the sun. Measures 2.5" x 12". Plot-Rite (Nautical Scale)

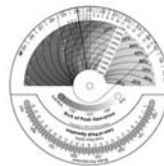
P/N 13-30300



THE AIRMILER TAPE MEASURE FOR CHARTS

An essential tool for every flight planning kit. A durable metal tape measure for measuring mileages on aeronautical charts. Sectional Scale (1:500,000) on one side, and WAC scale (1:1,000,000) on the other side. Kilometers, statute and nautical miles are shown on both sides.

P/N 8036



APS POWER WHEEL HORSEPOWER COMPUTER

Only device that we know of which can calculate your aircraft engine's power based on so many important factors. Using the RPM, manifold pressure, altitude and outside air temp, the pilot can use the Power wheel to calculate horsepower (as a % of max rated hp) very quickly and easily. Its calculations are based

on years of work done by the engine experts at Advanced Pilot Seminars and GAMI. Their calculations have proven their accuracy and worth to the pilot over years of use. Beyond the immediate answer to the question "How much power is my engine producing?" the information is useful in another way. Knowing how much power is being produced allows the pilot to operate the engine in a way that will reduce the stresses it sees, offering longer life and reduced operating expenses. Once the pilot uses the Power Wheel to find their % hp, they can take the next step to find the mixture setting that will be best for their engine. Built on the Red Box concept (and as seen in AOPA Pilot, Feb 2004, p 120) the mixture settings suggested by the computer will keep the engine's internal combustion pressures low, out of the Red Box region of operation.

PMC-NA-2625.....P/N 13-03131

PMC-NA-2700.....P/N 13-03132

PMC-NA-2600.....P/N 13-04213

PMC-NA-2600c.....P/N 13-04214

PMC-NA-2600.....P/N 13-04215

Visit www.aircraftspruce.com to specify aircraft and engine make & model and we will provide correct APS Computer.

APR PLOTTERS



Scales on white background for easy readability set on see-through "clear vision" vinyl. Statute and nautical scales are parallel, making conversion easy. One side scaled for WAC

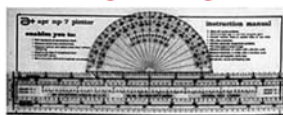
charts, one for Sectional charts. "How-to-Use" instructions printed on plotter. Includes illustrated practice problems.

| Description | Part No. | Price |
|---|----------|-------|
| 8" Plotter NP-7 Standard for WAC and Sectional Charts | 13-19908 | . |
| 13" Plotter NP-13 S standard for WAC and Sectional Charts | 13-19913 | . |
| 13" Plotter WSNP-13 WAC and Sectional Charts (Lexan) Lifetime Guarantee | 13-03509 | . |
| 13" Plotter NPR-13 Rotatable Azimuth WAC and Sectional Charts | 13-03511 | . |
| 13" Plotter WSNPR-13 Lifetime Guarantee Rotatable Azimuth WAC and Sectional Charts (Lexan) | 13-03512 | . |
| Universal IFR Plotter UIP-V (Same as Jeppesen PV-5) Jepp/NOS Charts Holding Pattern Entry (Vinyl) | 13-03514 | . |
| Description | Part No. | Price |
| Universal IFR Plotter RFC-1 Jepp/NOS Holding Pattern 3-1/2" x 8" | 13-03513 | . |
| 13" Plotter FAA-170 Military WAC and Sectional Charts | 13-03516 | . |

INTERNATIONAL NAVIGATION PLOTTERS

| Description | Part No. | Price |
|---|----------|-------|
| Plotter/Protractor CPP-5 Douglas International Combination Plotter/Protractor | 13-03506 | . |
| 13" ICAO Plotter IP-13 Fixed Azimuth, Nautical/Kilometer Scales | 13-03507 | . |
| 13" ICAO Plotter IPR-13 Rotatable Azimuth, Nautical/Kilometer Scales | 13-03508 | . |

PLOTTERS AND SLIDE COMPUTERS



These are specially-designed for easy use. The APR plotter has parallel statute and nautical scales, with one side scales for WAC charts and the other for sectional. Made of clean white heat-resistant hi-flex vinyl. Operating instructions are included. The slide computer is printed with speed ring lines representing values of one speed unit. Includes formula boxes added to the plate below the azimuth ring.

8" APR PlotterP/N 13-19908

13" APR PlotterP/N 13-19913

E6-B4 Aluminum.....P/N 13-03960

E6-B HIGH SPEED SLIDE



Picks up where the ASA-E6B metal flight computer leaves off, providing calculations for the high-speed realm of flight (in the range of 220-700 knots or mph). Pilots simply replace their current slide with this one, which then continues to use the circular computer from traditional E6-Bs. The slide also includes a compressibility correction chart, ICAO Standard Atmosphere reference table, a worldwide time conversion table, speed limits for the U.S., and the most frequently used weight and balance formulas; all of the pertinent formulas and information required for high-altitude, high-speed operations. Comes with easy-to-follow instructions.

E6-B High Speed Slide.....P/N 13-02301

E6-B Flight Computer.....P/N 13-00813

WHIZ WHEEL HOLDING PATTERN COMPUTER



For instrument pilots, entering a holding pattern can sometimes be a challenge. The Instrument Pilots Whiz Wheel can alleviate this challenge by presenting pilots with pictorial views of both right- and left-hand holding patterns, and entry arcs for direct, parallel, and teardrop holding pattern entries. Made of sturdy plastic, the Whiz Wheel works for VOR, NDB (non-directional beacon), and localized facilities. Intercept angles are at the pilot's fingertips, and procedure turn information can readily be obtained by following the "prompts" on the device and aligning these prompts with the Whiz Wheel's compass marking. Intersection holding patterns can be pictured and coordinated using both VOR radials and cardinal headings. P/N 13-30210.....

DIRECTIONAL GYRO HOLDING PATTERN PROMPTER DECAL



Install this decal upon the face of your directional gyro and instantly determine entry procedures for both left-hand and right-hand holding patterns. Also includes prompts for headings used in teardrop procedures and procedure turns. Totally transparent. Includes instructional text. P/N 13-30215.....

PILOT'S "TIME MACHINE"



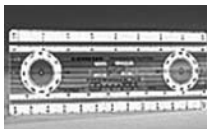
Convert the 12 hour clock to the twenty-four hour clock and to Universal Coordinated Time (UTC). Time zone chart is included. Fuel duration calculation can be determined with this new instrument. Use it to file accurate flight plans and to give position reports. P/N 13-30225.....

TRAFFIC PATTERN ORIENTER & SPEED COMPUTER



Graphically displays the headings required for standard or non-standard traffic patterns. Time, speed, distance computations, fuel consumption, true airspeed, mach and true altitude conversions. P/N 13-01133.....

JEPPESEN PV-5 IFR ENROUTE PLOTTER



Size 3-3/16" x 8-1/2"
P/N 13-21718.....

APR FCL-12 & 24 FLIGHT CHECKLIST HOLDER



Used by private, corporate, and military pilots. Adjustable lighting and viewing angle, color band isolates each item being checked. Mounts for right or left hand use. 84" parchment scroll lets you customize your specific checklists for review in flight. Designed to U.S. Military Pilots specification. 5" x 4" x 1-1/2" NSN 1680-00-489-1313

APR FCL-12 Flight Checklist Holder.....P/N 13-06714

APR FCL-24 Flight Checklist Holder.....P/N 13-06715

PS

AERO PRODUCTS RESEARCH PRODUCTS

APR PLOTTERS & KNEEBOARDS



PROTRACTOR PLOTTER PCP-202 T/S/D - APR has designed the first combination T/S/D pocket computer combined with rotatable plotter cursors. Align the airplane cursor along any appropriate meridian. PVC plastic discs, 3-3/4" dia. Plastic cursor 4-3/4"
P/N 13-06681.....



TRAFFIC PATTERN ORIENTATOR TPP-203 - The TTP-203 Traffic Pattern Orientator graphically displays all headings for left (standard) and right (non-standard) traffic patterns when the runway heading is aligned with the compass rose. Light signal "acknowledging" instructions are also shown. PVC Plastic discs, 3-3/4" dia. Cursor 4-1/4" P/N 13-06682.....

DENSITY ALTITUDE PERFORMANCE COMPUTER DAP-204 - The Density Altitude Performance computer shows the aircraft's rate of climb and minimum - required takeoff distance. PVC plastic discs. 3-3/4" dia. Important: Always consult your pilot's operating handbook as their computer does not supplement or replace the manufacturer's performance data. Not applicable to turbocharged aircraft. P/N 13-06683.....



T/S/D PROTRACTOR PLOTTER PCA-302 - APR has designed the first combination T/S/D pocket computer combined with rotatable plotter cursor. Align the airplane cursor with the true or magnetic course. Align the arrow cursor along any appropriate meridian. Anodized aluminum discs, 3-3/4" dia. Plastic cursor 4-3/4"
P/N 13-06684.....

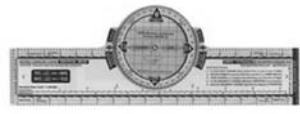
TRAFFIC PATTERN ORIENTATOR TPA-303 - The TPA-303 Traffic Pattern Orientator graphically displays all headings for left (standard) and right (non-standard) traffic patterns when the runway heading is aligned with the compass rose. Light signals and "acknowledging" instructions are also shown. Anodized aluminum discs, 3-3/4" dia. Cursor 4-1/4" P/N 13-06687.....

DENSITY ALTITUDE PERFORMANCE COMPUTER DAA-304 - The Density Altitude Performance computer shows the aircraft's rate of climb and minimum-required takeoff distance. Anodized aluminum discs. 3-3/4" dia. Important: Always consult your pilot's operating handbook as their computer does not supplement or replace the manufacturer's performance data. Not applicable to turbocharged aircraft.
P/N 13-06688.....

DNP-13 - 13" Deluxe Navigation Plotter with nautical and statute scales, sawtooth graduated color-coded scales for Sectional, WAC, and Terminal Charts. PVC plastic 13-5/16" x 4"
P/N 13-06696.....



DNP-8 - 8" Deluxe Pocket Navigation Plotter with sawtooth graduated color-coded, nautical, statute, and terminal area scales for Sectional, WAC, and Terminal Charts. PVC plastic 8-1/8" x 2-7/8"
P/N 11-07723.....



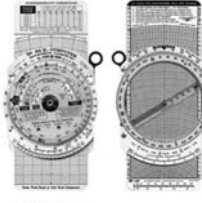
DNPR-13 - 13" Deluxe Plotter with Rotatable Azimuth Compass Rose, nautical & statute sawtooth graduated color-coded scales for Sectional, WAC, and Terminal Charts. PVC plastic 12-5/16" x 4-1/2"
P/N 11-07724.....



HPC-206 - Holding Pattern Computer. Pocket size. Visually displays entry headings from all directions for both standard and non-standard holding patterns. Shows holding speeds and inbound time to fix. Colorful segments for easy learning and use. 4" x 5" HOLDING PATTERN COMPUTER displays entry to standard and non-standard holding patterns, maximum indicated holding speeds, and time of inbound leg to fix. Complete instructions. "Best on the market" designed by Capt. Barry Schiff
P/N 11-07722.....



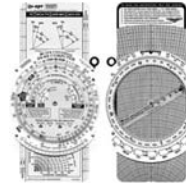
E6-B2 - H/S - E6-B2 D with High Speed Wind Slide of 100 to 800 kts or miles. Compressibility "F" factor scale shows the "F" correction factors for TAS. Gives calibrated airspeed from 200 to 550 knots at pressure altitudes of 10,000 to 50,000 feet. Crosswind grid shows method to calculate crosswind and headwind components. Anodized aluminum computer, 4-7/8" x 11-1/8"
P/N 13-06673.....



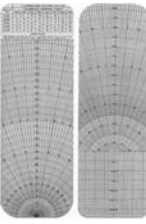
E6-B4 - H/S - Pocket size wind triangle & T/S/D deluxe anodized aluminum computer with low speed slide (10 to 270 kts or miles) and high speed slide (100 to 700 kts or miles) with compressibility "F" factors scale. Calculates all necessary flight planning and enroute navigation requirements. 3-1/4" x 6-3/8"
P/N 13-06674.....



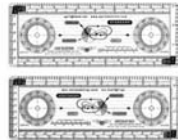
E6-B8D - Deluxe all plastic student Pilot Wind Triangle & T/S/D navigation computer. Features the new exclusive windspeed cursor which shows the speed and drift without pencil marks. Color-Coded sawtooth scales. Calculates all necessary flight planning & enroute navigation requirements. Easy to learn and use with the instructions printed on the computer. 4-1/2" x 8-3/4"
P/N 13-06675.....



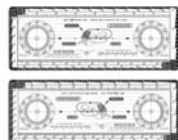
E6-B9 - Universal Standard Wind Triangle & T/S/D Large anodized aluminum computer. calculates all necessary flight planning & enroute navigation requirements. 4-7/8" x 9-5/8"
P/N 13-03497.....



LOW & HIGH SPEED SLIDES - Low & High Speed Slide for E6-B9 or E6-B2 models. Low wind speeds 10 to 270, high wind speeds 100 to 800 kts or miles, compressibility "F" factors scale shows the "F" correction factors for TAS. Gives calibrated airspeed from 200 to 550 knots at pressure altitudes of 10,000 to 50,000 feet. Crosswind grid shows method to calculate crosswind and headwind components. 3-7/8" x 11-1/8"
P/N 13-06680.....



JNP - Enroute IFR Radio Facility Chart Plotter for NACO and Jeppesen Radio Facility Charts, 12 high visibility scales, displays entry diagrams of standard and non-standard holding pattern, compass rose plotter, km to nm and nm to km conversion scales. PVC plastic 8-3/4" x 3-1/4"
P/N 13-06704.....



DJNP - Deluxe Enroute IFR Radio Facility Chart Plotter for NACO and Jeppesen Radio Facility Charts, 12 high visibility scales, displays entry diagrams of standard and non-standard holding pattern, compass rose plotter, km to nm and nm to km conversion scales. Lifetime guarantee, LEXAN® 8-3/4" x 3-1/4"
P/N 13-06706.....



P-IFR - Professional Pilot's Deluxe IFR Flight Kneeboard. Essential IFR flight information printed on top of kneeboard, large clip opens to 1" for approach book, adjustable strap. Board will manually rotate to best writing angle. Anodized aluminum, 9-1/2" x 6-3/8"
P/N 13-06712.....



P-VFR - Professional Pilot's Deluxe VFR Flight Kneeboard. Essential VFR flight information printed on top of kneeboard, large clip opens to 1" for approach book, adjustable strap. Board will manually rotate to best writing angle. Anodized aluminum, 9-1/2" x 6-3/8"
P/N 13-06711.....

PS

FLIGHT ACCESSORIES - PLOTTERS

ON COURSE AVIATION PRODUCTS CHART MARKS



Customize your charts with these highly visible, self sticking, removable accents, outlines, & notes. Add a compass rose to any airport or airway intersection, outline VOR information, accent airport or communication information. 20x20mm see through notes accept pencil or pen for your special information. All are easily removable after your flight.

| | | |
|--------------------------------|-------------------|------|
| Note (11/package)..... | P/N 13-30110..... | /ea. |
| Compass Rose (11/package)..... | P/N 13-30111..... | /ea. |
| Outlines (17/package)..... | P/N 13-30112..... | /ea. |
| Accents (16/package)..... | P/N 13-30113..... | /ea. |

COURSE LINE

End the confusion of multiple pen or pencil lines on your sectional chart. This transparent tape, brightly printed in a highly visible color, is graduated in nautical miles with distinctive 5 & 10 mile "Tick" marks. No need to pick up a plotter or scale to determine distance along your course line. Removable after flight or repositionable in flight for diversion to an alternate airport. 1/2"x 2050 nautical miles (sectional scale) w/ dispenser..... P/N 13-30114...../ea.

MAGNIFYING SCALE

At last, an accurate nautical mile scale with a built in magnifying lens to clearly enlarge the fine print on sectional charts. Made of heavy duty, extra strong, cast acrylic, printed in two colors with easy to read sectional scale graduations (1:500,000). Available in 2 sizes, 100 NM (16") for flight planning, 60 NM (10") for cockpit use. Order both.
60 NM.....P/N 13-30120.....
100 NM.....P/N 13-30121.....

JEPPESEN VOR/ADF MAGNETIC TRAINER

A great tool for demonstrating VOR and ADF navigation, the Magnetic Trainer includes an Instrument Board and a Wind Correction and Position Board, as well as an Accessory Kit with movable instrument indicators, rotating compass cards, a TO/FROM indicator, RMI designator sign, wind direction indicators, and miniature airplanes. This replacement accessory kit for the VOR/ADF Magnetic Trainer includes movable instrument indicators, rotating compass cards, a TO/FROM Indicator, RMI designator sign, wind direction indicators, and miniature airplanes in various colors. P/N 13-05789.....

UNBREAKABLE SUPER PLOTTER

Here's a special flight planning tool we really like. A colorful little plotter with a rotating azimuth that makes it much easier to plot a course line. Place the compass rose over your departure point and rotate the straight edge towards destination. Presto.. an instant readout of your course! Reads distance in statute miles or nautical miles for both sectional and WAC charts. Made of bullet proof Lexan. Won't crack, break, or warp in extreme heat or cold.
P/N 13-03473.....

FLIGHT FORMS

Pilot designed for pilot use - convenient kneeboard size (5.5"x8.5"). Color coded for instant recognition. Easy to read! Easy to use! Every flight-form comes with an FAA Flight Plan form. Each COMM-AID form also includes a three leg En-Route NAV-Log.

VFR CROSS COUNTRY FLIGHT PLANNING FORM - With step-by-step instructions. Folds to kneeboard size (5.5"x8.5") yet leaves all En-Route and destination information exposed for orderly display of in-flight information. Includes sections for weight and balance, fuel management com frequencies & airport diagrams. P/N 13-30115.....

EN-ROUTE NAV-LOG - For the more advanced VFR pilot, a nine leg En-Route NAV-log provides ample space for navigation data, time (estimated & actual) plus communication and destination sections. (25/pad). P/N 13-30119.....

WX-BRIEF FORMS -WX-BRIEF - forms take the mystery out of talking to briefers or controllers. Logical arrangement in correct briefier and controller sequence eliminates confusion. The WX-Brief form is arranged in briefing format to simplify note taking and increase understanding. Simply fill in the blanks as the FSS specialist gives a standard briefing. (25/pad)..... P/N 13-30116.....

IN-BOUND OR OUT-BOUND COMM-AIDS - Inbound or out-bound Comm-Aids organize your communications before takeoff. Know what to say and when to say it sections for ATIS, Clearance, Ground, Tower, Departure, & Approach. For use in class B, C, & D airspace. (25/pad)

| | |
|----------------|-------------------|
| In-Bound..... | P/N 13-30117..... |
| Out-Bound..... | P/N 13-30118..... |

HOLDUP HOLDING SITUATION INDICATOR



The Holdup is so easy to use that directions are provided on the device only because rust can develop on a pilot's holding techniques, especially for issued, nonpublished holds. They remind you how to set up intersection holds and station holds, if you forget. (There's also a built-in way to set up station holds in a single step.) Then, in both cases, you just find your heading to the fix on the compass dial, and read the entry in the zone next to it. At a typical intersection, there are 8 (eight) possible holds that can be assigned. "Hold south of OR-VIL intersection on the 340° radial, left turns?" You won't believe how easy this is with The Holdup until you try it. P/N 13-03365.....

HOLDING PATTERN AID



How would you like to increase the chances of passing your instrument rating? Did you know that the number one area that instrument applicants fail their check ride is Holding Patterns? It is not the hold itself, but the ENTRY procedure! Help yourself pass your test with this simple to use static clink overlay. Simply place the arrow on the radial that you are instructed to hold on and the holding pattern is overlaid on top of your heading indicator. The HPA helps you visualize the pattern quickly and easily while increasing necessary situational awareness. No need to shuffle in your bag for a piece of cardboard or draw a picture on your knee board, the HPA will stick to your aircraft window and easily peels off when you need it. One package includes four HPA's, two left hand holding patterns and two right hand holding patterns. Developed by a Certified Instrument Flight Instructor with the intent to decrease the failure rate of instrument students and increase the level of safety that pilots are entrusted with. Get some First Aid for your holding patterns, get the Holding Pattern Aid. Measures 3" in diameter. White lines and text on a clear background.
P/N 13-04166.....

FLITE-TAPE



NAVPRO specifically designed the Flite-Tape for aeronautical use. It is available for either Sectional (1:500,000) or WAC (1:1,000,000) charts and is graduated in nautical miles. The Sectional Flite-Tape measures up to 500 n.m. and the WAC Flite-Tape measures up to 1,000 n.m. This practical product offers you many advantages, for instance: • Measure the distance between any two points on a typical chart with out "stepping off" (a typical Sectional Chart measures 375 n.m., corner to corner). • Establishes an accurate straight line course between distance points in an instant. • Flexible tape is ideal for cockpit use and on pilots lap. The Flite-Tape is pocket size (2" x 1-3/4" x 1/2"). Steel tape is housed in a high impact plastic case. The locking mechanism means you extend only as much of the Flite-Tape you need. The Flite-Tape's unique end-piece is easy to position over a check point. Flite-Tape is a quality product and comes in a vinyl storage pouch.
Flite-Tape Sectional Charts.....P/N 13-01038.....\$8.50
Flite-Tape WAC Charts.....P/N 13-06001.....\$7.95

FLITE-TRAC



Flite-Trac is specifically designed for aeronautical use. It simplifies measuring headings from aeronautical charts by reading naturally. Flite-Trac uses a complete 360° compass rose, and avoids any confusion in determining heading. Its square shape, aided by parallel grid lines, aligns easily with the lines of latitude and longitude on the chart. This logical protractor offers you several advantages in the cockpit: • It is less awkward than a typical plotter, yet shows the complete compass rose on a larger scale. • Measures short distances in flight. Its grid is to a 5 n.m. scale on a Sectional chart and has a short distance scale for quick in cockpit use. • The magnetic variation formula is printed directly on a Flite-Trac to give you confidence in calculating a magnetic heading. Flite-Trac avoids the necessity to slip a plotter to a map grid line or the need to use parallel rules. Flite-Trac is a quality product made of lexan in the USA. It will not warp in a hot aircraft.
P/N 13-01039..... ea



KNEEBOARDS

VFR/IFR NAVBOARD & CHARTSAVER



Hold charts between two clear plexiglass surfaces for in-flight reference. Visible from both sides, so you can use two charts. One facing in each direction. Mark plexiglass with grease pencil without defacing chart. Pilot course lines, destinations, checkpoints, headings, vectors, etc., directory on surface. Revisions can be made during flight, easy to erase after flight. Charts stay fresh and reusable many times. Measures 12" x 10".

P/N 8154

SOFT-G PLUS KNEEBOARD



This kneeboard is originally designed for high performance fighter & attack aircraft. Standard features include: reversible clip board which allows pocket and document loops to be reversed right or left side, 1-1/2" wide adjustable plastic strap, clear plastic information pocket, removable document loops, 4 elastic pen/pencil slots, side release buckle, durable wire clip, and NEG-G strap.

P/N 13-12655

The performance package includes: information cards, clear document protectors, removable document protectors, and releasable cable ties (holds document protectors securely to kneeboard).

P/N 13-12656

TRIFOLD KNEEBOARD



The standard features include: right and left light pockets that double as pen/pencil pockets, 1.5" wide adjustable plastic strap, 4 clear plastic information pocket, right & left document loops, side release buckle, durable wire clip, and padded backing

P/N 13-12660

The performance package includes: information cards, clear document protectors, flex light with fixed or adjustable beam, and releasable cable ties (holds document protectors securely to kneeboard) optional.

P/N 13-12661

9-G PLUS KNEEBOARD



This kneeboard is originally designed for high performance fighter and attack aircraft. The standard features include: right and left light pockets that double as pen/pencil pockets, 1.5" wide adjustable plastic strap, 3 clear plastic information pocket, right and left removable document loops, side release buckle, easy access pocket, durable wire clip, and padded backing.

P/N 13-12650

The performance package includes: information cards, clear document protectors, removable document protectors, & releasable cable ties (holds document protectors securely to kneeboard).

P/N 13-12651

MINI TRIFOLD KNEEBOARD



This mini trifold kneeboard measures 8" x 16.5". The standard features include: reversible clip board which allows pocket and document loops to be reversed right or left side, 1-1/2" wide adjustable plastic strap, clear plastic information pocket, removable document loops, 4 elastic pen/pencil slots, side release buckle, durable wire clip, and NEG-G strap.

P/N 13-12665

The performance package includes: information cards, clear document protectors, removable document protectors, and releasable cable ties (holds document protectors securely to kneeboard).

P/N 13-12666

JEPPESEN IFR THREE-RING TRIFOLD



The Jeppesen three ring trifold is great for holding approach charts and features three approach chart pockets, collapsible rings, elastic pen / pencil / penlight holders, and valuable IFR flight information the clip board. Includes free U.S. Low altitude planning chart. Size: 10"x 20" open.

Kneeboard/Clipboard

IFR Clipboard only with leg strap.....P/N 13-06956-1

VFR KNEEBOARD



This kneeboard places information at your fingertips. It holds charts, flight computers and much more. An elastic leg strap holds this unit comfortably in place with a velcro closure. The metal clipboard (also available separately) contains valuable information for your VFR flight needs. An additional strap is included allowing you to use your clip board independent of the kneeboard. You are really getting two products in one.

Kneeboard/Clipboard

P/N 13-06955

IFR Clipboard only with leg strap.....P/N 13-06955-1

AERO PRODUCTS RESEARCH KNEEBOARDS



MK-2A/C.....P/N 13-03521

5-3/4" X 10" X 2-1/2" Contoured base, non-slip kneeboard. 3" positive ext. clip for approach plates, etc. Pencil holder, comfortable leg strap, sturdy, lightweight. Black, non-glare aluminum.

MK-9.....P/N 13-03520

6" x 8-3/4" VFR kneeboard lists flight plan sequence, tower light signals, time zones, visibility and distance-from-cloud requirements plus much more. Anodized aluminum. Includes flight logs.

0-100.....P/N 13-03518

6" x 8-3/4" IFR kneeboard lists flight plan sequence, alternate flight planning and distance-from-cloud requirements, IFR required reports, plus much more. Anodized aluminum. Includes flight logs.

0-150.....P/N 13-03519

NAV-DATA VFR KNEEBOARD



NAV-DATA Featherweight Kneeboard. This weighs approximately 10 ounces. This board is similar to a clipboard but is much sturdier than a standard clipboard and much less cumbersome in the cockpit (dimensions are 7"x10"). It includes A VFR reminder table that includes conversions, light gun signals, flight plan info, etc.

Both boards are outfitted with our comfortable form-fitting knee saddle and velcro strap assembly to ensure the board stays securely in place.

P/N 13-06086

NAV-DATA IFR KNEEBOARD



Once you own a Nav-Data IFR kneeboard, you can customize it's contents with your personalized data by simply filling in the blank 5 1/2 x 8 1/2 forms which include:

- * aircraft checklist
- * local area NAV and Com frequencies
- * navigation logs
- * flight plan forms
- * clearance copying pad

By placing these pre-recorded forms, approach plates, charts, etc., into our 3-ring transparent vinyl pocket page system (8 vinyl pockets included), you will have quick access to all of your important data. Note the retractable slider tab supporting the cover (Chart board) when open.

P/N 13-06085

PS

KNEEBOARDS

FLIGHT DESK TRI-FOLD KNEEBOARD



Our Flight Desk Kneeboard greatly improves cockpit organization of charts and accessories. Unlike some other kneeboards with limited utility, our Flight Desk Kneeboard will hold sectional charts, a large E6B type computer, and has 2 elastic loops on either side of the clipboard to hold a goose-neck type flashlight. If the middle loop is not used for a computer, it can be used to hold a handheld transceiver. Made of durable black cordura. Size: 19.25"x9.5" unfolded. Clipboard size: 6" x 9.5". P/N 13-03474

NAV-DATA KNEEBOARD



The Nav-Data Kneeboard is the most well-organized kneeboard you'll ever own. It's like having a flight desk strapped to your leg. The Nav-Data Kneeboard is a unique cockpit tool which combines all the function and features of a lap board, clipboard and VFR/IFR chart holder giving it a solid reputation as the 'CHAIRMAN OF BOARDS'. The Nav-Data Kneeboard was designed, hand-made and then flight tested by experienced pilots for more than ten years. It is

manufactured using durable high-tech composite laminate and anodized aircraft grade aluminum P/N 13-06005

ORGA-KNEE-ZER™ KNEEBOARDS



ORGA-KNEE-ZER™ Kneeboards are extremely versatile, organizer/kneeboards providing a standard 7-ring binder on a very stable platform with built-in pencil sharpener, combo maglite/ pencil holder and many other unique features. Compact stowage, rugged materials and powder coat finish, add even more to their rich feature set. Use for VFR or IFR flight, using NOS or Jepp charts and see how their versatility can adapt to your demanding and varied needs as pilot. The patented design of Model A1-MC allows you to flip through your charts, checklists or other reference materials, with unobstructed access to the writing surface for jotting ATC instructions or holding flight plans. It's excellent for most general aviation aircraft and is very popular with Cessna and Piper pilots. It's 9" long x 8" wide and up to 16" wide when fully

open. It can also be used as a simple clipboard for preflight checks when closed (includes 3 chart pockets). P/N 13-03326

THE HEADS UP FLIGHT DESK



The Heads Up Flight Desk was developed by a certified flight instructor and honors student at Embry-Riddle Aeronautical University. While studying human factors in aviation safety, he noted that on every airline flight deck you would find a yoke mounted chart desk. The reason for the board being mounted there is to keep important information in the normal field of view for the pilot. Having to look down

and away from this normal field of view is recognized as being a hazard to flight, because it takes the pilot's eyes away from scanning either the instruments or outside the aircraft for conflicting traffic. This innovative product is a great safety enhancer. Convenient for keeping important documents in view, such as instrument approach plates, airport diagrams and flight logs. As an additional safety enhancer, we imprinted important safety briefing items on the surface of the desk. Included are a passenger briefing, crew briefing, engine failure during takeoff briefing, engine failure in flight memory items, and a pre-landing checklist. FEATURES: · Aircraft quality aluminum clipboard for durability · Low-profile spring steel clip holds documents in place · Velcro® included for attachment to yoke · Heavy-duty steel spacer and spring steel clamp · Perfect size for approach plates and airport diagrams · Easy fit in flight bags due to low profile hardware · Yoke tube clip fits 3/4 to 1-1/8" tubes (other sizes available) · Guaranteed against breakage for the life of the product* Lighted Version: · LED light illuminates entire surface for ease of reading at night · Flex neck on light easily stores out of the way for day use. · LED lasts 100,000 hours / included batteries last 100 hours. Standard.....P/N 13-04216

Lighted.....P/N 13-04217

SINGLE PANEL FL-100 KNEEBOARD



The Aeroboard FL100 has a large pocket behind the clipboard to keep these items handy. The detachable clipboard can be removed and placed inside the pocket creating a platform for a GPS. 7.5" x 11". 1 large chart pocket behind the clipboard. Detachable 6"x9" aluminum clipboard. 1-1/2" wide nylon/elastic leg strap with Velcro® fastener.

FL100 Black..... P/N 13-03703

FL100 Navy P/N 13-03704

BI-FOLD FL-200 KNEEBOARD



Aeroboard FL200 has many outstanding features which makes it one of the most useful organizational tools a pilot can have.

The FL200 has a bifold design with 3-ring center binder, available in both Right & Left-hand, 10 clear page protectors (great for organizing checklists, emergency procedures, reminders, etc.), and 2 handy large storage pockets (for charts & other items of similar size). The Aeroboard FL200 has what you've been looking for. 15" x 11" open, 7.5" x 11" closed. Features: · Bifold design available in both right- & left-hand models · 3-ring binder (includes (10) 8-1/2" x 5-1/2" clear page protectors) · 2 large chart pockets · 1 small computer pocket · Detachable 6" x 9" aluminum clipboard · 1-1/2" wide nylon/elastic straps (holds charts open) · 2 elastic pen/pencil holders SureCheck FlightPad™ included · Cover made of durable Cordura®

FL200R (RIGHT) Black..... P/N 13-03698

FL200L (LEFT) Black..... P/N 13-03701

FL200R (RIGHT) Navy P/N 13-03699

FL200L (LEFT) NAVY..... P/N 13-03702

TRI-FOLD FL-300 KNEEBOARD



With its unique convertible tri-fold design and handy 3 large storage pockets (for charts, flight computers, Aerolight, etc.) the Aeroboard FL300 has what you've been looking for. Includes a 3-ring center binder, complete with 10 clear page protectors (great for organizing checklists, emergency procedures, etc.) 20" x 11" open, 7.5" x 11" closed. Detachable third

section for more expanded in-flight use. It includes additional pockets for pen/pencil, electronic flight computer, flashlight, and more! Features: · Unique design allows the versatility of converting between a bi-fold and tri-fold · 3-ring binder (includes (10) 8-1/2" x 5-1/2" clear page protectors) · 3 large chart pockets · 2 pen/pencil pockets · 1 flashlight pocket · Detachable 6" x 9" aluminum clipboard · 1-1/2" wide nylon/elastic leg strap with Velcro® fastener · 2 elastic pen/pencil holders · SureCheck FlightPad™ included · Cover made of durable Cordura®.

FL300 BLACK..... 13-03696

NELSON KNEEBOARDS



MILITARY TRI-FOLD · Size: 19.5"x11.5" (open), 11.5"x7" (closed) · Holds sm E6-B, stopwatch, pencils · Supplied w/pad of 50 flight logs · Aluminum board holds approach plates · Available in black, blue, red, gray.

Black P/N 13-02885

Blue..... P/N 13-06905

Gray P/N 13-06910

Red..... P/N 13-02884

Olive..... P/N 13-02903

Replacement Flight Logs..... P/N 13-02888

ARMBORD



The ArmBoard provides agronomical, space saving writing surface as natural to wear as a wrist watch. Regardless of how large or small the cockpit is, the ArmBoard truly frees up much needed space.

The product was also tested by CFIs and proved extremely useful in taking notes during flight lessons and jotting down student performance comments for follow up during ground school. A writing pad is included with a flight planner version sold separately along with various flight reference cards to be used on the inside flap of the ArmBoard. P/N 13-06021

ACCESSORIES

Set of 3 blank pads for the armboard P/N 13-06025

Set of 3 mixed pads (Blank, Flight Planner & Ruled) for the armboard. P/N 13-06024



FLYBOYS GEAR FOR PILOTS



FLYBOYS PUBS BAG

Ideal for keeping things "co-located" while you're flying and mission planning. Integrates perfectly with FlyBoys kneeboards. Top opening flap gives access to the main pockets. Additional smaller external pockets are located in the front, rear as well. Handy for smaller items or for sliding enroute charts and maps for quick access. Top, front and back are secured with sturdy Velcro™. Pocket on one side for a water bottle or sunglass case. Slots on the opposite side for 2 pens or pencils. The most popular choice of most fighter and trainer pilots no matter what the airframe. Also, an excellent option for civilians looking for a no frills - priced right bag. Measures 8 1/2" x 11" x 1" empty. Fully loaded it will expand out to 8 1/2" wide!

- Blue FB1020.....P/N 13-05565
- Black FB1020.....P/N 13-05566
- Green FB1020.....P/N 13-05567

FLYBOYS MISSION PUBS - BAG

Longer and wider than the FB1020 Regular PubsBag, but not as tall. Fits everything you will ever need for your mission plus some! Three main compartments comprise this model. Two large compartments and the third is divided in the middle. No external pockets on this model, however the internal capacity is awesome. Favored by F-15E, B-1, B-2, and C-130 aircrew. It's also popular in the USAF/USN pilot training environment. Outside dimensions are 9" x 11" x 1" empty, and fully loaded it will expand to 6 1/2" wide.

- BlackP/N 13-05622
- BlueP/N 13-05623
- GreenP/N 13-05624

FLYBOYS CREW BAG

Slightly smaller than Fly Boys Large Crew Bag but with all of the features you will need to get the mission accomplished, and lots of value. Double stitching and heavy duty zippers will make this bag last a long time. Removeable shoulder strap with a rubberized pad which keeps this bag from slipping off of military flight jackets. Exterior Dimensions: 17" x 11" x 11" Interior Compartment Dimensions: 13" x 7" x 9"

FLYBOYS LARGE CREW BAG

Lightweight but heavy duty bag at a fair price. Double stitching and reinforced seams are standard. Silent rubber zipper pulls. The awesome nylon zippers are self repairing and provide a significant level of water resistance. The removeable shoulder strap has a pebbled shoulder pad unique only to Fly Boys. This keeps the bag from slipping off of slick nylon shell flight jackets. All new gray interior which provides high visibility for finding items inside the bag in low light conditions. Sturdy the moveable/ removeable interior dividers are built. New retention sleeve for flashlights has been incorporated. Super tough PVC armoring incorporated into the bottom of the bag. Virtually waterproof along the bottom and provides additional protection and structure to the unit. Exterior Dimensions: 22" x 14" x 12" Main Compartment Dimensions: 16" x 11" x 11"

FLYBOYS HELMET BAG

420 Denier Cordura Nylon with 1/2" cloth poly-fill to cushion your helmet. Heavy duty nylon zipper - resists snags. Two interior pockets WITH VELCRO CLOSURE that fit your DTC, VTR tapes, sunglasses or water bottle without having them fall into the main compartment when you put it down! This super tight knit nylon shell is extremely water resistant and provides superior protection for YOUR expensive equipment - and the interior lining is extremely soft. It will not scratch your visor. Oversized from standard issue versions, it is superior for helmets with with NVG or HMS mounts! Two NEW pockets for smaller items. Comes with an exact color matched, adjustable shoulder strap fitted with a gripping contouring rubber shoulder pad for hands off carrying if necessary - It won't slip off of your shoulder. Inside Dimensions (FLAT): 19 1/2" Wide 20" Tall.

- Blue.....P/N 13-05571
- Black.....P/N 13-05572
- Green.....P/N 13-05573

FLYBOYS IFR/VFR KNEEBOARD

Features seven eyelets for securing checklists, plastic checklist pages or your in-flight guide - (every base has different spacing. Includes the new flexible plastic clipboard (FB1060). Eyelets also correspond to JEPPESEN approach plates and chart protectors!!

- Blue..... P/N 13-05568
- Black..... P/N 13-05569
- Green..... P/N 13-05570



FLYBOYS CHECKLIST PAGES

Heavy duty plastic FlightCrew checklist pages. Sturdy construction equals long life. Easy to use, with thickness that resists getting brittle or tearing in cold environments. Pages are top loading and are excellent for protecting your local approaches or condensed aircraft checklist.

- Sheet Size: 8" X 5" PN 13-05627
- Bulk back (25 Pk.) PN 13-05629



OVERSIZED CHECKLIST PAGES

These are great if you are ready to start putting originals in the pages instead of shrunken copies! As you can see, a full size Jeppesen chart slides right in! Now your mission data cards fit, your target photos can get more detail in them, and your attack cards slide right in without making a trip to the copier to shrink or the paper cutter to trim! These are the same construction as the regular, just bigger. Great in extreme temperatures and long lasting. Spacing on the holes matches up with the FlyBoys KneeBoard with Eyelets and Jeppesen charts. Size is 5 1/2" X 8 1/2" - really makes a difference.

- Sheet Size: 8-1/2" X 5-1/2" PN 13-05628

EXTRA TALL PAGES FOR BIG CHECKLIST



Heavy duty plastic FlightCrew checklist pages. Sturdy construction leads to a long life. Easy to use but heavy enough to not get brittle or tear in extremely cold environments. Pages are top loading and are excellent for protecting your local approaches or condensed aircraft checklist. USABLE interior dimensions: 5"x11", overall width including checklist ring holes 5 7/8"

- Sheet Size: 5" X 11" PN 13-05630
- Bulk Pack (25 Pk.) PN 13-05631



FLYBOYS HARD PLASTIC COVER SET FOR EXTRA PAGES

The new Cover Set for the FB2203 pages are great. They are perfect for protection of the pages as well as providing structure for these tall pages. Without these covers, they tend to sag due to their height. Buy as many pages as you need, as many cover sets as you need. Sheet Size: 5" X 11"

- PN 13-05632



OVER SIZED FLIP CHART PAGES

Over sized top loading pages with three ring holes in the top for those checklists and situations that flow better than the normal "book format." Dimensions: 9.25" x 6".

- Sheet Size: 8" X 5" PN 13-05633
- Bulk Pack (25 Pk.) PN 13-05634



FLYBOYS CHECKLIST RINGS

Durable. Unbreakable. Multi-Purpose. Safe. Opaque nylon ring to hold your checklists and in-flight guides. Or use them for outdoor use where metal rings would rust or wear out. Patented ball-lock design to prevent FOD out on the flight line. The nylon ring is very low resistance as well. Once they are closed, they stay closed. When closed, they are a 2.5" diameter ring. Opened, they stretch to 5.25". For most applications 4 rings is plenty for keeping your checklists or inflight guides secure. Pack includes 10pieces. Color is clear/opaque. P/N 13-05621

FLYBOYS PILOT LOGBOOK

Represents a comprehensive look at your military flying career. Special considerations were made for this book that no other logbook will provide. If you are serious about keeping track of your flight time, and operate Army or USAF rotary aircraft - this is the book you need with no question. Record your own flying history of missions, upgrades, checkrides and awards right in this beautiful and durable logbook. This book will hold at least 10 years worth of flight history. Dimensions: 9" tall x 7 7/8" wide x 1" thick

- Airforce Pilots Fly Logbook..... P/N 13-05625
- Army Pilots fly Logbook..... P/N 13-06410



FLYBOYS REMOVE BEFORE FLIGHT KEY CHAIN

This nylon strap streamer with the REMOVE BEFORE FLIGHT rubber patch is an instant reminder of the real warning flags that hang off of airplanes on the flight line. They're supposed to be visible and easy to find during the walk-around inspection. Well, now you won't have to "walk around" your house or fish through your gym bag trying to find it!

- P/N 13-05626

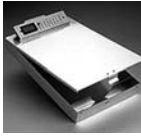
KNEEBOARDS - HOODS



PILOTS LAP DESK

This top opening aluminum lap desk provides a solid smooth writing surface with a 3/8" bottom storage compartment for charts, computers, checklists, pens, etc. Can be used vertically or horizontally designed forms and is great for left or right handed use. Size: 9.5"x12" P/N 13-00808

FLY INFORMED KNEEBOARD/CALCULATOR



This bottom opening pilot clipboard measures 8-1/2" x 12" and features a bottom storage compartment (1-1.25" deep) for charts, computers, checklists, pens, etc. Great for vertical or horizontal forms. Heavy duty aluminum construction with solid smooth writing surface. Furnished with battery powered calculator clip for in-flight calculations. Flexible light available separately. P/N 13-00809

Clipboard/Calculator..... P/N 13-00809

Detachable Light (clear)..... P/N 13-00811

Detachable Light (red)..... P/N 13-00812

D & C AERO'S ADJUSTABLE IFR YOKE DESK (ID25, ID18, VF25)

Just fit on your control column and adjust the height for perfect placement. Now you can clip and hold your approach plates, enroute charts and sectionals right in front of you. Also, you can attach a timer to it with Velcro®. Made from aircraft quality anodized aluminum. Includes an important IFR placard with radio communications failure procedure, position report items, radar / non-radar reports and more. ID18 - Clip size .75" x 1.13" ID25 - Clip size 1" x 1.5" ID18P/N 13-04385

ID25P/N 13-04386

VF-25P/N 13-04387



ASA IFR TRI-FOLD KNEEBOARD

Strong aluminum tooled clipboard silkscreened with important IFR information fits into black 3-panel jacket. Has room for charts, books, flight computers, etc. P/N 13-05840

ASA VFR TRI-FOLD KNEEBOARD

This kneeboard uses the VFR Kneeboard in a three-panel jacket. The left panel has ample room for small books, papers and oddly-shaped items. The center panel holds the kneeboard under clear plastic with a pen/pencil holder and buttonholes on either side.. The right-hand panel contains a clear pocket for easy map viewing, and the elastic leg band's Velcro closures fit any leg size comfortably. Black nylon with embroidered silver wings logo. Kneeboard is 6-1/2" wide x 9-1/2" high. P/N 13-02712

BLOCKALLS TRAINING GLASSES



Designed by pilots for pilots. Blockalls™ resolve problems with existing view limiting devices. Weighing in at just under 1oz, it's easy to forget you are wearing them. Engineered to easily penetrate the seal of your headset eliminating the hassle of having to remove it first and

can be worn for extended periods of time without discomfort, thanks to the soft rubber nose piece and streamlined temple tips. Tailored off center viewing also keeps more of your time inside the flight deck rather than outside. Recommended by AOPA/ Flight Training.

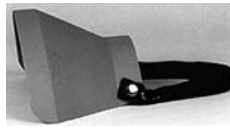
| Color | Part Number | Price |
|----------|-------------|-------|
| Black | 13-06240 | . |
| Aluminum | 13-06241 | . |
| Pink | 13-06242 | . |

OLD FOGGIES™ IFR TRAINING GLASSES



IFR Glasses' Old Foggies™ brand view limiting device was developed in order to balance the training value of a view limiting device without further limiting the pilot from being able to read his/her charts. Old Foggies™blend of precision fogging and custom powered corrective lenses allows for the precise amount of the instrument panel viewing without any view of the horizon. Old Foggies™ are available in customizable powers with no need for a prescription. Available in Clear and Light Mirrored Tint (a reflective coating that eliminates glare without further limiting visibility). Available Powers: 1.5, 2.0, 2.5

| Description | Part No. | Price |
|--------------------|----------|-------|
| Clear Lens Fog 1.0 | 13-05004 | . |
| Clear Lens Fog 1.5 | 13-05005 | . |
| Clear Lens Fog 2.0 | 13-05006 | . |
| Clear Lens Fog 2.5 | 13-05007 | . |
| Clear Lens Fog 3.0 | 13-05008 | . |
| Tint Lens MFog 1.5 | 13-05009 | . |
| Tint Lens MFog 2.0 | 13-05010 | . |
| Tint Lens MFog 2.5 | 13-05011 | . |
| Tint Lens SFog 1.5 | 13-05012 | . |
| Tint Lens SFog 2.0 | 13-05013 | . |
| Tint Lens SFog 2.5 | 13-05014 | . |



JIFFYHOOD

A lightweight plastic hood that does the job inexpensively, Jiffyhood stows rolled up in a flight case, or even in your pocket. Has an adjustable elastic headband for comfortable fit. P/N 13-03457



FRANCIS IFR HOOD

The Francis hood restricts your vision totally to your instruments and because it's so small, it won't block any part of an instructor's vision. It's made of lightweight but shock-resistant plastic, and has a cushioned face pad for comfort, Adjustable elastic headband. P/N 3362



JEPP SHADES

Replaces bulky, hard-to-use instrument training hoods. The improved design allows better student/instructor interaction. The Cockpit proven design works conveniently under headsets and the universal adjusting strap reduces pressure on the ears and temple. The Velcro™ strap fits comfortably and flip-up lens allows convenient IFR/VFR flight transition. The high quality polycarbonate lens is impact resistant. P/N 13-404311

FOGGLES

A creative solution to the problems caused by wearing a large hood on your head. Foggles fit and feel like glasses, but the opaque frosting on the top and sides let you see only the instrument panel. Your out the window view is always foggy. Wear them with headsets and microphone with no interference or discomfort. They come with a protective carrying case and weigh only two ounces. P/N 13-06500



SUPER HOOD

This Super Hood is one of the safest, most comfortable and best made instrument training hoods we've found anywhere. Ideal with eye glasses or headsets it slides in under the headset without relinquishing control of the aircraft and it can be instantly removed at any time for a safe approach or landing. Blocks outside reference but provides a full panel view to reduce vertigo. Light weight (3 oz.) and comfortable. P/N 13-30200



VIBAN IFR TRAINING HOOD

Pilots prefer ViBAN over other view-limiting devices because it weighs only 2 oz., making it easy to put on and take off during flight. Its eye-catching design is skillfully engineered to provide a perfect view of the instrument panel while providing complete occlusion forward and to the side. Even more, ViBAN folds compactly to fit in its own durable case and is easily stored in your flight bag.

Without Nosepiece.....P/N 13-02022

With Nosepiece.....P/N 13-02023

OVERCASTERS

Overcasters is a unique IFR training tool which clips to glasses (sunglasses or RX) in seconds. Flip-up in one easy motion for easy transition. Feather light with no straps, helmets, or hoods. Accepted by IFR examiners for checkriders. P/N 13-33799



ASA HOODWINK IFR TRAINING HOOD

Unique design easily and automatically springs open when removed from its pouch and packs away for storage with just a simple twist. Lightweight, yet durable enough to withstand the rigors of daily use. 4"x4" slim pouch is small enough to fit in a shirt pocket or in almost any flight bag compartment. Can be used with or without headsets. One size fits all. P/N 13-05620



CLOUD-EEZE™ IFR TRAINING GLASSES

IFR Glasses' Old Foggies™ brand view limiting device was developed in order to balance the training value of a view limiting device without further limiting the pilot from being able to read his/her charts. Old Foggies™blend of precision fogging and custom powered corrective lenses allows for the precise amount of the instrument panel viewing without any view of the horizon. Old Foggies™ are available in customizable powers with no need for a prescription. Available in Clear and Light Mirrored Tint (a reflective coating that eliminates glare without further limiting visibility). Available Powers: 1.5, 2.0, 2.5

Cloud-eeze Clear LensP/N 13-05015

Cloud-eeze Tint Lens.....P/N 13-05016



LOG BOOKS

AERO PRODUCTS AIRCRAFT LOGS



Permanent, hard cover, logs with leatherette cover printed in gold. Pages are updated to current FAA requirements. Generous line spacing. Size: 5.75"x7.75"; 74 pgs; Green cover. Comprised of 9 sections: Aircraft Description, Installed Equipment, Major Alterations, Life Limited Parts or Overhaul Requirements, AD or Factory Bulletin Compliance Record, Altimeter and Static System Checks, Radio and Electronic Checks, Maintenance Record (FAR 43.9), Inspection Record (FAR 43.11-91.217).

AF-5 Hard Cover.....P/N 13-32385
AL-12P Soft Cover.....P/N 13-04670

CUSTOM-BUILT AIRCRAFT OWNERS & OPERATORS MANUAL



Contains spaces for listing of aircraft description, specifications, construction data, weight and balance calculations, operating limitations, operating instructions and servicing information. (L. Pazmany) P/N 13-20100

ASA AIRCRAFT LOG BOOKS



Designed to keep records of the entire aircraft in order: inspections, tests, repairs, alterations, ADs, service bulletins, and equipment additions, removals or exchanges.

SA-1 soft cover-hunter green; 7.25" x 4"; 64 pgs
P/N 13-32375

SA-2 Hard cover-Hunter Green; 7.75" x 5-5/8"; 96 pgs.
P/N 13-32384

ASA AIRCRAFT FLIGHT LOG/ LOGBOOK (SP-FLT)



Spiral-bound and perfectly sized to fit in an aircraft glove box or chart pocket, this logbook is a quick reference to the recent history of the airplane so pilots have immediate access to the airplane's records without needing to dig through logbooks usually kept in the maintenance hangar. The Aircraft Flight Log fills a gap in aircraft records for pilots, and instantly allows them to know the status of the aircraft they are about to fly. P/N 13-03163.....

PLANEVIEW AIRCRAFT FLIGHT LOGS



There are several things that make this flight log useful to so many owners and operators. Its size is compact and can be easily stored in a glove box or side pocket. You only have to use the categories that are important to you. The owner of a Piper Cub would not use the logbook to the extent that a Piper Mirage owner/operator would, but it can easily accommodate the needs of both aircraft. Multiple pilots can use the book, so it can be used in an aircraft that is used in partnerships, flight schools, charter and many other operations where there are a number of different pilots flying the aircraft. A flight school or aircraft rental company could track how their aircraft is being utilized.

Single engine log.....P/N 13-01946

Multi-engine log.....P/N 13-01947

INTERNATIONAL PILOT LOGBOOK



In addition to complying with all the FAA regulations, the international logbooks follow all ICAO and JAA recordkeeping requirements pertaining to pilots. These are the two governing bodies regulating the aviation industry outside the US.

The International Pilot Master Log is perfect for professional aviators, or those who fly frequently. Hardcover: 11"x6.5", 278 pgs. Includes green summary pages. P/N 13-02554

The International Pilot Log is a slightly smaller version of the Master Log. Hardcover: 7.75"x4", 68 pgs. P/N 13-02553

AIRCRAFT EXPENSE & USAGE JOURNAL



This product is a compact 32 page journal, measures 4 1/4" tall by 2 3/4" wide, is assembled with 2 staples, and can easily fit into aircraft glove box or shirt pocket. Weight is approximately 1/2 oz. Printing is black on cover of white 67 lb cover stock paper and on pages of white 20 lb paper. Journal covers a full one year period, contains spaces for 20 transactions per month, and includes

a monthly/yearly summary.
Expense Journal.....P/N 13-05056

Usage Journal.....P/N 13-05057

AERO PRODUCTS ENGINE LOGS



Permanent, hard cover, logs with leatherette cover printed in gold. Pages are updated to current FAA requirements. Generous line spacing. Overall dimensions: 5.75"x 7.75"; 74 pages; Red cover. Comprised of 8 sections: Engine Description, Installed Record, Life Limited Parts or Overhaul Requirements, AD or Factory Bulletin Compliance Record (propeller or rotor only), Repair and

Inspection Record (propeller or rotor only).
EF-5 Hard Cover.....P/N 13-32390

EL-13P Soft Cover.....P/N 13-03811

ASA ENGINE LOG BOOKS



Keep track of engine inspections, tests, repairs and alterations, airworthiness directives, manufacturers' mandatory service bulletins & equipment removal or exchange. Color: Burgundy

Hard Cover (7.75" x 5-5/8") 96 pages.....P/N 13-32382

Soft Cover (7.25" x 4"). 64 pages.....P/N 13-32380

EAA LOGBOOKS



Aircraft Log.....P/N 13-16500

Engine Log.....P/N 13-02253

Propeller Log.....P/N 13-02255

ASA AIRCRAFT FLIGHT LOG



The ASA Flight Log is the perfect tool for aircraft owners and aircraft flown by multiple pilots to keep track of the care and use of an individual aircraft. Spiral bound and perfectly sized to fit in an aircraft glove box or chart pocket. Logbook pilots will have quick reference to the recent history of the airframe without digging through those usually kept in the maintenance hangar. P/N 13-03163

ASA PROPELLER LOGBOOK



Record data for hub & blade inspections, repairs and alterations, airworthiness directives, & factory bulletins. Soft cover, Black, 7-1/4" x 4", 20 pages.

P/N 13-32370

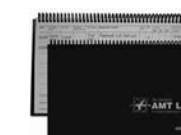
ASA AVIONICS LOG BOOK



Includes entries for avionics equipment, VOR accuracy, transponder & ELT checks, AD & SB compliance, maintenance records. Soft cover, blue/gray, 7.25"x4", 64 pgs.

P/N 13-02315

ASA AMT LOG BOOK



Designed for Maintenance Technicians, IA-qualified mechanics, and students to log training and educational requirements, work performed, and experience for the purpose of tracking for future certification, recurrence, employment applications, school records, or insurance applications. Plastic coil binding stays open on current page.

Soft cover, 6 1/2" X 11", 192 pages. P/N 13-02313

FLIGHT SCHEDULE LOG



Essential to smooth dispatching, features include: a replaceable perpetual aircraft/ instructor entry panel; standby request section; and time in 15-minute blocks. Charcoal Gray binder is 17-1/4" x 13-5/8" with 15" x 12" pages for easy viewing. 60 pages included, refill packs available.

P/N 13-02308

FLIGHT SCHEDULE REFILL PACK - Can be used over and over with this 60-day refill. P/N 13-02309

GLEIM PILOT LOGBOOK



The Gleim Pilot Logbook provides detailed entries for all inflight information, sections for certificates, ratings, and operating privilege endorsement section, table of contents, room for up to 450 entries, and much more. High quality paper and hard cover binding. 112 pgs. 5"x9. P/N 13-01822

PS

PILOT LOG BOOKS

JEPPESEN PROFESSIONAL LOGBOOK



This professional log book from Jeppesen, measuring 6-1/2" x 11" is constructed of sturdy, easy-to-read ledger paper & includes an elegant cover with a gold sticker in which you can write your name on.

P/N 13-21728

JEPPESEN PROFESSIONAL EUROPEAN LOGBOOK



Complies with JAR 1.080 regulations for logging flight time in Europe. handles 10 years of data. Size: 17.1 x 28.6 cm

P/N 13-02212

JEPPESEN PILOT LOGBOOK



Our 96-page permanent record offers large flight time category spaces, arranged according to FAA regulations. Printed on "easy-eye" green pages that resist "bleed through". Size: 8-5/16" x 5-5/16"

P/N 13-21732

LEATHER LOGBOOKS



Inside the cover is an inserted loose-leaf book that will allow replacement pages when required. The 6-ring binder is designed so it can be replaced if damaged. All metal parts of the book are 24K gold plated for endurance and lasting looks. The pages are made of special hand picked quality paper with follow through lines. Has memorandum pages, annual flight totals, flight summary pages, notes, endorsement pages, vinyl document savers, and vinyl picture savers. The Old World Leather Logbook has naturally embossed lettering. The Premier Leather Logbook has gold lettering. Size: 10" x 7".

Old World Logbook (brown)..... P/N 13-21955.....

Old World Logbook (terra)..... P/N 13-21960.....

Premier Logbook (brown)..... P/N 13-21755.....

POWDER PUFF PINK LOGBOOK



The Powder Puff Pilot standard logbook has a pink, protective hard cover with the Powder Puff Pilot logo on the front. It's standard size (8 1/4 by 6 1/4 inches) with 52 pages of all the record keeping, endorsements, and flight log information that every pilot needs. Inspirational quotes from the famous pioneers of women aviation sprinkled throughout to keep you motivated, inspired, and flying high.

P/N 13-06342

CLASSIC BLUE AERLOG® TRIP & EXPENSE RECORD



The Classic Blue Aerlog® is the original pocket sized, permanently sewn-bound book, much like a traditional Master Log book, only smaller. The Aerlog® Classic makes transcribing to another Master log book unnecessary. The Classic Blue Aerlog® has a separate "pay section" that is preferred by pilots who like to keep their pay time right next to their flying time.

P/N 13-20155

THE LITTLE MAROON AERLOG®



Designed for all pilots who record only their flying time and expenses. The Little Maroon Aerlog® has 224 loose pages that have a semi-concealed black wire binding. Water resistant vinyl cover. Has the same proportional spacing and the convenient look and feel as the Classic Aerlog.

P/N 13-04431

LIGHTER LOG



Plugs into your aircraft's lighter receptacle and tracks each flight effortlessly. Monitors the system voltage and warns of possible generator or electrical problems. Plug it in to any 12 or 24-volt system and forget it. Up to 500 flights may be recorded and stored in the internal memory for 10 years. Attach the LighterLog to any Windows 95/98/2000/Me personal computer using the included serial cable and download the flight records to the included Lighter Logbook software. Optionally attach the LighterLog to any industry compatible GPS or LORAN digital port and the LighterLog will record departure and destination information. If no GPS/LORAN is available, the Lighter Logbook software will list all airports within cruising range of the recorded flight time. Just point and click on the destination airport. Print familiar style logbooks from the computer whenever you like.

P/N 13-03299

STANDARD PILOT MASTER LOG BLACK



Hard cover, 6.5"x 11", 278 pages.

P/N 13-32392

PILOT LOGBOOK (ASA-SP-10)



This new introductory logbook is perfect for flight instructors and flight schools to start students out with an inexpensive logbook. With space for 16 separate flight entries, a ground instruction log, several solo endorsements, and a separate log for each type of aircraft flown, this logbook is great for introductory flights, first flight lessons, promotional give-aways and more.

P/N 13-05670.....

PROFESSIONAL PILOT LEATHER LOGBOOKS



These Professional Pilot Logbooks are the highest quality logbooks we have seen, and we are proud to make them available to Aircraft Spruce customers. They are designed and made to last a lifetime. Available in Aviation leather and brown leather which are styled to look like a log book dating back to the early days of aviation, as well as black leather which is standard in modern log books. Most are bound from cloth over cardboard or from patent or genuine patent leather. Both are substitutes for what we're looking for. In fact, the genuine patent leathers are simply 'paper' leather glued onto cardboard. This logbook is bound from true leather. The log pages are designed to keep traditional logging info but to provide more flexibility. It has customary Date, Aircraft, Pilots, Route & Remarks sections. Each page is 8.5"x 9"; 20 entries per page; 288 pages which allows for 2600 entries. ..Aviation - Brown leather.....P/N 13-02139

Antique - Brown leather.....P/N 13-02141

Black leather.....P/N 13-02140

STANDARD PILOT LOG BLACK



Hard cover, 7.5" x 4", 100 pages..

P/N 13-32365

STANDARD PILOT LOG BURGUNDY



Hard cover, 8" x 4-1/2", 100 pages.

P/N 13-32360

STANDARD PILOT LOG NAVY BLUE



Hard cover, 5.5" x 8.5", 110 pages. P/N 13-32355

FLIGHT CREW LOGBOOK



Created with the input of airline pilots & instructors, these shirt-pocket size logs are designed for long lasting and comprehensive recordkeeping on the road. Options are provided for tracking flight time, currency requirements, expenses, duty times, layovers, and much more. Soft cover, 108 pgs.

P/N 13-04432

CREW FLIGHT LOG TIME & EXPENSE RECORD



With a durable high quality vinyl cover, this book is the world's most usable flight crew log. Including an upgraded calendar and unique guide to aviation info sources, Crew Flight Log meets both FAA & IRS record-keeping requirements.

P/N 13-04573

MASTER LOGBOOK CASE



Durable nylon logbook cover sized to hold master logbook, charts, and other aviation essentials. Loop for pen or pencil, hook and loop closure, clear pockets for license and medical certificate. 7.5"x12"; hold logbooks up to 6.5"x11".

P/N 13-02311

LOGBOOK ENDORSEMENT STICKERS



Can be used for Flight Reviews and Instrument Proficiency Checks, and comply with FAR 61.56 and FAR 61.57 on PIC recent flight experience and flight reviews. Each sticker measures 2" H x 4"L. 10 stickers per sheet on white paper.

P/N 13-06585

LOG BOOK COVERS

These nylon logbook covers are very light weight but cover and protect your logbook very effectively. The nylon material is extremely durable and is washable. The cover features a holder for two pens and a velcro pocket on the back for licenses, gas receipt, and other documents.



| Color | Size | Description | PN | Price |
|-------|--------|-------------------|----------|-------|
| Black | Medium | JEPP | 13-04402 | . |
| Black | Medium | ASA | 13-04403 | . |
| Black | Medium | Sporty's/Stafford | 13-04404 | . |
| Blue | Medium | JEPP | 13-04405 | . |
| Blue | Medium | ASA | 13-04406 | . |
| Blue | Medium | Sporty's/Stafford | 13-04407 | . |
| Red | Medium | JEPP | 13-04408 | . |
| Red | Medium | ASA | 13-04409 | . |
| Red | Medium | Sporty's/Stafford | 13-04410 | . |
| Black | Large | JEPP | 13-04411 | . |
| Black | Large | ASA | 13-04411 | . |
| Black | Large | Sporty's/Stafford | 13-04412 | . |
| Blue | Large | JEPP | 13-04413 | . |
| Blue | Large | ASA | 13-04413 | . |
| Blue | Large | Sporty's/Stafford | 13-04414 | . |
| Red | Large | JEPP | 13-04415 | . |
| Red | Large | ASA | 13-04415 | . |
| Red | Large | Sporty's/Stafford | 13-04416 | . |

PS

SCOTT FLIGHT BAGS



It all started back in California in 1957 when Bob Scott ("Scotty") began making saddles. Many of his saddles are on display at the Cowboy Hall of Fame and many more are still being ridden by world champion cowboys. Then in 1967, Scotty became a pilot with Northwest Airlines. He retired from Northwest after 30 years, but Scotty still enjoys flying his Cessna 310. He made his first flight bag in 1977. The next year saw Scotty selling 2 or 3 flight bags a month to fellow pilots. Scott Leather has continually grown since those early times, but the workmanship, quality and guarantee of each bag remains the best in the business.

EMBOSS ANY SCOTT FLIGHT BAG WITH 3 INITIALS (SPECIFY).....\$9.95



JUMBO FLIGHT BAG

The newest kit bag and now the #1 seller! Designed to be carried on your roller suitcase, Scott has incorporated the BEST of both style bags into one. Sturdy straps support the entire case from the bottom. Brass combination locks and feet, 2 inside panel pockets. Grade A saddle leather, features Scott's famous 1-piece construction.

8"-Black P/N 13-02510
 8"-Brown P/N 13-02511
 7"-Black P/N 13-02512
 7"-Brown P/N 13-02513



SQUARE TOP FLIGHT BAG

Made of the same fine heavy Grade A saddle leather, this case also has 1-piece body construction. All stress points are riveted. A handsome briefcase style with brass combination locks and feet, 2 inside pockets. size: 18"l x 8"w x 12"h

8"-Black P/N 13-02514
 8"-Brown P/N 13-02515
 7"-Black P/N 13-02516
 7"-Brown P/N 13-02517

WHEELED SQUARE TOP FLIGHT BAG



The Square Top Bag is now available with an Inline Skate Wheel System and a Three Position Telescopic Handle. The wheel and handle systems are attached to the outside of the bag so you do not lose any capacity on the inside. The lid stays open with simple snap closure. Optional accessories can be added at additional cost. size: 18"Lx10"W x 16"H

Black P/N 13-02522
 Brown P/N 13-02526



ROUND TOP FLIGHT BAG

Hand crafted from the finest Grade A saddle leather. Famous 1-piece body construction. Leather straps wrap around the entire bag for extra heavy support. All stress points are riveted. 2 inside pockets. Brass feet & hardware. 18"l x 8"w x 12"h

8"-Black P/N 13-02518
 8"-Brown P/N 13-02519
 7"-Black P/N 13-02520
 7"-Brown P/N 13-02521



DELUXE PILOT CADDY

Handmade from the finest Grade A saddle leather. Keep charts, pens, pencils, computers, sunglasses, etc. right where you need them. Divided into 3 sections. 2 large sections measure 8.5"l x 4.25"w x 6.5"d inside - big enough for the largest Jeppesen binders or even a headset. Black.

P/N 13-02528



CERTIFICATE HOLDER

Handmade from the same Grade A saddle leather as Scott's flight bags. Guaranteed to last a lifetime.

Black P/N 13-02530
 Brown P/N 13-02531



OUTSIDE POCKET

Optional 6"x9" end pocket w/ snap closure can be added to either or both ends of any kit bag. Designed to hold enroute charts, etc.

Black P/N 13-02524
 Brown P/N 13-02525



LEATHER HEADSET CASE

2-sided and center divided pouch helps organize your bag. Headsets on one side, pencils and glasses on the other. Keep them separated & protected. Approximate size: 13"L x 6.5"T. 2 Zippers. Available in black only.

P/N 13-02529



LEATHER AIRWAY MANUALS

Handmade from the same Grade A saddle leather as Scott's flight bags. Guaranteed to last a lifetime. High quality 4 ring push tab mechanism. Handy pocket on inside front cover. Rings measure 1.5" dia. You can add Quick Tabs, see below.

1" ring-Black 13-02533
 2" ring-Black 13-02535
 1" ring-Brown 13-02534
 2" ring-Brown 13-02536



INSIDE POUCH

Optional 5" X 12" zippered pouch attaches with velcro to top inside flap. Large enough for sunglasses, mini maglite, screwdriver, gum, etc. Stitched on the outside of pouch are 2 pen loops plus a larger highlighter loop. Black.

P/N 13-02523



QUICK TABS

Before a trip, insert 1 of 5 different colored tabs to mark airports most used. Eliminates time spent looking for pages. Package of 5.

P/N 13-02532



NOS BINDERS

Handmade from the same Grade A saddle leather as Scott's flight bags. Guaranteed to last a lifetime. High Quality 7 ring push tab mechanism. Available in 2" ring size and hard to find 1" ring size. Handy pockets on inside of both covers. Personalized with your name & airline at no extra charge.

Black P/N 13-02537
 Brown P/N 13-02538

PS

TRAVEL BAGS - FLIGHT BAGS

SCHEYDEN TRAVEL BAGS

The bags can be custom embroidered and are available in Navy, Red, Hunter Green, Khaki, Grey, Black and Metallic Mocha for a additional fee.

Add the appropriate dash number after the part number for the color of your choice: Navy (-1), Red (-2), Hunter Green (-3), Khaki (-4), Grey, (-5), Black (-6), Mocha (-7)



PIGGYBACK2

The most functional carry-on bag ever made. One section converts to a day/backpack and features a patented high-impact wheel base and telescoping retractable handle. Slip the Club Glove Shoulder Bag over the handle for the ultimate airline carry-on set. Weight: 10lbs.
P/N 13-04278



SHOULDER BAG

Designed with access on both sides, this Shoulder Bag maintains the strength and features of the Club Glove line. Carries a laptop, documents, or use as an overnight bag. Included is a dual shoulder strap (patents pending) that distributes the weight evenly and comfortably. (makes a great flight bag) Weight: 2.2lbs
P/N 13-04280.....



ENSEMBLE

The Piggy Back II, Shoulder Bag and Travel Kit! Weight: 12.7lbs
P/N 13-04279

BISON MOUNTAIN RV FLIGHT BAG



A practical solution to organizing the cargo area of your RV-6, RV-7 or RV-9. Also makes a great overnight bag! Our RV Flight Bag was designed to fit behind the pilots and co-pilots seat of the RV-6/7/9. It fits over the flap actuator bar and makes maximum use of the area behind your seat. This keeps the CG as far forward as possible and maximizes remaining cargo space. The RV Flight Bag is 18 inches high and 12.5 inches wide. It has a very large main cargo area easily accessible with a large zipper flap. There are two side pockets, one 10" x 4" and a 7" x 5.5" map pocket. The rear side of the bag has a pencil / flashlight/fuel tester pocket, a 10 inch x 7 inch headset pocket, and a 6" x 5 1/4" pocket for small tools. The material and zippers are heavy duty and will last a long time. The bag is made of durable Curdura and is resistant to liquids. It has a nice carrying handle and comes with two straps that can be attached to your seat back to clip the bag to your seat to minimize movement. It also comes with a removable shoulder strap.

| Description | Color | Part No. | Price |
|---------------|---------------|----------|-------|
| RV FLIGHT BAG | BLACK CURDURA | 13-05321 | . |
| RV FLIGHT BAG | GREY CURDURA | 13-05323 | . |
| RV FLIGHT BAG | BLACK LEATHER | 13-05324 | . |
| RV FLIGHT BAG | GREY LEATHER | 13-05326 | . |
| RV FLIGHT BAG | BROWN LEATHER | 13-05328 | . |

FLIGHTLINE FLIGHT BAGS

LARGE DELUXE FLIGHT BAG



The top of the line Flight Bag by Flightline boasts an incredible array of features for the price. This heavy-duty bag is double stitched and ideal for large loads. 12"H x 7-1/4"W x 14-1/2" L
P/N 13-04255

MEDIUM DELUXE FLIGHT BAG

This Flight Bag is ideal for pilots who have a lot to carry but not a lot of space to put the bag. It is currently any pilot's favorite flight gear! 10"H x 6-3/4"W x 12-1/2" L
P/N 13-04256.....



DELUXE HEADSET BAG

It is the perfect bag to protect and organize any fragile and expensive equipment. Not only will this bag hold a headset, but other necessary items as well! 10"H x 4-1/4"W x 10" L
P/N 13-01416.....

TOP GRAIN LEATHER FLIGHT BAG



- Dimension: 18" length x 10" wide x16" height
- Designed to carry six binders
- Padded compartment for lap top computers or GPS
- 3 position telescopic handles
- 3 brass combination locks

P/N 13-04229.....

BISON MOUNTAIN ULTIMATE FLIGHT BAG



This is the Ultimate Flight Bag for all your flying needs. Taller than most bags, it makes more use of the vertical room in your narrow baggage compartment or cockpit. At 19.5 inches long, 9 inches wide, and 14 inches tall you can pack everything you need to fly with and there is enough room left over for a couple days worth of clothes. The interior compartment is 14 inches long, 7.5 inches wide, and 14 inches tall. A removable interior divider velcros in place to increase storage options. There are nine exterior pockets. Exterior pockets include a padded headset pocket, padded pocket specifically for Garmin 496 or similar GPS's (or handheld radios), cellphone pocket, pocket for magazines or newspapers, water bottle pocket, chart pocket, 8.5 inch by 7 inch pocket for logbooks or aircraft manuals and pen, pencil, flashlight holder. Large padded laptop compartment that measures 14 inches long, 12 inches high, and 1.5 inches wide. A clear plastic identification card holder. There is a place for military or civilian wings that attach with velcro. It comes with sturdy carrying handles that velcro together and a removable carrying strap.

pocket, pocket for magazines or newspapers, water bottle pocket, chart pocket, 8.5 inch by 7 inch pocket for logbooks or aircraft manuals and pen, pencil, flashlight holder. Large padded laptop compartment that measures 14 inches long, 12 inches high, and 1.5 inches wide. A clear plastic identification card holder. There is a place for military or civilian wings that attach with velcro. It comes with sturdy carrying handles that velcro together and a removable carrying strap.

| Color | Part No. | Price | Color | Part No. | Price |
|---------------|----------|-------|---------------|----------|-------|
| Black Curdura | 13-05329 | . | Grey Leather | 13-05334 | . |
| Grey Curdura | 13-05331 | . | Brown Leather | 13-05336 | . |
| Black Leather | 13-05333 | . | | | |



SKY HIGH & NORAL FLIGHT BAGS

Sky High Gear Flight Bag Systems are integrated with cutting edge STYLE for today's pilots. Each bag is loaded with patent pending design work to maximize packing UTILITY for all activities. Designed by Pilots for Pilots.



APOLLO FLIGHT ATTACHE

The Apollo messenger bag was designed for the business pilot who does not want to carry multiple bags as they visit on and off field customers. Their integrated file dividers will hold file folders, note pads, brochures, catalogs, forms, and more. They have also integrated our CoPilot feature which allows the document and map section of the bag to lay open on the seat next to you

for easy access to your important nav charts, approach plates, markers, flashlight, batteries, etc. P/N 13-03279

DISCOVERY DUFFLE BAG

The Discovery flight duffel is a fully padded duffel designed to protect all of your important gear. The Discovery is designed with full sized compartment flaps to allow easy access to all of your gear, before, during and after flight. The spacious end compartments and innovative closure flaps make putting away or getting out your ANR headsets and other gear a breeze. The center compartment has a double zipper opening with a padded divider to segment the compartment for easy access and storage. P/N 13-03280

FREEDOM VII DAY DUFFLE BAG

Freedom VII is the flight bag for those who want to pack light for a short day flight or a CFI who needs just the minimum requirements for a lesson. This flight bag comes with their patent pending CoPilot feature. This allows you to organize 4 sectionals, extra batteries and other miscellaneous equipment. The main compartment has plenty of room for a headset or two 2" Jepp Chart binders with a pocket on the back for your kneboard, A/FD or other materials. If you need a small flight bag this is the bag for you.



Blue..... P/N 13-03277

Green..... P/N 13-03350

Red..... P/N 13-03351



SKY HIGH GEMINI

The Gemini flight bag is a fully padded duffel designed to protect the pilot's important gear. It is made with full sized compartment flaps, allowing easy organization of flight materials and access during flight - there is even a special stow-a-way pocket designed to hold most kneboards. Everything is right where it should be - especially important during IFR flights. The center compartment has a double zipper opening with a padded quad-modular divider to segment the compartment for custom organization and easy access. P/N 13-04254

VOYAGER FLIGHT ATTACHE

The Voyager Attaché flight bag gives you the ability and convenience of being able to carry charts, sectionals and all the necessities without carrying around a larger flight bag. The CoPilot feature allows you to organize up to 6 sectionals and essential equipment. The main compartment can hold a single headset, Jepp chart binders and/or Air Charts. A kneboard pocket is on the back for added convenience. The Voyager is made of ballistic nylon for extra durability.

Blue..... P/N 13-03278

Red..... P/N 13-03348

EXPLORER PRE FLIGHT POUCH

Our preflight pouch is made of durable 600D Polyester. It is designed to organize and hold your basic items for your preflight - Mini Mag size flashlight, fuel tester, pen/pencil, tire pressure gauge, and pliers or wrench. We have also included a grommet on the corner so you can attach a towel for wiping your hands clean. The Explorer will fit easily into any bag and has a Velcro strap to attach to your waist belt for convenience during the preflight. P/N 13-03276



NORAL AIRCRAFT DOCUMENT HOLDER

This durable document holder is made of strong fabric with two clear pockets to hold your aircraft document secure and visible. It comes with two inches of velcro to be placed anywhere that velcro can be applied to..... P/N 13-01134.....



NORAL SINGLE HEADSET BAG

This bag is ideal for the pilot that wants to carry a passenger headset or his own, separate from his flying bag. It is constructed with genuine DuPont® Cordura® 1000 Deniers, water resistant, fully padded with a 1/4" foam and backed with a layer of tricot. Features separate zippered compartment along with an extra side pocket.

Red..... P/N 13-00281

Navy Blue... P/N 13-00282

Grey..... P/N 13-00286

Black..... P/N 13-00288

NORAL STUDENT PILOT BAG

The Student Pilot Bag has plenty of room for everything a student pilot needs to carry and more at a price unmatched by any other brand. It has 2 extra large zippered headset pouches plus another zippered section to store pens, flashlight, fuel tester, E6B computer and more! Access to the main compartment is through a double zipper flap with a pull cord. In addition to the carrying handles, a detachable padded shoulder strap is included.

Size: 11"H x 10.5"W x 12"L.

Navy Blue P/N 13-00291.....

Grey..... P/N 13-00294

Black..... P/N 13-00297.....



NORAL PRIVATE PILOT BAG

Fits all the goodies and gadgets a pilot needs and wants to carry. It has two extra large zippered headset pouches plus another zippered section to store pens, flashlight, fuel tester, E6B computer and more! Access to the main compartment is through a double zipper flap with a pull cord. In addition to the carrying handles, a detachable padded shoulder strap is included. Size: 11"H x 10.5"W x 15.5"L.

Navy Blue..... P/N 13-00299

Black..... P/N 13-00313



NORAL MACH 1 FLIGHT BAG

The Mach 1 flight bag is compact yet roomy. The bag features a wide 5" double zippered access flap with a pen and pencil holder. There are two end compartments 6"X10". On the front, a zippered 11"X 6" compartment. On the back is a 4"X 8"X 8" headset compartment which will accommodate the largest of headsets. The Mach 1 is made of US Made Nylon with 1/4" Foam Padded, 1000 Denier and is water resistant. It comes equipped with a GPS/Transceiver Pouch that can be worn on your belt. Also included is a shoulder strap and carry handle. Dimensions: 15"LX11"WX10 1/2H

Black.... P/N 13-04088

Navy Blue..... P/N 13-04091.....

Grey..... P/N 13-04092

Red..... P/N 13-04093.....



NORAL ADVANCED PILOT BAG

The Advanced Pilot Bag has extra large access (5-3/4" wide) and is very comfortable! Featuring two huge headset bags, one on each end, it can hold more than just a headset. It has a detachable shoulder strap and carrying handles and are padded for extra comfort. It also has a zippered compartment for pens, flashlight, fuel tester and more! The main compartment's loose semi-rigid divider is made of a very strong, but extremely light weight hollow polypropylene. Covered with black fabric, it can be adjusted to your needs. It also contains a GPS or transceiver pouch to help protect equipment from damage due to accidental banging on hard surfaces while also keeping it out of sight to protect from theft. Size: 11"H x 10.5"W x 18.5"L

Black..... P/N 13-00172



SMART CHART ORGANIZER

Made of US Made Nylon 1000 Denier with 1/4" Foam Padded. And it features 6 card holders in the bottom and a compartment for chart. It secures the document by a Zipper closer. Available in Black, Navy Blue, Red & Gray. Dimensions 6"W X 14"L. The 6" Wide will be 12" in open position. Embroidery is available for \$11.95 (16 Char. Max)



| Description | Part No. | Price |
|-----------------------------------|--------------|-------|
| Noral Smart Chart Organizer Black | 13-04456-B | . |
| Noral Smart Chart Organizer Navy | 13-04456-N | . |
| Noral Smart Chart Organizer Blue | 13-04456-BLU | . |
| Noral Smart Chart Organizer Red | 13-04456-R | . |
| Noral Smart Chart Organizer Grey | 13-04456-G | . |
| Noral Smart Chart Organizer Camo | 13-04456-C | . |

PS

FLIGHT BAGS

ASA AIRCLASSICS FLIGHT BAG

ASA has brought pilot gear to a new level with the AirClassics series of pilot bags. Focusing on a clean, sophisticated and professional look, they have been designed and engineered to be supremely functional.



Padded 600D nylon for superior durability. Comfort Grip connectable handles. Non-slip detachable carry strap. Reinforcing straps around bag for strength. #10 zippers for easy handling. Headset pockets on both ends. Large single-pull, zippered & dividable main compartment.

P/N 13-02336

ASA AVIATOR FLIGHT BAGS



P/N 13-04057
Pilot Flight Bag
11" tall x 10" wide x 8" deep

P/N 13-04058
Trip Bag
11" tall x 16" wide x 8.5" deep

The Pilot Flight Bag and the Trip Bag, are made of fully padded nylon for extreme durability. They feature wraparound carry straps for strength, a non-slip detachable shoulder strap, and high-quality zippers on the main compartments.

Pilot Bag.....P/N 13-04057
Trip Flight Bag.....P/N 13-04058

ASA TECH FLIGHT BAG



ASA pilot gear bags are well known for their supreme functionality, rugged construction and professional style. The Tech Bag is ideal for the computer-toting pilot. It includes a padded laptop sleeve for safe storage of your computer or favorite EFB (up to 15" x 11") and has plenty of pockets for carrying everything from headsets to sticky notes. It's a mobile

office/flight planning room in a bag! Count on your ASA Tech Bag to bring you many years of utility and pride.

Dimensions: 19" wide x 8" tall x 12 1/2" deep

- * Made of 600D polyester with PVC backing for extreme durability
- * Non-slip removable shoulder strap
- * Molded carry handle for strength and comfort
- * Rugged zippers
- * Outside ID pocket
- * Padded interior divider panels with numerous compartments
- * Padded interior laptop/EFB sleeve

P/N 13-06260.....

ASA CRM FLIGHT BAG



This "copilot in a bag" not only keeps your gear organized on the go, but in the cockpit as well. Its functional design serves double duty as a great storage apparatus and ultimate cockpit organizer. Numerous compartments and pockets keep everything secure and easily accessible in flight. There are even "hideaway" stretch mesh side pockets for water bottles. It's large enough to hold everything you need yet compact enough to easily bring along on shorter excursions. Count on your ASA CRM Bag to bring

you many years of utility and pride.

Dimensions: 14" wide x 12 1/2" tall x 9" deep

- * Made of 600D polyester with PVC backing for extreme durability
- * Non-slip removable shoulder strap
- * Padded carry handle
- * Rugged zippers
- * Interior organizer with multiple pockets
- * Large interior mesh pocket with toggle closure
- * Side zippered pocket with stretch mesh for water bottle

P/N 13-06258.....

AEROCOAST FLIGHT CASES



PRO I FLIGHT CASE - This professional grade flight case includes many added features not present on today's flight cases. Features such as multi access folders, flashlight holder, multiple pockets, business card sleeve, and a protective base plate.

- * Waterproof ballistic material
- * Metal piano hinge for added strength
- * Protective plastic plate

- * Multi access folder compartments
- * Multiple storage compartments
- * Flashlight holder
- * Leather wrapped handle
- * Side pocket compartment
- * Name card holder with clear cover
- * Embroidered gold logo
- * Added Velcro to both inside flaps
- * Outside dimensions 18 x 13 x 8 inches.

P/N 13-06041.....



PRO II FLIGHT CASE - The Pro II flight case offers the same features as the Pro I. However the primary differences you will notice with the Pro II is the sturdy Saddle style handle belts and the absence of the front pocket access.

- * Sturdy saddle style handle wrap
- * Waterproof ballistic material
- * Metal piano hinge for added strength

- * Protective plastic plate
- * Inside access folder compartments
- * Multiple storage compartments
- * Flashlight holder
- * Leather wrapped handle
- * Side pocket compartment
- * Name card holder with clear cover
- * Embroidered gold logo
- * Added Velcro to both inside flaps
- * Outside dimensions 18 x 13 x 8 inches.

P/N 13-06042.....



PRO III FLIGHT CASE - This professional grade flight case includes many added features not present on today's flight cases. The visible difference between the Pro I and the Pro III is the absence of the front compartment lock. Features such as:

- * Waterproof ballistic material
- * Matched Stitching for added strength
- * Metal piano hinge for added strength

- * Protective plastic plate
- * Added Velcro on both inside flaps
- * Riveted pressure points
- * Multi access folder compartments
- * Multiple storage compartments
- * Flashlight and pen holster
- * Leather wrapped handle
- * Side pocket compartment
- * Name card holder with clear cover
- * Embroidered gold logo
- * Outside dimensions
- * 8 x 13 x 8 inches

P/N 13-06105.....

ASA CARGO FLIGHT BAG



ASA pilot gear bags are well known for their supreme functionality, rugged construction and professional style. The Cargo Bag is a true hauler.

ASA pilot gear bags are well known for their supreme functionality, rugged construction and professional style. The Cargo Bag is a true hauler. Its widemouth opening provides unrestricted access to a large interior suited to carrying just about anything and everything you need, and then some. The widemouth opening has a built-in metal rod frame for strength and rigidity where it's needed most. Includes a padded headset pocket accompanied by an abundance of compartments and an adjustable hook and loop divider which allows for customization of the main inside pocket. Count on your ASA Cargo Bag to bring you many years of utility and pride.

Dimensions: 16 1/2" wide x 8" tall x 12" deep

- * Made of 600D polyester with PVC backing for extreme durability
- * Widemouth opening for unrestricted interior access
- * Non-slip removable shoulder strap
- * Padded carry handle
- * Rugged zippers
- * Exterior ID pocket
- * Padded interior divider panels with many compartments
- * Padded exterior pockets and side pocket for smaller items

P/N 13-06259.....



JEPPESEN CASES & FLIGHT BAGS



AIRWAY MANUAL CARRYING BAG

Developed at the request of corporate flight departments. Carries up to eight 2" binders for these extended trips. High quality cordura fabric. (Size: 24" x 11" x 9")
P/N 13-621200



FLIGHT CASES

Top Grain leather flight cases rugged Samsonite brown or black, top-grain flight cases offer the ultimate in convenience and utility. Matched stitching and leather covered handle enhance the looks and carrying comfort. Includes removable binder dividers. Available in 3 sizes:

FC-106 holds 6 binders (12"x9"x18")

Black13-01198

FC-104 Holds 4 Binders (12"x8"x18")

Black13-00116

THE CAPTAIN FLIGHT BAG



The most versatile bag available. Headset bags can be removed and attached together to form a dual headset bag. Removable transceiver/GPS bag can be worn on your belt. 4-way interior custom divider can hold four Jeppesen binders. One large multi-use exterior zippered pocket. Two zippered storage pockets for glasses, charts, pilot operating handbooks and other miscellaneous accessories. Wide cushioned shoulder strap. (12" x 22-1/2' x 8")

BlackP/N 13-621214

BlueP/N 13-00994



THE AVIATOR BAG

Slightly smaller than the Navigator Bag, but still spacious enough for all your flight materials. Includes 1 exterior front pocket as well as detachable headset & transceiver cases. Constructed with durable PVC backed with 600 denier poly. 15"x 6.5" x 12" (black only)
P/N 13-00998

BRIGHTLINE PILOT FLIGHT BAG



Separates into two bags.



Easily holds two headsets.

Organized Two main compartments and 25 specialized pockets to hold each of your items perfectly. Optimized Better storage than any big bag...in a small bag. It's only 12" X 10" X 9". Innovative Many unique features, including swappable handle and shoulder strap, color coded zippers, interior key clip, and much more. Features * Heavy-Duty Nylon construction. * Compact size (12" x 10" x 9"). * 25 specialized pockets.

* Zips apart into two separate bags. * Color coded zipper pulls. * Proper height for navigation charts. * SwitchSnap™ Handle for superb balance. * External chart pocket. * Isolated storage for fuel tester. * Holds two headsets with ease.
P/N 13-06040

NAV-DATA FLIGHT BAG



Finally, an affordable flight bag with compartments for all your flight gear and then some. Made of durable 600D nylon canvas for years of use. Overall dimensions: * 20"x10"x13". Low profile prevents tipping * Two headset pockets * Front expandable VHF and electronics pockets * Large main compartment for kneeboard, charts, facility directory, etc * Adjustable shoulder strap
P/N 13-06090

SINGLE HEADSET BAG



For those who like to fly with minimum baggage, this holds one headset, has extra pockets, and allaround paddingP/N 13-02333

FLIGHT ATTACHE



Holds all the materials a student pilot needs. 15" long x 11" deepP/N 13-02335

JEPPESEN STYLE FLIGHT BAG



Student/Book Bag: Same great bag Jeppesen uses for its training kits. The bag is made from heavy-duty 6000 denier Cordura for superior strength and with a PVC coating on one side for added water resistance. Includes outside pockets, removable shoulder strap, reinforced bottom. Size 10" x 5.5" x 17"
P/N 13-06280

THE NAVIGATOR BAG



The ultimate choice for convenience and flexibility. Each Navigator Bag includes all of the features and benefits of the Captain Bag, except the removable transceiver/GPS bag and the two zippered exterior storage pockets. Instead it includes two exterior storage pockets for easy access to Section Charts. 12" x 22 1/2" x 8"
BlackP/N 13-00995

BlueP/N 13-00996

THE STUDENT PILOT



A great first bag for the student pilot. Numerous outside pockets organize charts, flight computer, fuel tester, plotter, pens and pencils, flashlight and much more. Comfortable, wide removable shoulder strap; double zipper opening for easy access. Reinforced bottom. Constructed with durable PVC backed 600 denier poly. 10"x 5.5"x17" (black only) P/N 13-00997

THE PROTECTOR HEADSET BAGS



Each Jeppesen Headset Bag is fully padded and made from Dupont's® heavy duty 600D-Denier Cordura® polymer with a PVC coating on one side for added water resistance, designed for superior strength, abrasion resistance, and durability. Each includes a leather snap-on handle grip. Size: 12"H x 8"W x 2.75"D

Single Headset Bag
P/N 13-00999

Dual Headset BagP/N 13-01004

TUFF NUFF HEADSET CASE



A rugged built case with "clamshell" design for easy access. Your headset is well protected by a soft foam lining and tough Cordura outer shell. Fits all popular makes and models, with extra room for small accessories. Measures 9-1/2" x 10-1/2" x 3", and weighs 7 oz.
P/N 4002

PS

CHART CLIPS - TOOL BAGS

PUT-IT SUCTION CLIP

This clip is strong enough to hold an approach plate, chart, or checklist. Attaches by a suction cup to the instrument panel, yoke or any other nonporous surface. P/N 8197



NO CLUTTER CLIPS

No Clutter Clips * Holds checklists, approach plates, charts, etc. * Stick on most slick surfaces * UV Resistant
 1 Small Clip per Package P/N 13-06636
 2 Small Clips per Package P/N 13-06408
 1 Large Clip per Package P/N 13-06409



WATCH-IT ACCESSORY HOLDER

"World's most versatile holding device". Lets you mount time pieces and calculators exactly where you want-on the wheel, the yoke tube of clipboard. An ingenious bracket, an adjustable holding loop, and a little Velcro is all it takes. Once positioned, can be mounted & removed repeatedly. Non-reflecting, black materials, weighs less than 1oz.
 P/N 8265



YOKE CHART CLIP

When you want the chart or approach plate right in front of you - this clip will hold it on the yoke. Adjustable band wraps around the yoke and holds the clip firmly. Fits all general aviation aircraft controls. Non-reflective black finish.
 P/N 8135



IFR CHART CLIP

Make IFR flying simpler by keeping vital instrument approach plates and charts in place. Attached to the yoke rather than in your lap or on the floor, this chart clip comes in various models designed to install easily on the yoke of your aircraft. Insures that your navigational charts stay in front of your eyes when you need them most. Handy for VFR charts as well. We'll be happy to assist you in determining what model chart clip will best



fit your aircraft.

- 1.5" Post Standard Clamp P/N 8131
- 1.5" Post Wide Clamp P/N 8487
- 2" Post Standard Clamp P/N 8690
- 2" Post Wide Clamp P/N 8822
- 3" Post Standard Clamp P/N 8674
- 3" Post Wide Clamp P/N 8915

HOLD-IT CHART HOLDER

Simple and effective, this handy stainless steel clip holds charts right where you need them. Elastic strap attaches securely to leg, aircraft yoke, or visor.
 P/N 13-01759



CARRY-IT CORDURA TOTE CASE

This multi-functional tote case is made from black Cordura fabric and features 8 pockets and velcro closures. Holds radios, flashlights, pens, pocket PC, maps, charts & more.
 P/N 13-01757



AVIATOR'S NYLON HELMET BAG

U.S. Military issue.
 Size: 19"x 20". Color: Sage green
 P/N 13-03476



NELSON FLIGHT SEAT POUCH

• End cockpit clutter • Made of durable Cordura • Stores flashlight, fuel tester, flight guides, approach plates, charts, plotter, E6-B, sunglasses and more.
 • Available in black, AF blue, red, gray & olive drab
 Black P/N 13-31871
 Blue P/N 13-03005
 Gray P/N 13-31872
 Olive drab P/N 13-03006
 Red P/N 13-31870



NELSON AIRCRAFT DOCUMENT CASE

• Made of Cordura
 • Two compartments
 • Available in blue, gray, olive drab, orange & red.

- Orange.. P/N 13-03013
- Blue..... P/N 13-02932
- Gray..... P/N 13-02933
- Red P/N 13-02934



23 POCKET BIGMOUTH BAG

17 Multi-use pockets inside and 6 outside organize tools and accessories. Opens wide for easy access to bag's contents. Padded reinforced web carrying handles. 12"L x 8 1/2"W x 8"H
 P/N 12-00329



12 POCKET TRAYTOTE BAG - This bag has 2 pockets inside and 10 pockets outside with a 11"x 6" multi-compartment tray which slides securely into bottom of bag. Opens wide for easy access to contents and has reinforced web carrying handles. 12"L x 8"W x 12"H
 P/N 12-00163



14 POCKET TRAYTOTE BAG - This bag features 2 pockets inside, 12 pockets outside, with a 13.5" x 6" multi-compartment plastic tray slides securely into bottom of bag. Opens wide for easy access. 16"L x 9"W x 12"H
 P/N 12-00164

MILITARY STYLE TOOL BAGS

These tool bags are made of heavy-duty military-type tough 18oz./sq.yd. cotton duck with a water repellent mildew-resistant treatment. The mechanics Tool Bags have compartmentalized side pockets with flaps. Hardboard bottoms are completely sewn into each bag and are unexposed. All stitching is of heavy duty nylon thread and the handles are made from heavy military spec. webbing. All inside seams are bound to eliminate raveling of the fabric. Long-tab, self-locking slider. Color: O.D. Green. Available in 2 sizes:
 O.D. Green Small: 6" x 6" x 12" Bag P/N 13-02500
 O.D. Green Large: 5" x 5" x 16" Bag P/N 13-02600



TOOL WRAP

These tool wraps allow the builder or pilot to carry an assortment of small hand tools in a convenient roll-up tool bag. Available in small 9-pocket or large 15-pocket size. Color is normally dark blue or off-white depending on available material, but colors can vary. Small Tool Wrap P/N 13-01746
 Large Tool Wrap P/N 13-01747



UNIVERSAL BEVERAGE HOLDER

This Universal Beverage Holder made of billet aluminum installs easily in any thickness dash or instrument panel. Available in two styles, with square or oval face-polished surfaces, its compact design permits vast installation possibilities.
 Oval Face P/N 13-03792
 Square Face P/N 13-03793



SINGLE HEADSET BAG

Safe and convenient way to protect a single headset. Features foam padded single zipper compartment with convenient webbing handle. Made in USA. Size: 7"L x 4"W x 9"H. Color: Black.
 P/N 13-55010



AIRCRAFT DOCUMENT CASE

This durable, flexible blue cordura pouch is an ideal way to keep aircraft registration, insurance, log books, operating manuals, and other important documents all in one safe location. Measures 18"W x 12"H. Features top quality zipper along front side for easy access and location to mark your aircraft number on front. P/N 13-20065



LICENSE HOLDERS

Black leatherette with clear plastic window to display ownership certificates. P/N 13-07900 includes eyelet holes for mounting and metal plates to keep corners from fraying.
 4-7/8" X 6-7/8" P/N 13-07900
 7-1/2" X 8" P/N 13-17904
 5" X 7" P/N 13-17905
 5" X 14" Double Pocket P/N 13-17906



PILOT SUPPLIES



NELSON FIRST AID KITS

International Orange Case. Velcro hold-downs
10 FA Unit. Kit Contents:
• Blistex Burn Cream
• 1"x3" adhesive bandages
• First Aid Instruction Book
• 1/2" adhesive tape (2 rls)
• 24"x72" gauze compress
• Scissors
• Thermometer & compass
• Wire Splints
• 4" Bandage Compress
• PVP iodine wipes
• 2 Triangular Bandages
• Ammonia inhalants
First Aid Kit #1P/N 13-02944
First Aid Kit #2P/N 13-02945

CONVENIENCE BAG

Disposable urine & vomit bag. • Wide mouth. • No spill, cleanup, or odors • One-hand use
P/N13-02821



KEY CHAINS

Choice of:
"Remove Before Flight" ...P/N 13-02836
"I ♥ Flying".....P/N 13-02949
"I'd Rather Be Flying".....P/N 13-02950

REMOVE BEFORE FLIGHT KEYCHAIN

Red, "REMOVE BEFORE FLIGHT" is 11-1/2" in length. Great for your keys, ID, or badge. The "REMOVE BEFORE FLIGHT" is silk screened in white on red nylon. P/N 13-03822

AIRCRAFT FOR SALE BANNERS

Designed specifically for aircraft use, these banners slip right over your prop blades, moving in the breeze to attract attention-but will not rub against painted surfaces. Each banner is 9" x 23", made of heavyweight rubberized Nylon that is weather-repellent and resists tearing. Sold as a set of 2. P/N 5412.....

PROPELLER MOUNTED BANNERS

Two 28" x 8", white printing on red reinforced vinyl with business card pouch. Yellow, blue and white pennants, slides over prop, fastens with velcro.
For SaleP/N 13-06402
For Rent.....P/N 13-06635.....

FOR SALE PROP BANNER

Consists of three pieces. Each prop banner is 11" high X 22" long when mounted. Made of RED vinylized polyester with BOLD WHITE lettering. Unlike prop banners that are a sleeve which must be slipped over the prop blade only, these banners are split at the bottom and are held together with velcro. This allows the banner to be opened up and then wrapped around virtually ANY structural member of the aircraft
P/N 13-06014

PILOTS FREQUENCY REMINDERS

This little prompter is designed to allow the pilot (especially students) to pre-plan which frequencies will be used during a flight and hang this handy item close at hand in the cockpit. This is ideal when operating in a high density airport area. Helps eliminate cockpit clutter and searching for often used frequencies. P/N 13-04391.....

YOKE CLIPS

Clip this yoke on your aircraft so it does not interfere with movement of controls. Spring may be adjusted for smaller diameter shafts by pinching with pliers.

LARGE P/N 13-04392
SMALL P/N 13-04393

FLYING/SAFETY GLASSES

• Meets or exceeds ANSI requirements • Provides 99.9% protection against harmful UV radiation • High impact scratch resistant polycarbonate lens
• Adjustable temples for greater fit & comfort
• Replacement lenses
GrayP/N 13-02823
AmberP/N 13-02825

NELSON AILER-LOCKS



• 2 Sizes
• 13" RBF streamer
• Locks flaps, ailerons, elevators, or rudder
Ailer-Lock standard (4.25")

Ailer-Lock Large (10") P/N 13-02829
P/N 13-22705

NELSON "CESSNA" STYLE TAIL SKID



This easy-to-install tail (3 minutes) skid is designed to save the tail feathers on most single engine Cessnas. Made from 4130 aircraft steel, this tail skid fits Cessna 150, 152, 172, 177, and 182.

P/N 13-17010

COCKPIT EMERGENCY LIGHT



• Uses super power LED • 20,000 hrs "always on"
• 200 hrs low power or strobe • 20 hrs high beam
• Uses standard 9V battery • Available in 3 LED beam colors

Green.....P/N 13-02751
Red.....P/N 13-02928
White.....P/N 13-02929

APPROACH PLATE HOLDER

• 10 leaf • Flip-over (not accordion) • Size: 6"x 9" • Vinyl ..
P/N 13-02772

"REMOVE BEFORE FLIGHT" PITOT COVERS

Universal cover.....P/N 13-04396
Piper blade coverP/N 13-02946
3/4 pitot cover.....P/N 13-04395
5/8 pitot cover.....P/N 13-04394
Sm RBF streamerP/N 13-02818
Lrg RBF streamer.....P/N 13-02819
Nelson RBF StreamerP/N 13-04397

FUEL VENT COVER

The fuel vent cover is designed to fit most fuel vents, and will not pressurize the fuel system. The ribbon is nylon with a vinyl coating and silkscreened letters. P/N 13-02817

REMOVE BEFORE FLIGHT STREAMER

Red "REMOVE BEFORE FLIGHT" Streamer with white lettering. Measures 3" wide and 30" long. P/N 13-06238.....

ELECTRONIC AIRCRAFT PARKING WANDS

• Fluorescent coated diffuser enhances red light output • Used by US Air force • Up to 400 hours operation • 17" long • Uses (2) D batteries (not incl.) • Waterproof
P/N 13-08959

EMERGENCY STROBE

• Waterproof • USCG approved • Operates up to 60 hours • Uses D battery • Red lens available
StrobeP/N 13-02811
Mounting Tri-pod.....P/N 13-14016

STROBE / FLASHLIGHT

• 1 mile visibility • Waterproof to 100m • Flashes more than 45 times per min. for up to 10 hours • Powered by (2) AA batteries (not incl.) • Xenon bulb • Red lens included for flashlight end • International orange case • ABS plastic body. P/N 13-02809

PS

SEAT FOAM - FLIGHT SEATS

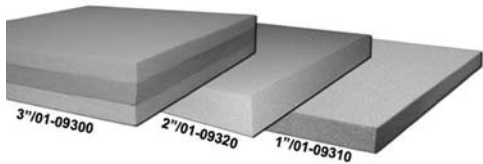
BACKSAVER FOAM



Backsaver foam is temperature sensitive, softening when it comes in contact with a warm surface; thus, in a seat cushion, the foam softens and conforms to the persons body. This provides even pressure distribution and unconstricted blood circulation, significantly reducing discomfort, even over long periods. In addition, Backsaver foam has excellent energy absorption properties, which have made it excellent for use in the U. S. space shuttle program and in military aircraft and helicopters. Pilots find that Backsaver cushions reduce their discomfort and fatigue, even on missions of 8 hours or more. Aircraft Spruce now makes Backsaver foam available to

the homebuilt and general aviation market.
 BACKSAVER FOAM 16" X 18" P/N 01-09325
 BACKSAVER 36" X 80" FOAM P/N 01-09330

CONFOR FOAM SEAT CUSHION



Temperfoam is the conforming foam cushion that was developed for the "Astronaut's Couch" back in the Apollo space program. Seat foam has the capability of

absorbing a tremendous amount of impact shock compared to common polyfoam and it is flame resistant. It is an excellent product that will give your seats enduring comfort that you never thought possible. It is not a soft seat, but it adapts to you for pressure- point-free comfort that is really incredible. The best universal cushion for aircraft use is a 3" T/38/T41/T47 laminate. Temperfoam is not currently FAA approved for certificated aircraft but is excellent for homebuilts. Some special sizes in 1", 2" or 3" thicknesses are available on special request.

1" x 16" x 18" P/N 01-09310 ea.
 2" x 16" x 18" P/N 01-09320 ea.
 3" x 16" x 18" P/N 01-09300 ea.

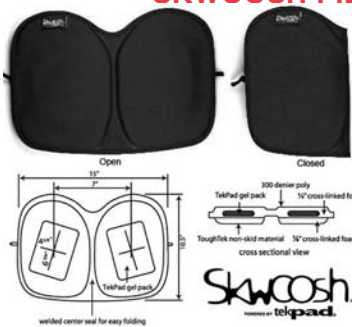
INFLATABLE LUMBAR SUPPORT



This inflatable air pillow can be installed just under the seat material and will give you the customized support just where you need it. A convenient palmsize pump and a release valve control the firmness of the lumbar support. The In-Flight Back Support is made of a heavy duty self-extinguishing neoprene rubber, specially designed to pass FAR 23.853 flame-test requirements.

One inflatable lumbar support
 P/N 13-01501.....
 Two Inflatable lumbar supports
 P/N 13-01821.....

SKWOOSH PILOT SEAT



Fly with SKWOOSH™ and say goodbye to numbness in your legs and rear. TekPad® gel technology delivers pressure relief for long flight comfort. The compact SKWOOSH™ Pilots's seat is designed specifically for flight personnel. It folds to fit in a chart case, carry on or just hang it from a roll-on. It has a durable 300 denier top fabric for comfort and convenient attached cord loops for hanging. The non-skid bottom makes SKWOOSH™ stay put, insuring no movement during

use, while it's low profile allows you to maintain normal seat position. So when you have to sit for a long time, in the cockpit or passenger cabin, count on SKWOOSH™ for comfort.

Specifications: • Model# P5544 • Weight: 8 oz. • Open Dimensions: 15" x 10½" x 1½" • Folded Dimensions: 7½" x 10½" x 1" • Color: Black • Non-Skid bottom • Convenient cord loops for hanging • Made in USA - Guaranteed Performance and Guaranteed Workmanship.
 P/N 13-05827.....

NELSON BOOSTER SEAT



Sit higher, and sit softer on 2 or 3 inches of high-density foam covered with durable, "breathable" Cordura. Made of USAF specifications, with segmented backrest. Really makes a difference on a long flight. Also available: 3 or 4-inch thick child's cushion that finally lets kids see outside, keeps them interested as well as comfortable during long trips. Both seat and cushion are available in either Air Force blue or red. Add B (blue), or R (red) after part number to indicate color.

Dimensions for all Nelson Seats: Back: Width - 16" Height - 17" Seat: Width - 15" Depth - 12"

| Description | Part No. | Price |
|-------------------------------------|----------|-------|
| Blue 2" Booster seat w/ 1-1/2" back | 13-02916 | . |
| Red 2" Booster seat w/ 1-1/2" back | 13-02917 | . |
| Blue 3" Booster seat w/ 1-1/2" back | 13-02918 | . |
| Red 3" Booster seat w/ 1-1/2" back | 13-02919 | . |
| Blue 3" Booster seat w/ 3" back | 13-02920 | . |
| Red 3" Booster seat w/ 3" back | 13-02922 | . |
| Child's Blue 3" Booster cushion | 13-02923 | . |
| Child's Red 3" Booster cushion | 13-02924 | . |
| Child's Blue 4" Booster cushion | 13-02925 | . |
| Child's Red 4" Booster cushion | 13-31861 | . |
| Blue - 4" Seat x 3" back | 13-31845 | . |
| Red - 4" Seat x 3" back | 13-31850 | . |
| Blue - 4" Seat x 1-1/2" back | 13-31855 | . |
| Red - 4" x 1-1/2" back | 13-31860 | . |
| Gray - 3" Seat x 3" back | 5204G | . |
| Red - 2" Seat x 4" back | 13-02863 | . |
| Red - 3" Seat x 4" back | 13-02864 | . |
| Green - 4" Seat x 1-1/2" back | 13-02866 | . |
| Blue - 4" Seat x 1" back | 13-02867 | . |
| Green - 2" Seat x 1-1/2" back | 13-02868 | . |
| Green - 3" Seat x 1" back | 13-02869 | . |
| Blue - 3" Seat x 1" back | 13-02870 | . |
| Green - 3" Seat | 13-02871 | . |

NORAL SEATS



This cushion is made with the finest materials available. It features a high back with a Lumbar Support for added comfort. The foam inside meets FAA FAR regarding fire materials. A strap is present for easy carrying and securing the cushion to the back of the seat when installed. Available in 2 sizes marked Type 'A' & Type 'B'. Label 'A' fits Cessnas 172/182/172 Cutlas /210 and other larger seats.

Label 'B' fits Cessnas 150/152, Piper, Archer, Warrior, Cherokee, and similar seats.

Available only in Black, Navy Blue, & Smoke Grey.

| Color | Part No. | Price |
|---------------------------------|----------|-------|
| 2" Seat Cushion - Type B | | |
| Black | 13-00323 | . |
| Blue | 13-00324 | . |
| Grey | 13-00326 | . |
| 3" Seat Cushion - Type B | | |
| Black | 13-00331 | . |
| Blue | 13-00332 | . |
| Grey | 13-00333 | . |
| 4" Seat Cushion - Type B | | |
| Black | 13-00338 | . |
| Blue | 13-00339 | . |
| Grey | 13-00341 | . |

| Color | Part No. | Price |
|---------------------------------|----------|-------|
| 2" Seat Cushion - Type A | | |
| Black | 13-00327 | . |
| Blue | 13-00328 | . |
| Grey | 13-00329 | . |
| 3" Seat Cushion - Type A | | |
| Black | 13-00334 | . |
| Blue | 13-00336 | . |
| Grey | 13-00337 | . |
| 4" Seat Cushion - Type A | | |
| Black | 13-00342 | . |
| Blue | 13-00343 | . |
| Grey | 13-00344 | . |

| Color | Part No. | Price |
|-----------------------------|----------|-------|
| 2" Seat Cushion only | | |
| Black | 13-00346 | . |
| Blue | 13-00347 | . |
| Grey | 13-00348 | . |
| 4" Seat Cushion only | | |
| Black | 13-00224 | . |
| Blue | 13-00226 | . |
| Grey | 13-00227 | . |

| Color | Part No. | Price |
|-----------------------------|----------|-------|
| 3" Seat Cushion only | | |
| Black | 13-00221 | . |
| Blue | 13-00222 | . |
| Grey | 13-00223 | . |

BLACK MAX COMFORTLITE SEAT



- * 18" Wide X 19" Deep x 26" High
- * 6061-T6 Aluminum Base and tubing.
- * Assembled with AN Hardware.
- * Material made from durable cordura nylon
- * Includes a large storage pocket in the back
- * Additional storage between pan and seat
- * Pivots down to make it easier to get in behind the seat on a tandem

P/N 13-05554.....



SEAT COVERS - AIRCRAFT SPRUCE APPAREL



AEROSHEEP AUSTRALIAN SHEEPSKIN SEAT COVERS

Aerosheep seat covers are manufactured from genuine Australian Merino sheepskins. Each cover is hand tailored to fit the particular aircraft seat and comes with a 5 yr warranty. The dense 1" fleece will not shed on clothing, and the snug fit allows for no slippage. Aerosheep seat covers are cool in the summer and warm in the winter, and protect seats from sun and wear. Fully lined, they are attractive, durable, and very comfortable. Easy to install without

removing the seat. Available in tan, pearl, regal, silver, bone, smoke, navy, and burgundy; free color swatches available on request. Furnished with FAA form 8110-3 (flammability compliance certification) and shipped Fed-Ex 3-day service from the factory within one week (Add \$15.00 for shipping). To order, specify aircraft year, make, model, and color choice. For reupholstered or non-standard seats, request special order form to measure seats.

P/N 13-01005 /pr.
Aerosheep Sample - Order a sample then return it for a full credit after you have selected a color and ordered your seat cover.

P/N 13-06584



AEROSHEEP SEAT CUSHION COVER ONLY

The new sheepskin product designed to appeal to pilots who may not be ready to invest in the fully fitted sheepskin seat covers. It is a sheepskin pad designed to fit on the seat cushion surface only. Available in tan, pearl, regal, silver, bone, smoke, navy, and burgundy; free color swatches available on request.

P/N 13-05604



WARMSEATS SEATS HEATERS

This do-it-yourself seat heater kit features dual zone heating (back and seat) with a built-in thermostat and high/low settings. Made by an OEM auto supplier, the kit uses carbon fiber (not wire) to provide quick and even flow heat. Universal fit and easy installation. Instructions included. Not FAA approved. P/N 13-03195..... ea

SPRUCE POLO SHIRT

SPRUCE POLO SHIRT - These are the same high quality polo shirts worn by the Aircraft Spruce Staff at Oshkosh, Sun 'N Fun and other airshows. Made from Dry-Excel™ close-hole Micromesh, polyester knit, with a fine gauge rib-trim collar. Three button front, open hem sleeves, and split side welts make these polos great for everyone. These polos feature the Aircraft Spruce logo on the left chest. Machine washable.



BLUE RIBBON SHEEPSKIN SEAT COVERS: NATURES OWN THERMOSTAT



The magic of 100% genuine sheepskin is quite simply that it will keep you cool in summer and warm in winter. No other natural or man-made fiber possesses the qualities of sheepskin. Whatever the temperature in your cockpit, sheepskin covers remain almost the identical temperature. Additionally, each hollow fiber absorbs up to 30% of its own weight in moisture. It keeps you dry, yet never feels wet itself. You avoid the heat and clamminess of vinyl, or even leather, because there's free flow of air between you and seat. Every cover is hand-made by master craftsmen from the finest chrome-tanned pelts, in colors to match or coordinate with any interior. Sold in pairs only, in 11 colors (request color samples when ordering). FAA Approved.

Available for the following planes: Beechcraft: Baron B-55, E-55, B-58, Bonanza V-35 (A or B), A-33, A-36, F-33A, A36TC. Cessna: 150, 152, 172, 177, 180, 182, 185, 210, 310, 340, 402, 414, 421. Aero Commander: 500, 600, 900, Piper: Archer, Cherokee, Warrior Tomahawk.

Specify year, make model and color choice when ordering. Car seat covers also available in same colors. Call for a price.
 Blue Ribbon Sheepskin Seat Covers (pair) P/N 7736.....
Sheepskin Samples - Order a sample then return it for a full credit after you have selected a color and ordered your seat cover.

P/N 13-05553

COLORS AVAILABLE

| | | | |
|-----------|----------|----------|---------------|
| Black | Navy | Charcoal | Metallic Blue |
| Oyster | Natural | Bamboo | Beige |
| Honey Tan | Oak | Mushroom | Creme |
| Silver | Mid Grey | | |

AIRCRAFT SPRUCE WINDBREAKER

These high quality, golf style pullover windbreakers are perfect for those chilly days on the course or at the airport. Color: Navy blue w/khaki trim and "Aircraft Spruce & Specialty Co" on left chest.

Medium..... P/N 13-01987.....
 Large P/N 13-01988.....
 X-Large..... P/N 13-01989.....
 2XL P/N 13-01990.....



AIRCRAFT SPRUCE T-SHIRT

Top quality 100% cotton shirt available in white or navy blue. These shirts feature Aircraft Spruce logo on the back and a small Aircraft Spruce Logo on the front left chest. A great looking shirt that will last for years. Order size by part no.:



| | White | Price |
|-------|--------------|-------|
| Small | P/N 13-02810 | . |
| Med. | P/N 13-02910 | . |
| Large | P/N 13-03010 | . |
| XL | P/N 13-03110 | . |
| XXL | P/N 13-03120 | . |

| MEN'S BLACK | | | WOMEN'S BLACK | | |
|------------------|----------|-------|-------------------|----------|-------|
| Size | Part No. | Price | Size | Part No. | Price |
| Small | 13-04729 | . | Small | 13-06507 | . |
| Med. | 13-04731 | . | Med. | 13-06508 | . |
| Large. | 13-04732 | . | Large. | 13-06509 | . |
| X-LRG | 13-04733 | . | | | |
| 2XLG | 13-04734 | . | | | |
| MEN'S WHITE | | | WOMEN'S WHITE | | |
| Size | PN | Price | Size | Part No. | Price |
| Small | 13-04730 | . | Small | 13-06513 | . |
| Med. | 13-01985 | . | Med. | 13-06514 | . |
| Large. | 13-01982 | . | Large. | 13-06515 | . |
| XLRG | 13-01979 | . | | | |
| 2XLG | 13-01976 | . | | | |
| MEN'S LIGHT BLUE | | | WOMEN'S NAVY BLUE | | |
| Size | PN | Price | Size | Part No. | Price |
| Small | 13-04728 | . | Small | 13-06516 | . |
| Med. | 13-01986 | . | Med. | 13-06517 | . |
| Large. | 13-01983 | . | Large. | 13-06518 | . |
| XLRG | 13-01980 | . | | | |
| 2XLG | 13-01977 | . | | | |

AIRCRAFT SPRUCE PATCH

This is an embroidered patch, oval in shape, and approximately 3-1/2", colors are Red/White/Blue.

P/N 13-02709



AIRCRAFT SPRUCE CAP

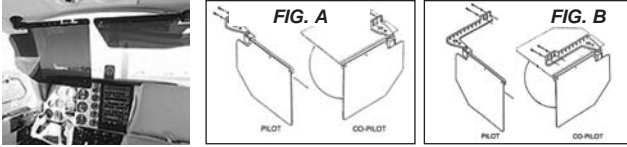
Our heavyweight 100% brushed cotton hat is perfect for aviators. Unlike other caps, ours features a no-button construction for comfort while wearing your headset. Low profile cap has aircraft design on front panel and Aircraft Spruce logo on back. A great looking top quality cap Stretch fit, one size fits all.

P/N 13-03895.....ea.

PS

SUN VISORS - PITOT TUBE COVERS

ROSEN SUN VISOR SYSTEM



Don't fly blind! Give yourself and your passengers that extra margin of safety. These transparent sun visors rotate and extend to offer complete cockpit protection from the sun. The oversize, tinted lens filters out 95% of the ultraviolet rays, reduces glare by 94% and heat by 86%. Distortion free. Fully STC'd and PMA'd. The system, which includes pilot and co-pilot visors, installs in minutes. (Exceptions: C-210 non-pressurized requires 1.5 hrs, C-152 requires rivnut installation by an A&P, C-177 req. 6-8 hrs.). Available for these aircraft. Visit our website for specs., installation, and application data.

| | |
|---|--------------|
| BEECH - Bonanza/Baron, standard..... | P/N 7568 |
| Bonanza/Baron, 3rd Axis option..... | P/N 7311 |
| Duke..... | P/N 7738 |
| 1900D..... | P/N 13-01926 |
| King Air..... | P/N 13-01927 |
| MOONEY - 1968 and later models original visors mounted on right or left side (not on center post)..... | P/N 7762 |
| PIPER | |
| Comanche, All models, standard..... | P/N 7809 |
| Comanche, Third Axis option..... | P/N 7924 |
| Cherokee, Center mount..... | P/N 13-01315 |
| Cherokee, swivel stud..... | P/N 13-01316 |
| Seneca..... | P/N 13-01317 |

| | |
|---|--------------|
| CESSNA | |
| 1980 and later - 170's to 206's (except 177's) Center Mount..... | P/N 7629 |
| All 150's and 152's. Prior to 1980 - 170's - 206's (except 177's) Side Mount..... | P/N 7006 |
| Cessna 180 3rd axis (1980 & earlier)..... | P/N 13-03173 |
| Cessna 180 3rd axis (1981 & later)..... | P/N 13-03174 |
| 210's w/o air cond. (Older 210's, see above)..... | P/N 7152 |
| P210's and 210's w/air conditioning..... | P/N 7426 |
| 177's..... | P/N 7582 |
| T303..... | P/N 13-01928 |
| 310s & 340s, special order to replace units with ball-joint cover style visor only (shown)..... | P/N 7687 |
| 337..... | P/N 13-01308 |
| 320..... | P/N 13-01311 |
| 350/400..... | P/N 13-06044 |
| 400..... | P/N 13-01312 |
| 412B..... | P/N 13-05180 |
| GRUMMAN - Cheeatah..... | P/N 13-01313 |

| | |
|---|--------------|
| RV-10 | |
| Rosen Sun Visor Set - RV-10..... | P/N 13-05695 |
| Rosen Sun Visor - Pilot Side..... | P/N 13-05696 |
| Rosen Sun Visor Set - Copilot Side..... | P/N 13-05697 |
| MAULE | |
| Rockwell Commander 114..... | P/N 13-03328 |

| | |
|---|--------------|
| OTHERS* | |
| Cirrus SR20 / SR22..... | P/N 13-03258 |
| Lancair IV..... | P/N 13-01934 |
| Pilatus P12..... | P/N 13-01936 |
| Homebuilders Universal surface mount..... | P/N 13-03175 |
| Homebuilders Universal tube mount..... | P/N 13-03176 |

Homebuilders Universal systems are specific order & built to your specs
ROSEN THIRD AXIS UPDATE KIT: This update kit will fit any Rosen system that does not come standard with third axis option (Piper systems, for examples, come with third axis stand). P/N 13-04014



ROSEN CREW SUNSHADES

A highly effective solution to excessive heat build-up in the cockpit. CrewShade is easily fixed to the side windows with (2) attached suction cups. Suction release tabs make repositioning quick and simple. The CrewShade folds and stores in the included 6" diameter carrying pouch when not in use. Shade dimensions: 14 1/2" x 17 1/2" P/N 13-06271

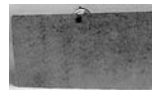


TINTED VISORS FOR CESSNA, BEECH, & PIPER

These tinted visors shade the sun and enable easier scan for traffic. They replace the stock visor and install in minutes using easy to follow instructions. Visors actually enhance visibility. Made in USA. Sold in sets of 2. FAA approved.

| | |
|---|--------------|
| Visors for Cessna 150/152, 177, 210, 337..... | P/N 13-14250 |
| Visors for Cessna 172/182, 180, 185, 205, 206..... | P/N 13-14255 |
| Visors for Beechcraft E33, E33A, E33C, F33, F33A, F33C, G33, H35, J35, K35, M35, N35, S35, V35, V35A, V35B, 36, A36, A36TC, B36TC, 95-A55, 95-B55, 95-B55A, 95-B55B, 95-C55, 95-C55A, D55, D55A, E55, E55A, 56TC, A56TC, 58, 58A Pre-1978 (early model)..... | P/N 13-00542 |
| Visors for Piper PA-28-140, PA-28-150, PA-28-160, PA-28-180, PA-28R180, PA-28-235 1964-1971..... | P/N 13-00541 |

DIM-IT MOVEABLE VISOR



You can keep moving your head to stay in the shade of your visor, or you can get a DIM-IT visor and move it to where you want it. It's a 6"x12" sheet of tinted Lexan that can be positioned on any window in the cockpit by means of the attached vinyl suction cup. (An optional self-adhesive adapter plate lets you attach it to porous surfaces as well.) Completely transparent and distortion-free.

| | |
|------------------------------------|----------|
| DIM-IT Moveable Visor..... | P/N 7172 |
| Adapter (for porous surfaces)..... | P/N 7113 |

MINI DIM-IT



Diminishes the intensity of direct sunlight, glare, and reflections. This little visor is made of high strength tinted Lexan and is distortion-free. Place the suction cup on window/windshield and press. P/N 13-01758

ADJUSTAVISOR



The Adjustavisor, a clip-on unit that virtually doubles the effective range of stock visors, adds contrast, and reduces glare and fatigue. Available with yellow or smoke polycarbonate lens with UV protection. There's also a suction cup model for aircraft with canopies. The cups are strong enough and the visor assemblies light enough that they stay attached to any window through most any maneuver. Size: 3.5"x 12". Clip-on (yellow).... P/N 13-03264
 Clip-on (smoke).... P/N 13-03263
 Suction (yellow).... P/N 13-03262
 Suction (smoke).... P/N 13-03261

PITOT TUBE COVERS



Spruce's own pitot covers feature an authentic, soft, bright red vinyl - will not fade, mildew resistant, made to Mil-C-20696. Remove Before Flight streamer. The durable leather-like bootie attaches simply with a Velcro strap and offers optimum protection from insects and weather. slip-fits over 5/8" or 11/16" dia. pitot tubes. P/N 15210

SLIP ON PITOT COVER - This high quality pitot tube cover also features the "Remove Before Flight" bright red streamer, but slip-fits over 1/4" or 1/2" dia. pitot tubes. Great looks & great protection! P/N 15220



ROUND CESSNA PITOT COVER - This yellow urethane pitot cover fits round, high-wing Cessna pitot tubes. Grooved fitting releases air pressure as the barometer changes. P/N 5139

PIPER PITOT COVER - This pitot cover is designed to fit the blade style pitot commonly found on piper aircraft. Small vent hole prevents pressurizing system. P/N 5740

REMOVE BEFORE FLIGHT RIBBON

This 3"x24" bright orange streamer with black letters features a grommet for a C ring to attach to anywhere on the aircraft. High visibility, fire resistant material. P/N 15200



DO NOT TOW STREAMER

17" Streamer, attach with Velcro, Color international orange. P/N 13-02004



ASA PITOT TUBE COVERS

Fit snugly over standard aircraft pitot tubes, and are vented to avoid pressurizing the pitot static system. Critical to safe operations, the cover keeps dirt, contamination, and insects from entering the pitot tube. A "remove before flight" streamer hangs off the cover as a prominent preflight reminder to pilots. Molded in the United States, the cover uses a heavy duty plastic material. Pitot Tube Cover 5/8" (small)..... P/N 13-02378
 (Fits: Cessna 300/400 series, Citation & Conquest, Beech singles & twins, Piper Navajo & Cheyenne, Mooneys, Mitsubishi, Lear Jets & Cirrus)
 Pitot Tube Cover 3/4" (large)..... P/N 13-02377
 (Fits: Cessna 150, 152, 172, 177, 182, 200 series, Skymaster & the Falcon Jet)

FUEL CAP COVER



The STAY SEALED cap is a patented fuel cap cover that locks onto the existing factory cap and seals to the surface of the wing. Designed and tested against heavy rains, strong winds, high temperatures, and extreme cold. It sealed out melting snow and ice, blowing rain and water from aircraft washing. *To be used anytime the aircraft is stored outside. The device MUST be REMOVED BEFORE FLIGHT.

| |
|--|
| Model SSCC fits the following: Cessna Series: 152, 172, 182, 206, 207, 210. Fitted with the raised metal fuel cap. P/N 05-03662 |
| Model SSCP fits the following: Cessna 120, 140, 150, 172 with recessed fuel filler opening P/N 05-03668 |
| Model SSPC fits the following: Piper Series: PA-28-140, PA-28-160, PA-28-180, PA-28-200, PA-32-260, PA-32-300 fitted with the raised metal fuel cap. P/N 05-03669 |



SUN SHIELDS – CANOPY COVERS



KENNON SUPER SUN SHIELDS

The most durable sun shield on the market has a clear polyester coating to protect the plexiglass windows. Heat can permanently damage the interior and avionics in your aircraft. The secret is a material with two surfaces of aluminum separated by trapped air. This combination reflects 97% of radiant heat, an insulation value of R-9 equivalent to two inches of fiberglass. Kennon Extra Firm shields fit snugly, and maintain their shape for a tight fit. They install in no time, and roll up for storage in compact, water-repellent bags. Weight is 1Lb. Available for most aircraft, specify year, make and model. For custom shields, specify exact size of windshield & windows. Also available for cars. Fabric edging insures snug fit & durability.

P/N 7672.....



BONANZA/BARON ADJUSTABLE SUN VISORS

Aerospace construction means they work flawlessly, plus they are very adjustable. Rotate them up and down, turn to cover the side windows and slide them in and out for coverage where you want.

P/N 05-03434.....



KENNON COWL PLUGS

Kennon cowl plugs are constructed from red Aqualon over 2" thick foam and feature a binding around the outer edge of each plug so there is a tight seal which fits snugly in the cowl. This lip prevents the plugs from slipping inside the opening. A safety strap goes around the prop so if by chance you forget to remove the plugs, the prop will remove them for you. These cowl plugs install easily and comes with their own storage bag. Specify aircraft make, model & year when ordering. Include aircraft registration number to be printed on plugs at no extra charge.

Single engine plugs..... P/N 13-14111.....
Twin engines plugs..... P/N 13-06212.....

KENNON HEATED COWL PLUGS

Kennon builds an electric heater attachment into its engine cowl plugs to provide the heat you need on those cold winter nights. Simply install the cowl plugs and plug in the heaters then bundle up your cowling with a Kennon insulated Engine Blanket and your engine will stay toasty until you are ready to fly again. The 50W heaters are energy efficient. Plus, you can remove the heater(s) and use the cowl plugs year-round to keep your air intakes clean and bird free. Keeps the air intakes clean and preheated. As with any preheat system, an insulated engine cover is recommended.

Single heater (Temps. down to 15°F)..... P/N 13-03171.....
Double heater (Temps. below 15°F)..... P/N 13-03172.....



CUSTOM FIT COWL PLUGS

These cowl plugs are tailored to fit popular Cessna and Beech single engine aircraft. High visibility yellow closed cell foam will not retain moisture. Printed on one side is "Remove Before Starting Engine", and the other is blank for the N#. They are joined by a nylon strap with a fluorescent orange Remove Before Flight flag. Please use following part no's. to specify aircraft.

C-150 (2 Hole Only)..... P/N 13-02620.....
C-172 (1965+)..... P/N 13-02625.....
C-182 (1972.5 - 1989)..... P/N 13-02630.....
B33-35..... P/N 13-02637.....

Universal kit w/square inlets (Sqr blocks you cut to fit)..... P/N 13-02645...../pr



KENNON WIND SPOILERS

Kennon Wind Spoilers are a strip of soft fiber filled tubes that attach to the wing to slow airflow over the top and to prevent lift. An airplane was built to fly, given a strong wind, the plane will fly without you and no tie down will restrain a flying airplane for long. During the stormy winter of 1998, over 200 airplanes were picked up and destroyed by strong winds. Kennon Wind Spoilers could have saved many of these aircraft. The wind spoilers cover the leading edge of the wings but not the tips, and most are about 14.5 ft long (per wing). Specify aircraft make, model, year when ordering.

P/N 13-14180...../pr

LANCAIR & ZENAIR CANOPY COVERS

These custom designed covers for the Lancair 235/320 and the Zenair Zodiac canopy are made of acrylic "Sunbrella" fabric and are available in blue, grey, or white. The 100% acrylic fabric won't shrink, fade, or rot. Nylon webbing straps assure secure fit while snap together buckles permit fast adjustment, fastening, and release. Side adjustments provide tight fit. These covers will protect your avionics and interior from sunlight and heat damage.

Lancair Blue Canopy Cover..... P/N 13-14110.....
Kennon ZenairBlue Canopy Cover..... P/N 13-14140.....

ENGINE INTAKE COVER



Kennon's Low Wing Cabin Cover covers the top of the cabin, the antennae and the entire window area. Kennon Cabin Covers are made from Sunbrella which is designed to withstand the sun's ultra violet rays. Sunbrella is the award winning UV resistant outdoor fabric. It is very soft and breathable so it is safe to use as a year round cover on any aircraft. It is a must for fabric covered wings and tails. Each cover is custom built for the specific year, make and model of aircraft. You will be asked for aircraft year, make, model, and registration number when ordering this item. There is an additional cost for the microfiber lining, and the cost varies based on aircraft.

Engine Intake Cover..... P/N 13-04047.....



KENNON DUST COVERS

The Kennon Dust Covers keeps dust, birds, and bird droppings off aircraft stored in hangars. Made from 210 Denier Nylon, the cover is soft, lightweight, and machine washable. Will not scratch the aircraft. It is easy to put on, with the elastic hem fitting around the nose, wing, and tail. Stores in its own storage bag and weighs only 10lbs. Available in sizes to fit any aircraft from homebuilt to military. Specify year, make & model of aircraft when ordering. Color: Black or Blue. **Stock**

Color is Black. For Special order color (blue or red) add .

Small for aircraft up to 21 ft long, wingspan to 31 ft. P/N 13-14145.....
Med. for aircraft up to 30 ft long, wingspan to 37 ft. P/N 13-14146.....
Light Twin up to 35 ft long w/wingspan to 40 ft. P/N 13-14147.....
Red or blue color covers..... P/N 13-06411.....

Other aircraft - Custom Made - Call for price

KENNON SUN BLOCKER AIRCRAFT COVERS



Kennon's Standard canopy cover is constructed from Sunbrella, an acrylic woven canvas in your choice of colors. Off white or light gray are the best choices as they absorb less heat. Provide Kennon with antenna measurements and we will tailor the cover so it fits neatly around antenna, OAT boot and ADF wires at no additional charge. Kennon's deluxe canopy cover is constructed from Sunbrella in your choice of colors and adds a satin lining to prevent sand and dirt from adhering to the fabric, which could later scratch your windows. Satin is superior to fleece and flannel liners because the satin is slippery and nothing sticks to it. Constructed from a woven acrylic canvas, Kennon Sun Blocker Aircraft Covers are guaranteed not to become unserviceable due to loss of color, strength from normal conditions, including sunlight, mildew, rot, or atmospheric chemicals. These covers repel water yet breathe so that they don't trap moisture. Specify aircraft make, model, and year, and number of side windows. Include aircraft registration number to be printed on cover at no extra charge.

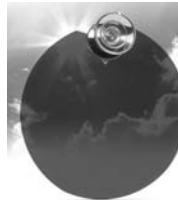
HIGH WING WRAP-AROUND COVER – Cessna120-210, Cessna 337; L-19; PA10, PA22 including Pacer, Tripacer, Cub, Super Cub, Colt, Luscombe, Stinson 108, Aeronca, Citabria, Maule, Rockwell 685/690/980, Aviat, Christian Husky, Lake Renegade
Deluxe..... P/N 13-14146-D.....

LOW WING WITH 3 SIDE WINDOWS – Earlier than 1971 Piper Cherokee VI, Piper, PA28 181, 200, 235 incl. Arrow, Archer, Warrior, Dakota, Aerospatale, Trinidad, Tobago, Piper Commanche (Some but not all...ASK), Aztec, Apache, Cessna 310 (exception to 2 window rule)
Standard..... P/N 13-14148-B.....
Deluxe..... P/N 13-14148-D.....

LOW WING WITH 4 SIDE WINDOWS – Piper Cherokee VI, Lance, Saratoga, Malibu, Seneca, Aerostar, Beech Baron 58, Beech 33, 36, Beech King , Air (Cockpit), Lear 2500, 3500 (Cockpit)
Standard..... P/N 13-14149-B.....
Deluxe..... P/N 13-14149-D.....

LOW WING WITH 4 TO 5 SIDE WINDOWS – Piper Navajo Chiefton, Cheyenne, Cessna 340, 402, 414, 425, 441, Citation, Beech Duke
Standard..... P/N 13-14150-B.....
Deluxe..... P/N 13-14150-D.....

SUN SPOTS



* Front & Side Windows, Passenger side Windows. Also place onto Existing Transparent Sun Visors for extended coverage & darker shade "D" * Two 5-1/2" dia. disks, easy handling & storage * Suction cup attachment, lightweight, 4 mills thick * Disk rotate 306° "B", for total of a 10" diameter * 2 disks overlap for double shade strength "A" * Separate disks for single shade strength "B" * Split disks for half & half shade strength "C"

P/N 13-06774.....

PS

COWL PLUGS - AIRCRAFT COVERS

COWL PLUGS



Cowl Plugs with attached "remove before flight" streamer for general aviation aircraft. Prevents bird and foreign objects from entering through the cowl. Comes complete with a linking lanyard and remove before flight streamer. Heavy duty cross linked construction and durable nylon hand sewn stitching

complete the set. Please specify aircraft make, model, & serial number when ordering. Single engine plugs are furnished with free embroidery and pitot tube cover. Twin cowl plugs include only the cowl plug and embroidery is available for an additional \$10.00

Single engine.....P/N 13-01742.....
Twin engine.....P/N 13-01743.....

PROPELLER SLINGS EXHAUST COVERS



Propeller Slings & Exhaust Covers keep your propeller secure and in place, eliminating any bearing damage caused by a free-spinning propeller with no lubrication. The integral exhaust covers protect the costly turbine wheel from debris & birds. Simple, quick one man operation. Please specify aircraft make, model, serial no. when ordering.

P/N 13-01744.....

INLET PLUGS



These protect your engine from foreign object damage, blowing dust and sand, birds and debris. Complete with remove before flight flag and easy pull handle for insertion and removal. Please specify aircraft make, model, & serial no. when ordering.

P/N 13-01745..... /eng

JET ENGINE COVERS



Made of extremely durable, water-proof and fire resistant Herculite, our covers are guaranteed for 10 yrs. Each set is hand crafted and sewn to order. Complete with storage bag and remove before flight flags. Please specify aircraft make, model, & serial no. when ordering.

P/N 05-04077.....CALL FOR QUOTE

ENGINE INTAKE COVER



Protect your engine from natural hazards which could cause serious in-flight problems. This economical design fits practically every single or twin, even homebuilts. The lightweight, fire-retardant mesh fabric will not blister or melt. After simple one-time installation of mounting hardware, cover snaps into place and secured with Velcro. Folds for easy storage. Complete with mounting hardware & "Remove Before Starting Engine" streamers. Also available: Bib that allows you to cover additional intakes.

Engine Intake Cover..... P/N 7148.....
Intake Cover Bib..... P/N 7133.....

KUVR**IT WHEEL COVERS



The KUVR**IT II Wheel Cover is designed to cover that precious investment, "your tires", on your airplane. The fabric is a vinyl-coated polyester that is fade resistant and California State Fire Marshall approved (#F-2310).

The weave breathes and yet provides 85% shade factor from the suns damaging ultra violet rays. It is easy to care for. Simply machine wash and just hang it to dry. The KUVR**IT II Wheel Cover is easy to use. Simply place the cover over your tires and adjust the strap to the desired tightness and lock into place. There are 3 sizes for your convenience:

Small fits tire size: 5.00 - 5/15 x 00-6.....P/N 13-03158.....
Medium fits tire size: 6.00 - 6/7.00-6.....P/N 13-03159.....
Large fits tire size: 6.50 - 8/8.50-10.....P/N 13-03160.....

REDWING TRAILING EDGE PROTECTIVE FOAM



RedWing helps prevent aircraft damage and head injuries. Just slide the foam onto the trailing edges of ailerons, elevators, rudders or flaps to protect these surfaces while tied down or in the hangar.. RedWing is also ideal for proecting landing gear doors, avionics

antennas, and winglets. The bright red color reminds the pilot to remove RedWing before flight, and RedWing is reuseable and unaffected by UV, water, or oils. Furnished in 3ft. sections which can be easily cut to smaller sections.

P/N 13-02566.....

BRUCE'S CUSTOM COVERS



Canopy Covers protect the glass, upholstery and avionics from the elements, stop leaky seals and keep the cabin cool. Canopy Covers also prevent vandalism and theft.

Bruce's Custom Covers makes canopy/cabin, engine, empen-

nage, propeller, wing and pitot covers as well as engine inlet plugs for virtually every model jet, airplane and helicopter. Covers generally cost \$350 - \$425, are 100% lined, and can be imprinted with your aircraft tail number. Each cover is custom made to order and lead time is generally three weeks.

For a complete technical sheet including prices, photos and information about covers for your aircraft, please call us at 1-877-477-7823.

Bruce's Custom Covers ordering Package..... P/N 13-04693.....FREE

KOGER SUNSHADES



The Koger Sunshade was developed to provide protection from the sun while flying an airplane that has a large bubble plastic canopy like the RV-6, RV-7, RV-8, RV-9 and many other types of aircraft.

Key Benefits

- Retractable to front or rear.
- Lightweight (9oz. for side by side RV models)
- Install in 1/2 to 1-1/2 hours depending on the model.
- Makes instruments more visible, and the cockpit more comfortable.

| Fits | Description | Part No. | Price |
|---|---|----------|-------|
| RV-8 | Size of shade: 15" wide by 46" long | 13-05657 | . |
| RV-6, 6A, 7, 7A, 9, 9A | Standard TIP-UP model Size of shade: 30" wide by 25" long | 13-05658 | . |
| RV-6, 6A, 7, 7A, 9, 9A | Standard SLIDER model Size of shade: 30" wide by 25" long | 13-05659 | . |
| Zodiac 600XL, Legacy, Cirrus SRS, Falco, Sport Crusier, EuroStar, Sting, Europa, etc. | LARGE TIP-UP model for larger bubble canopies | 13-05660 | . |
| Built to Order | LARGE SLIDER model with top center structure canopies are built to order. Size of shade: 34" wide by 35" long | 13-05661 | . |

TRISOFT WINGTIP/PROP TIP COVERS



* Avoid Accidents * Protect Employees and Aircraft * Reduce Insurance Claims * Remain In Compliance Trisoft Aircraft Covers Can Be Used As a Safety and Warning Device on Prop Tips The prop tips of an aircraft have proven to be a very dangerous area for aircraft personnel. Just place the aircraft covers on the prop tips to warn and protect personnel working or walking around an aircraft. Trisoft is a simple foam triangular cover that slips onto the corners of the prop tips, gear doors, wing flaps (in the lowered position), wing tips, and dorsal antennas, protecting aircraft personnel and aircraft during maintenance, pre-flight checks, cleaning, etc. Trisoft can be used on personal aircraft, corporate aircraft, commercial aircraft, military aircraft and helicopters. P/N 13-06003.....

SAFETY PROP TIPS



Reduce the risk of injury from a stationary aircraft prop by covering the tips with the Safe Prop Tip. This new safety device is made of thick foam covered in a bright red fabric. While the bright color calls attention to the prop to help prevent an accident bump, the thick padding adds protection in case someone does walk into the prop. Reflective tape on the front of the guard improves awareness at night, and an elastic ribbon, which holds the unit together, is a perfect place to hang the "Remove Before Starting Engine" streamer.

2 Blade..... P/N 13-03594.....
3 Blade..... P/N 13-03595.....

PS

PLANE SIGHTS REMOVE BEFORE FLIGHT

PLANE SIGHTS PITOT TUBE COVERS

Extremely obvious, very durable, and weather resistant pitot tube covers for every aircraft.

ANGLED PITOT TUBE COVER - Aircraft Type: Piston Powered Plane This durable, weather-resistant orange and yellow reflective cover fits virtually any size pitot tube. It stands out in daylight or darkness under all weather conditions, so it can't be missed. Large sewn-on Velcro tabs keep it securely in place under all conditions. Weight: 0.14 kg If length of the tube exceeds 6.75" and the diameter exceeds 7/8", then the Universal Pitot tube cover would be a better choice. As seen on the 2009 AOPA 'Let's Go Flying' Cirrus SR22 P/N 13-05611

UNIVERSAL PITOT TUBE COVER - Aircraft Type: Piston Powered Plane. This durable, weather-resistant orange and yellow reflective cover fits virtually any size pitot tube. It stands out in daylight or darkness under all weather conditions, so it can't be missed. Universal covers fit any length of tube from the smallest home built 1/4" tubes up to 7/8" jet probes. The versatile hook/loop Velcro strap with sewn-in rubberized trim allows the cover to be quickly and securely fastened to the pitot tube. Weight: 0.00 kg The inside diameter of the cover is 7/8". Guaranteed to work on any Cessna, Beechcraft, Cirrus, Diamond, Grumman or Mooney aircraft, as well as most Pipers and many light sport aircraft. P/N 13-05610.....

BLADE PITOT COVER - Aircraft Type: Piston Powered Plane Forgetting to remove a faded, dull and worn-out pitot tube cover can jeopardize the safety of you and your passengers. And when cold weather prevents you from installing your pinch-and-insert style blade pitot cover, ice and snow can contaminate your pitot system. Some blade pitot covers also cause damage to paint when the sleeve is being forced on and off. The highly conspicuous and very durable Plane Sights Blade Pitot Cover is a perfect fit for any aircraft with a blade-type pitot tube or piper gear extension mast. Properly installed, it's guaranteed not to blow off, fade in the sun or wear out for at least two years. Fits Piper, Katana, some Rockwell, late Grumman, Lake 250, and all other aircraft with a blade-type pitot tube. (As seen on the 2008 AOPA "Get Your Glass" sweepstakes aircraft) Weight: 0.15 kg Fits Piper, Katana, some Rockwell, late Grumman, Lake 250, and most other aircraft with a blade type of pitot tube. P/N 13-06016.....

PITOT TUBE PLUG (5/8") - Aircraft Type: Piston Powered Plane 5/8" inside diameter vented pitot plug with its unmistakably conspicuous Remove-before-Flight Streamer. ANSI-compliant and weather-resistant reflective streamer stands out equally well in daylight or darkness under all weather conditions. The plug is attached to the streamer's rugged black oxide coated zinc grommet with a galvanized steel ring, and is vented to prevent pressurization damage. This 5/8" Plug Fits Aero Commander, Twin Beach, Bonanza, Cessna 300/400/500, Conquest Series, Grumman, Lear, Mooney, Piper Cheyenne and Navajo aircraft. Weight: 0.04 kg 5/8"/0.625" (15.875mm) ID x 1.85" (38.10mm) P/N 13-06019

PITOT TUBE PLUG (3/4") - Aircraft Type: Piston Powered Plane. 3/4" inside diameter vented plug with its unmistakable Remove-before-Flight Streamer provides a perfect easy-on, easy-off solution. ANSI-compliant and weather-resistant reflective streamer stands out equally well in daylight or darkness under all weather conditions. The poly plug is attached to the streamer's rugged black oxide coated zinc eyelet with a stainless steel ring. This 3/4" plug Fits Cessna 150, 152, 172, 177, 182, 200 series, and 337 models. Weight: 0.04 kg 3/4"/0.75" (19.05mm) ID x 2" (50.80mm) useable length P/N 13-06018.....

LIGHT SPORT PITOT PLUG KIT - Aircraft Type: Piston Powered Plane. Light Sport/Homebuilt Pitot Plug Kit provides a perfect fit for many homebuilt pitot tubes, light sport pitot tubes, and aircraft fuel vents. The kit includes several vented plugs so it even works with double-tube systems and is guaranteed not to pressurize your pitot static system. ANSI-compliant and weather-resistant reflective remove-before-flight streamer stands out equally well in daylight or darkness under all weather conditions. The kit comes complete with three different-sized pitot tube plugs, a unique streamer, and two rust-resistant coated triangle rings. **WARNING: CHECK WITH YOUR AME AND CONSULT YOUR OWNER'S MANUAL BEFORE USING A FUEL VENT PLUG.** P/N 13-06020.....

PLANE SIGHTS AIRCRAFT MARKERS & STATIC WICK COVERS

Prevent hangar rash and broken static wicks

STATIC WICK COVER SET (TUBE STYLE 7") - Aircraft Type: Jet. A lower priced alternative to Static Wick Markers. They protect static wicks from damage on the ground and make wing/elevator tips more obvious, preventing hangar rash. Slide these round style covers on for a tight weather resistant fit on Citations and other jets. Weight: 0.04 kg Round, tubular poly cover, 0.310" x 0.450" x 7.000" Long. *Shock cord lanyard not included P/N 13-06775.....



STATIC WICK COVERS (SMALL ID X7") - Aircraft Type: Jet. Installed and removed in seconds, Static Wick Covers help prevent delays and inconvenience due to hangar rash. Extremely obvious and very durable Static Wick Covers make these vulnerable parts highly visible by day or night. Slide these round style covers on for a tight weather resistant fit on your Bombardier (Challenger & Global Express) or Hawker/Beechcraft and many other jets. If necessary cut with scissors to desired length. Weight: 0.20 kg Fit's over static wick part #'s: Chelton 2-17SC-1, Chelton 2-11SC-1, MIL-9129D, DG17770. Fits Bombardier, Hawker/Beachcraft and others P/N 13-06777.....



STATIC WICK COVER (SQUARE STYLE) - Aircraft Type: Jet These Square Style Static Wick Covers protect, usually yellow pronged static wicks from damage on the ground and make wing/elevator tips more obvious, thereby preventing hangar/ramp rash. Slide these rectangle covers on for a tight weather resistant fit on Falcon, Hawker, Beechjet, older Lear Jet and many other static wicks. Weight: 0.21 kg Includes three (3) Static Wick Covers per package Square Poly, 0.75"x0.25"ID x 3.50" Long, (in stock) (also available by special request, 5.25" length sleeves) Standard two year warranty applies. *Shock cord lanyard not included P/N 13-06775.....



UNIVERSAL AIRCRAFT MARKER - Aircraft Type: Piston Powered Plane. Highly reflective markers make vulnerable wing and elevator tips clearly visible under all conditions, and their projecting "proximity fuses" warn that something is too close before damage occurs. Fit all aircraft from Airliners to light sport aircraft, including models with static wicks and strobe lights. For aircraft with tip tanks, the wing marker opening fits over one end of the tank. A full set stows easily under most aircraft seats. Once initial fitting is done, the markers can be installed and removed in seconds during routine pre- and post-flight walk-arounds. Weight: 0.08 kg Package Contents: Two (2) corner marker pieces, two (2) harness pieces, two (2) marker fuses, four (4) 54" lengths of shock cord with cord hook ends, and four shock cord hook ends for assembly. P/N 13-05603.....



PROP MARKER, 3 BLADE - Aircraft Type: Piston Powered Plane. Featuring light reactive trims and tapes, these highly reflective Prop Markers are made to improve the visibility of your prop and aircraft day or night, helping you prevent the unexpected depreciation of your plane. Easily installed and removed in just seconds, adding virtually no additional time to your walk around. This prop marker fits aircraft such as a Cirrus SR22, Cessna 206, Cessna 182, Piper Malibu, Beech Bonanza, Beech Barron or similar three blade aircraft with medium size nose cone. Weight: 2.60 kg. Medium Cone P/N 13-05607..... Large Cone P/N 13-05608.....



PROP MARKER 2 BLADE - Aircraft Type: Piston Powered Plane. Made to improve the visibility of your prop and aircraft day or night. Prop Markers are easily installed and removed in just seconds, adding virtually no additional time to your walk around. Made from UV resistant Sunbrella, custom bonded with a soft, non-abrasive inner fabric. Quick and easy storage without tangling. Weight: 0.30 kg Small..... P/N 13-05605..... Medium..... P/N 13-05606..... Large P/N 13-05681.....



TURBO PROP TIE - Aircraft Type: Turboprop. Fits most Turbo Props including Caravans, Beech 1900s, King Airs and others. An adjustable heavy duty 1/2" shock cord and metal hook allows the versatile design to work on so many turbo prop aircraft. Also allows our Prop Tie to Integrate with existing cowl plugs and exhaust covers. For any Turbo-Prop up with to 10" wide blade. Comes with 36" of HD 1/2" size adjustable shock cord and two stainless clips. P/N 13-06778.....



REMOVE BEFORE FLIGHT STREAMER - Aircraft Type: Piston Powered Plane. ANSI-compliant and weather-resistant reflective streamer stands out equally well in daylight or darkness under all weather conditions. The cord is attached to the streamer with a rugged black oxide coated zinc eyelet. T Package Contents: Streamer - 12.25" long x 2" wide, Comes with two metal rings included) P/N 13-05612.....



DIAMOND STALL WARNING PLUG - Aircraft Type: Piston Powered Plane Diamond recommends that operators of their DA40 and DA20 aircraft plug the stall warning air inlet holes on these aircraft while they're parked on the ground. Fits any Diamond DA40 or DA20, one way or the other. ANSI-compliant and weather-resistant reflective remove-before-flight streamer stands out equally well in daylight or darkness under all weather conditions. P/N 13-06830.....

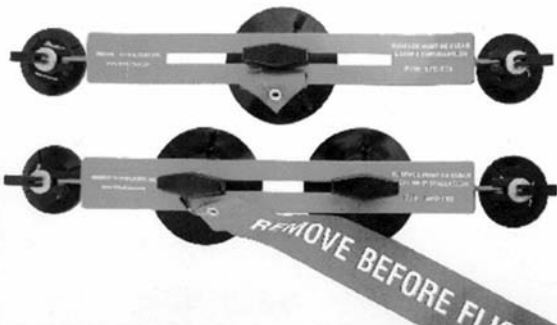
AIRCRAFT COVERS - AIRCRAFT LOCKS

REMOVE BEFORE FLIGHT STREAMER



2-1/4" wide, 17" long red polyester fabric with white writing: "Remove Before Flight" P/N 13-01458.....

UNIVERSAL STATIC PORT COVERS



The SPC101 and SPC102 are essentially the same product, built on the same platform. The SPC102 has two protective covers in line rather than one, for applications where redundant static ports are installed in line. Features: * An inexpensive, yet very effective alternative to other covers and plugs * Universal design to fit most aircraft * Lightweight entire assembly weighs less than 1/2 pound * Attaches with heavy duty lever cups designed to lift 40 lbs. each * No fuselage modification required * Prevents the possibility of any damage to static ports by being an externally mounted cover * Malleable light gauge aluminum easily conforms to virtually any surface contour * Adjustable to allow for attaching lever cups on or around decals and pin striping * Installed at temperatures from -20°F to 110°F * TESTED AND APPROVED!
SPC-101.....P/N 13-06723.....
SPC-102.....P/N 13-06724.....

PITOT COVERS

Avoid costly damage to your pitot-static system. Protects from dust, insects, wind and other foreign matter. Will not pressurize pitot-static system.

MODEL 4602 - Fits Piper. Katana. some Rockwell, and late Grumman aircraft. **REMOVE BEFORE FLIGHT** P/N 13-06395.....

MODEL 4935 - Bootie Type, all Naugahyde, white boot, red with white printing, 2" x 16"..... P/N 13-06397.....

LJR STREAMERS

5811 "OUT OF SERVICE" - 3" x 24", yellow printing on red reinforced vinyl with grommet and ring. 2" securing strap with grommet and velcro. P/N 13-06399.....

5813 "DO NOT TOW" - 3" x 16", yellow printing on red reinforced vinyl with grommet and ring. 2" securing strap with grommet and velcro. P/N 13-06401.....

4604 "REMOVE BEFORE FLIGHT" - 2" x 16", white printing on red reinforced vinyl with grommet and ring. P/N 13-06396.....

PITOT TUBE INSTALL TOOL



This tool was developed, in response to fleet owner and FBO requests. They were having experienced difficulty installing Covers onto high wing Pitot Probe locations, e.g., Cessna Caravans, Bush aircraft with Tundra tires, float planes and amphibians. In field trials it was found that this tool is also very useful to install-remove the same Covers onto over-the-nose Pitot Probes, of Very Lite and commercial jet aircraft! Features: * View-Through cover grippers for easy install * Low mass for control in windy conditions * Ergonomic shape to reach high wing, and most over-the-nose mounted probes * All weather non-slip handle gripP/N 13-06672.....

AIRCRAFT WINDLOCK



The Wind-Lock is designed to attach to an aircraft's controls inside the cockpit. The non-ridged mechanism keeps tension on the Elevators, holding them in the full down position. This position also allows moisture to drain from inside the control surface. It also holds the Ailerons in a streamlined position. As the wind gusts, resistance is applied. The harder the wind blows, the more resistance is applied to the controls. When the wind dies down, the Wind-Lock allows the Ailerons to return to their normal position. As the load is reduced, the tensioning mechanism reduces pressure on the control yoke. P/N 05-04044.....

AMC AIRPLANE CONTROL LOCK



Rather than tying your seat belt to your controls, try AMC's new Airplane Control Lock. This lightweight control lock will stop your control surfaces from moving with the winds and will also prevent damage to your controls such as bending. This new Control Lock is lightweight and easily stored.

Small Cessna P/N 13-02851.....
Cessna 206 P/N 13-03166.....
Cessna 210..... P/N 13-03165.....
Cessna 337..... P/N 13-03167.....



KENNON GUST LOCKS

Locks flaps, ailerons, elevator or rudder securely. Made from special weather resistant, high density, closed cell foam with a nylon eyebolt! Won't scratch. P/N 07-01329.....

PAD-LOK CONTROL SURFACE LOCK



Like it says, a padded lock. Effectively locks control surfaces while the padding compresses to the proper configuration and protects the surface finish. Padding won't absorb water. Hard-to-miss Dayglo color, plus yarn streamers. Wt. 10 oz. P/N 13-22700.....

SAF-T-STOP



Saf-T-Stop is an auxiliary seat stop mechanism approved by the FAA for use with Cessna seat track A.D. #87-20-03. Installs easily, sliding over seat track. Approved for: Cessna 150, 152, 172, R172, 175, 180, 182, 185, 190, 205, 206, 207, 210, 303, 337. Not a seat lock, Saf-T-Stop is designed to restrict rearward motion if the seat lock fails. P/N 13-18510..... /pr

SAFETY FOOT STOP SEAT RESTRAINT FOR CESSNAS



Safety Foot Stop provides extra insurance against loss of aircraft control due to a sudden aft movement of the seat due to excessive wear of the seatrail holes. Should the pin not engage in the rail hole, Safety Foot Stop will still prevent the seat from moving aft. Can be owner installed without a form 337 or STC in single engine Cessnas. Comes complete with all hardware and detailed instructions, and installation time is one hour per seat. One seat..... P/N 05-03390.....

PS

AIRCRAFT LOCKS

PROP LOCK CHAIN



The THEX50 is a "T-HEX" maximum security chain 5 ft in length with hardened 10mm hexagon shaped links. Hexagon shaped case hardened trip heat treated super chain. This heavy duty Prop Lock Chain is the perfect way to insure the security of your aircraft, particularly at remote or foreign airports. The hexagon shaped, heat treated heavy duty chain can endure over 10 tons of cutting force, insuring your aircraft against theft. A black nylon cover over the chain protects your aircraft from the chain when in place. The Prop Lock Chain is 5 feet long and weighs 121lbs. P/N 13-05182.....

WHEEL CHOCK LOCK



This innovative aircraft security device clamps to the wheel which prevents theft of the aircraft, while the built-in chock prevents the wheel from rolling forward when parked. The lock and chock are yellow, while the red rubber coated arms protect the finish of the wheel. Fits any type of wheel up to 12" wide. Lifetime warranty. P/N 13-06141.....

YORK GUST-LOK™



The York Gust Loks the ultimate protection for your plane from wind and theft. It locks in the control surfaces in a neutral position and prevents damage to control surfaces and tail caused by wind gust loads. It is welded steel, fully adjustable, is lightweight, and features a powder coat finish. The York Gust Lok is compact for easy storage and is quick and easy to use. Wt: 2.2 lbs.

CONTROL WHEEL AIRCRAFT

| Aircraft | Part No. | Price |
|--|----------|-------|
| PA-28, PA-32, PA-24, PA-30 & PA-39, PA-32R, PA-34 & PA-44 | 13-00855 | . |
| Commander 112 / 114 | 13-32730 | . |
| Mooney, Grumman Goose, Maule (Tricycle gear & Seaplane) PA-23, & Grumman American, Myers 200 & Commander 200 | 13-00863 | . |
| Cessna Single engine 150' & 172's, Helio Courier, 295/395 | 13-00864 | . |
| Cessna Single engine 180, 206 & 210's fixed & retract gear & Cessna 337 | 13-00865 | . |
| Aerostar, Commander 500, Beech Baron, Bonanza, Duke & 18/C-45, Lake L-A-4 (except Renegade) | 13-32790 | . |
| Cessna Tailwheel, Stinson, Beech Staggerwing | 13-32800 | . |
| Lake Amphibian | 13-32820 | . |
| Beech King Air | 13-32830 | . |
| Cessna 310's | 13-32840 | . |
| Aeronca Chief 508, Taylorcraft BC 12-D, Stinson 108 & 108-1 | 13-32850 | . |
| PA-38 | 13-32860 | . |
| Maule (Tailwheel) | 13-32871 | . |
| Piper PA-31, Chiefain, Navajo, Chyenne | 13-32880 | . |
| Socata (Trinidad), Grumman Widgeon | 13-32890 | . |
| Seawind | 13-32885 | . |
| Dehaviland Beaver | 13-00866 | . |
| Cessna Twins (except 337 & 310) | 13-00867 | . |
| Piper Malibu | 13-00868 | . |

STICK CONTROL AIRCRAFT

| Aircraft | Part No. | Price | Aircraft | Part No. | Price |
|--------------------------------|----------|-------|--------------|----------|-------|
| J3 w/Shin Klocker Tubes | 13-00871 | . | Husky, Pitts | 13-00880 | . |
| Piper PA-12 | 13-00872 | . | Micco | 13-00881 | . |
| Piper PA-16 | 13-00873 | . | Piper J-4 | 13-00882 | . |
| Piper PA-11 | 13-00874 | . | Swift | 13-00883 | . |
| Piper PA-14 | 13-00875 | . | RV-6 | 13-00884 | . |
| Piper PA-15/17 | 13-00876 | . | Luscombe | 13-00885 | . |
| Piper PA-18 & J3 Shin knockers | 13-00877 | . | Kit Fox | 13-00886 | . |
| Piper PA-20 | 13-00878 | . | Waco | 13-00887 | . |
| Champ & Citabria | 13-00879 | . | Lancair IV | 13-00888 | . |
| | | | Bellanca | 13-06114 | . |
| | | | Glastar | 13-06123 | . |
| | | | YAK | 13-00891 | . |

YORK ACCESSORIES

Do not throw away warning flag (included with each Gust-Lok™, but also sold separately).....P/N 13-00869.....

AIRGIZMO UNIVERSAL GUST LOCK



If you fly for very long you will quickly realize the importance of locking your control surfaces when leaving the plane outdoors. Finally we have a solution. The AirGizmos Gust Locks are designed to quickly lock virtually any control surface securely. Its bright color and integrated flag reminds you to remove before flight. The rubber cushions ensure that your finish will be protected. They are lightweight and portable. Perfect for carrying in the plane wherever you go.

P/N 13-06139.....

AVIATION PROP LOCK



The Prop Club® inhibits flight by creating an out-of-balance condition. Made of tempered steel, The Prop Club® is an anti-theft device that locks securely onto the propeller at the hub via a four-digit combination. The small Prop Club® has a compressed opening range of 4-1/4" to 5-1/2" (wt: 2.4 lbs) and the large Prop Club® has a compressed opening range of 6" to 8" (wt: 2.8 lbs). As long as the Prop Club® can attach to the base of the prop within this range, and the closed dimensions are smaller than the widest part of the prop, The Prop Club® will remain securely attached to the propeller hub. It will not work on props that maintain the same width from base to tip.

Small Prop Club P/N 13-03378
Large Prop Club P/N 13-03379

THE ALPHA WHEEL LOCK 2000



The Alpha Lock 2000 adjusts to virtually any wheel size in seconds and completely immobilizes the aircraft or vehicle wheel from rotating or turning. The lock is pick and drill resistant and cannot be frozen with freon. Soft, coated arms will not mar or scratch wheels and rims. Furnished in bright red color to warn thieves, weather resistant, and carries a 2-year warranty. Excellent for locking aircraft, autos, trucks, trailers, boat trailers, motorcycles, RV's, etc. Locks anything on wheels! Wt: 8 lbs.

P/N 13-00436

THE PLANE LOCK



For Cessna C-172-210s, except for the C-177. Prevents the wind from popping your doors open and provides an added measure of security against break-ins. No tools or STC required. From outside the aircraft, the pilots door is locked by reaching through the window (prior to closing it) and pushing down the door safety handle. Then, slip the Plane Lock over the window sill and lock the window shut. P/N 13-03386

AIRCRAFT THROTTLE LOCK



Protect your aircraft from theft! This throttle lock is recommended by the International Aviation Theft Bureau, Avemco Insurance Co., AOPA and other insurance companies. Available for vernier or non-vernier throttle. Vernier Lock.....P/N 13-08000
Non-Vernier Lock.....P/N 13-08100

SKYLOK



Skylock is an inexpensive throttle lock for aircraft with Cessna type push-pull throttles. The device will accept shafts up to .375" diameter, and is made of heavy-gauge cadmium plated steel. Skylock affords great peace of mind to aircraft owners at very little cost. Just put in place after every flight, secure with your own favorite padlock, and your throttle cannot be moved! Simple, but it works. P/N 13-18500



ANTI-THEFT LOCK FOR BONANZAS

Built for those incomparable Beechcraft. All have FAA STC/PMA as applicable. The rugged, locksmith quality key lock combines forces with hardened steel pins embedded in the lock body that roll to defeat cutting. Bright red color, easy to use, installs in just seconds. Patent Pending.

P/N 05-03435

PIPER THROTTLE LOCKS



Don't damage your aircraft by using a propeller lock. It happens more often than you think. Someone accidentally turns the key with a propeller lock installed. Usually it something innocent like taxiing the plane to the maintenance hangar or to the wash down area.

The owner or lineman jumps in the plane without doing a pre-flight, after all you're not planning on flying, you just want to move the plane...but all it takes is a turn of the key to damage a propeller, cowl or bent the crankshaft on the engine. FEATURES: •Prevents unauthorized use of your aircraft •Locks the throttle, mixture & propeller controls •You cannot start or operate the engine & propeller with the lock installed •Key lock, includes two keys •Installs and removes in seconds •No holes to drill, no modifications to aircraft •Strong steel construction •Safety yellow color •Available in three sizes for Piper aircraft •Fits aircraft having a throttle quadrant with a tubular horizontal throttle knob (does not fit aircraft having a round throttle knob).

| Description | Part No. | Price |
|---|----------|-------|
| Model #7700 Fits four seat, single engine Piper aircraft with a throttle quadrant | 13-04240 | . |
| Model #7710 Fits six seat, single engine Piper aircraft with a throttle quadrant. Does not fit all Malibu aircraft. | 13-04241 | . |
| Model #7720 Fits Piper Seneca & Seminole twin engine aircraft | 13-04242 | . |

IMPORTANT: The #7720 does not fit: Apache, Aztec, Twin Comanche, Navajo, Aerostar. The lock fits aircraft having a throttle quadrant with a tubular horizontal throttle knob. The lock does NOT fit aircraft having a round throttle knob or ball.

FIRE EXTINGUISHERS – RESCUE EQUIPMENT



H3R AVIATION FIRE EXTINGUISHERS

The FAA recommends and/or requires Halon fire extinguishers on aircraft. H3Rs Halon fire extinguishers are the extinguishers of choice in the aviation industry. They cause no mess or damage, and do not require taking a plane out of service for clean-up; a costly process for both the aircraft owner and insurance carrier. The heat-seeking quality of the Halon gas makes it a superior fire fighting agent.

DISPOSABLE, LOW-MAINTENANCE HALON 1211-1301 BLEND -

Contain a proprietary blend of the "liquid streaming agent," Halon 1211, and the gaseous "total flooding agent," Halon 1301. The blend's power lies in the Halon 1301, which is both a firefighting agent and a propellant. Low maintenance and non-rechargeable. Lightweight aluminum canister Disposable. Tested to ANSI/UL 711 and UL 1093. Meets DOT requirements Meets the requirements in Advisory Circular 20-42C, "Hand Held Extinguishers for Aircraft" and/or NFPA 408, "Standard for Aircraft Hand Portable Fire Extinguishers" 12-year shelf life

RECHARGEABLE, STURDY INDUSTRY-STANDARD HALON 1211 -

Required on commercial transport aircraft. Although classified a "liquid streaming agent," Halon 1211 also performs remarkably well as a "total flooding agent," seeking out and extinguishing fires in inaccessible places. A 6-year maintenance and 12-year hydrostatic test are required. Rugged steel cylinder. Pressure gauge enables easy confirmation of charge. Tested to ANSI/UL 711 and UL 1093. Meets DOT requirements. Meets the requirements in Advisory Circular 20-42C, "Hand Held Extinguishers for Aircraft" and/or NFPA 408, "Standard for Aircraft Hand Portable Fire Extinguishers"

| HALON 1211-1301 BLEND UNITS | Part No. | Range | Price |
|-------------------------------------|----------|--------|-------|
| RT A400 - 14 oz. (UL Rating 2B:C) | 13-07650 | 4-6 ft | |
| RT A600 - 1.2 lb. (UL Rating 2B:C) | 13-07655 | 6-8 ft | |
| RT A1200 - 2.5 lb. (UL Rating 5B:C) | 13-07660 | 7-9 ft | |

| HALON 1211 UNITS | Part No. | Range | Price |
|--------------------------------------|----------|----------|-------|
| A344T - 1.3 lb. (UL Rating 2B:C) | 13-01993 | 9-12 ft | |
| A344TC - 1.3 lb. (UL Rating 2B:C) | 13-02546 | 9-12 ft | |
| C352TS - 2.5 lb. (UL Rating 5B:C) | 13-01966 | 9-15 ft | |
| C352TSL - 2.5 lb. (UL Rating 5B:C) | 13-02547 | 9-15 ft | |
| C354TS - 3.0 lb. (UL Rating 5B:C) | 13-02548 | 9-15 ft | |
| A1600 - 3.5 lb. (UL Rating 1A:5B:C) | 13-07665 | 8-10 ft | |
| B355T - 5.0 lb. (UL Rating 10B:C) | 13-02545 | 9-15 ft | |
| B369 - 15.7 lb. (UL rating 1A:10B:C) | 13-02557 | 12-18 ft | |
| B371 - 19.9 lb. (UL rating 2A:40B:C) | 13-02558 | 12-18 ft | |

FIRE EXTINGUISHER BRACKETS

BKT400 - Brackett for the RT-A400 Fire Extinguisher
P/N 13-06166.....

BKT600 - Brackett for the RT-A600 Fire Extinguisher
P/N 13-06167.....

BKT1200 - Brackett for the RT-A1200 fire Extinguisher
P/N 13-06168.....

845 - Brackett for the A344T Fire Extinguisher
P/N 13-06170.....

845 - Brackett for the A344TC Fire Extinguisher
P/N 13-06171.....

817S - Brackett for the C352TS, C352TSC, C354TS Fire Extinguisher
P/N 13-06172.....

BKT1600 - Brackett for the A1600 Fire Extinguisher
P/N 13-06169.....



H3R BILLET MOUNTS

H3R Performance hand held 1 lb. and 2.5 lb. fire extinguishers come standard with aviation style mounting brackets. Stylish and versatile billet mounting accessories are also available. Band clamps fit 2.6" or 3.0" diameter fire extinguishers, and can be combined with the flat surface mount or either of the two roll bar mounts. Available in polished and brushed finishes. One year limited warranty.

Polished - Band clamp for 1.0/1.4 lb. fire extinguishers
P/N13-06062.....

Brushed - Band clamp for 1.0/1.4 lb. fire extinguishers
P/N 13-06065.....

Polished - Band clamp for 2.5 lb. fire extinguishers
P/N 13-06066.....

Brushed - Band clamp for 2.5 lb. fire extinguishers
P/N 13-06067.....

Polished - Flat surface mount P/N 13-06068.....

Brushed - Flat surface mount P/N 13-06069.....

RECHARGEABLE, DURABLE EPA-APPROVED HALOTRON 1™

While it is less powerful pound for pound than Halon 1211, Halotron 1 offers all of Halon 1211's clean agent benefits, and Halotron 1 is less damaging to the ozone layer. H3R Aviation offers two Halotron 1 fire extinguishers: one FAA-approved unit for aircraft use and one wheeled unit for the flight line/ramp. These rechargeable extinguishers have pressure gauges and require a 6-year maintenance and a 12-year hydrostatic test. P/N 13-02562

FIREFLY PLUS FLASHLIGHT/STROBE



The Firefly Plus is a flashlight/emergency locator strobe which is visible for over one mile. The operating life of the strobe is 10 hours, and 2 hours for the flashlight (continuous). Firefly Plus operates on 2 AA batteries (not included) and made of durable ABS plastic. Waterproof & weighs 4 oz. Size: 2" dia. x 5-3/8"h. Excellent addition to any aircraft or home emergency kit. P/N 13-54050

C-STROBE LIGHT

The C-Strobe Light is a life preserver signaling emergency strobe which attaches to a life jacket or life vest with a steel pin or Velcro straps. The omni-directional strobe light is visible up to 2 miles. C-Strobe features a slim, lightweight, waterproof case and operates more than 8 hrs (continuous). Operates on 2 AA alkaline batteries (not included). P/N 13-54020



C LIGHT

The C Light is a life preserver signaling emergency light which attaches easily to a life vest or jacket with a stainless steel pin or Velcro strap. The intense incandescent light is visible for up to 2 miles depending on conditions. The lens intensifies light 20 times brighter than comparable products. Operates on 2 AA alkaline batteries (not included). Operates more than 8 hours (continuous). P/N13-54030



RAPIDFIRE VEST LIGHT

RapidFire Vest Light is a self-contained emergency rescue lamp. It's small, compact, rugged, and waterproof and attaches to a standard life vest. It automatically lights when vest is inflated or on manual pull-pin activation. Provides 8 hours continuous light output once activated. Single use light. P/N 13-54040



MINI B 300 PERSONAL RESCUE TRANSMITTER

- In-line speaker emits audio warble to confirm activation and transmission of distress signal or to notify of accidental activation
- Exclusive ACR audio indication of transmission allows effective self-test
- User-replaceable battery; unit uses inexpensive, easy-to-obtain common lithium camera battery, Duracell DL223A (or equivalent)
- Frequency stability exceeds ETS 300 152 standard; meets rules for satellite detection
- Perfect for use as Crew-Overboard system when combined with Vecta2™ Direction Finder
- Floats if dropped overboard • 121.5 MHz (SAR frequency) provides rescue forces with pinpoint homing
- Antenna maximizes peak effective radiating power when fully extended. Compact size with antenna folded; durable double-braided antenna resists distortion when packed for extended periods
- LED indicator confirms transmission
- Battery installation instructions included

Operating life: 24 hours @ -20°C (-4°F) P/N 13-02416



RESCUE LASER FLARE MAGNUM™

Ahand-held nighttime laser signaling device that provides a convenient, effective way to signal a rescue party up to 20 miles (32 km) away, depending on atmospheric conditions. It's ease of operation, long life and waterproof design makes it the perfect survival signaling device. Unlike conventional pyrotechnic flares, the Rescue Laser Flare™ is non-flammable, non-hazardous and can operate continuously for 72 hours on two replaceable AA batteries.



72 Hour P/N 13-01924.....

15 Hour P/N 13-01923.....

ACTIVE EXTINGUISHING LINE

Active Extinguishing Line is totally independent, 1kg, fire extinguishing system from any power source. Its main secret lies in the heat detector in a form of a line made out of special laser predriller polymer, which will react instantly to any source of heat or fire. This line (heat detector) is connected to reservoir containing fire-extinguishing agent: hexafluoropropane FE-36. Inside of the protected device (equipment) a loop made out of the heat detector breaks, creating a mini sprinkler, directly over source of fire or heat, extinguishing it instantly. In a moment of activation the system closed circuit switch collapses sending a signal informing of fire. For experimental aircraft only. Ask for status of pending STCs.....P/N 13-03266



SMOKE HOODS - LIFE VESTS

PARAT C EMERGENCY SMOKE HOOD



The PARAT C is a lightweight, portable easy to don smoke escape hood designed for selfrescue in the event of a fire. The PARAT C protects the wearer for a minimum of 15 minutes from smoke, carbon monoxide and toxic gases normally present during a fire. It is ideal as a personal escape device which can be used in emergency situations occurring in homes, office or apartment buildings, schools, hospitals, plant facilities and hotels.

FEATURES:Hood made from flame-retardant, selfextinguishing PVC material. Bright orange hood with high visibility and excellent reflective properties. One universal size. Can be worn with glasses, long hair and beards. Large visor treated with anti-misting agent provides wide range of vision for quick escape. Elastic collar makes hood easy to don and adjust. Comfortable, soft, inner mask allows wearer to breath normally through nose or mouth, Perfect for frequent travelers.

Parat C Smoke Hood P/N 13-04232.....
Parat C Wall Holder P/N 13-06642.....

PEACE OF MIND SMOKE HOODS



Peace of Mind hoods are emergency respiratory aids that give you the necessary protection to evacuate any area where toxic fumes or smoke could indispose a victim. Also provides protection for eyes, hair, & free against flames, toxic fumes, dust, and sparks. In their vacuum-sealed package, the Peace of Mind hoods are lightweight (3.5 oz) and compact (7.5" x 4.5" x 0.75"). In a few, fast, easy steps, you can slip on the hood and evacuate. Assures peripheral vision, hands free usage & unimpeded communication. You can hear, see,

and talk while wearing the Peace of Mind hood. Its use of filters instead of a mouthpiece and/or breathing apparatus makes Peace of Mind hood easier to use than other devices; Just pull it over your head and evacuate. Excellent for use in general aviation aircraft as well as for travel on commercial airlines. The transparent wall case holds two hoods and two light sticks for use in home or office. The 6-inch light stick diffuses 30 minutes of intense light without heat or flame. Non-toxic and easy to use.

P/N 13-02731

COMFORT MAX INFLATABLE LIFE-VEST

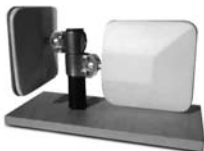


Features: •USCG approved for persons at least 16 years of age weighing 80 lbs. and above with a chest size between 30" and 52" •Dual waist belt stainless steel adjusters. Provides for easy adjustment with both hands and a more custom fit •Exterior inflation system access flap. Allows for clear, direct access to the CO2 cylinder for rearming. CO2 cylinder

can be replaced without opening and unfolding the entire PFD •Waist strap and back strap attachment points fully connected and reinforced from inside for added strength •Heavy duty 420 denier nylon packcloth outer cover •Twin 2" wide back straps for comfort and security •Comfortable neck. The neck area has no Velcro or edge binding to cause chafing or abrasion for all-day comfort .

Navy P/N 13-04372.....
Red P/N 13-04373.....

SMILEVIEW MIRROR™



With the introduction of the SmileView Mirror, a major drawback of high wing tandem seat aircraft has been solved! Even with an intercom, in flight communication has been lacking. Facial expressions can say so much more than just words over an intercom. Instructors, Young Eagle Pilots or anyone flying with a friend need to see the face of their

passenger to gauge what they are feeling. The SmileView Mirror has a 4" x 4" acrylic mirror that mounts securely to avoid vibration, giving a great view. Total weight is 7 oz. and it clamps onto the overhead structural tubing with a socket wrench. It's easily removed, if necessary.

Which of the two versions you use depends on whether your aircraft has a short tube running from the V structure in the windscreen to the wing root or not. The American Champion family of aircraft has this short tube and uses the Rear Mount version. Cubs and many LSA use the End Mount as they have the V structure, alone.

Rear Mount..... P/N 13-05707
Universal End Mount P/N 13-05708.....

SURVIVAL PRODUCTS LIFE RAFTS



Perfect for general aviation. Small and compact it fits in a lightweight valise 4" x 12" x 14" and weighs only 12 lbs. But don't be fooled by its size, price or weight. This raft will do the job for you under the most adverse condition. It provides a fresh water buoyancy of 190 lbs. per person and a deck area of 3.6' per person which exceeds all Govt. standards. Inflated, the raft is 46' inside and 68' outside and every square inch has

been meticulously made from raw materials and components tested for their durability and life expectancy. Every raft is pressure tested and all seams and adhesive bonds rigorously checked prior to release. Raft includes sea anchor, bailing bucket, hand inflation pump, and CO inflation system. Optional survival equipment shown below. 6-13 person raft is 5' x 12' x 14' and weighs 18 lbs. Available in non-TSO'd and TSO'd versions.

Non-TSO'd 4-6 Person Life Raft..... P/N 13-31610.....
Non-TSO'd 6-13 Person Life Raft..... P/N 13-31660.....
Non-TSO'd 4-6 Person Basic Raft w/o canopy .. P/N 13-31670.....
TSO'd 4-6 Person Raft w/canopy only P/N 13-31680.....
TSO'd 4-6 Person Raft w/91 equip..... P/N 13-31690.....
TSO'd 4-6 Person Raft w/121 equip..... P/N 13-31700.....
TSO'd 4-6 Person Raft w/135 equip..... P/N 13-31710.....
Non-TSO'd 8-12 Person Basic Raft w/o canopy P/N 13-31715.....
TSO'd 8-12 Person Raft w/canopy only P/N 13-31725.....
TSO'd 8-12 Person Raft w/91 equip..... P/N 13-31735.....
TSO'd 8-12 Person Raft w/121 equip..... P/N 13-31745.....
TSO'd 8-12 Person Raft w/135 equip..... P/N 13-31755.....
TSO raft with FAR91 kit 6M..... P/N 13-05861.....

SURVIVAL RAFT ACCESSORY EQUIPMENT KITS

Far 91 Kits includes: canopy with inflatable mast, equipment container, signal flag, 3 signal flares, two cell flashlight with alkaline batteries, first aid kit, raft repair kit, sea dye marker, signal mirror, food rations, water rations, and signal whistle. Far 121 Kits includes: All of above plus: utility knife, survival manual and sponge. Far 135 Kits included: all of above plus: magnetic compass, eight pint desalter, fishing kit, 75 ft. retaining line, two paddles and radar reflector.

Far 91 Emergency Kit..... P/N 13-31620.....
Far 121 Emergency Kit..... P/N 13-31630.....
Far 135 Emergency Kit..... P/N 13-31650.....

REVERE COASTAL COMPACT RAFT



Double 200 lb. SuperRev™ ballast pockets, it enhances stability in rough sea conditions. Its light weight allows for easy deployment and the compact size makes stowage easy in the smallest of spaces. Operation is easy. Just open the red flap on the valise and extend the painterline. Give a hard pull and the raft inflates automatically in less than 30 seconds. Coastal Compact Raft is not recommended for off-shore use.

| Raft | Part No. | Price | With Canopy | Price |
|------|----------|-------|-------------|-------|
| 2 | 11-07471 | . | --- | --- |
| 4 | 11-07472 | . | 11-07473 | . |
| 6 | 11-07474 | . | 11-07475 | . |

AIRLINE TYPE LIFE VEST



This self inflating airline type life vest is inflated by a tug on the cord which releases carbon dioxide from a rechargeable cylinder, designed to keep the wearer upright even unconscious or incapacitated. Can be reinflated by blowing into a special mouth tube. Folds to 2.5"x 6.5" and weighs only 1.4 lbs. Flame resistant Urethane coated nylon for added durability. Meets TSO C13e for flights within 50 miles of land. Bright international yellow for easy identification. It fits adults & children. New surplus, overhauled, & certified. HAZMAT. Shelf Life: 2 Years.

P/N 13-31640

MUSTANG SURVIVAL PRODUCTS

MUSTANG INFLATABLE LIFE PRESERVERS



CLASSIC INFLATABLE PFD (MANUAL ACTIVATION) - A perfect choice for any boater interested in a lightweight design with high mobility, the Mustang Survival MD3003 Classic Inflatable PFD can be easily worn over a t-shirt in warm weather or over a jacket in colder conditions. The simple construction makes it is easy to wear and maintain, the durable nylon shell makes it suitable for a variety of activities and the inflated cell features a safety whistle and SOLAS reflective tape for high visibility.

P/N 13-06382 (RED).....
P/N 13-06371 (BLUE).....



INFLATABLE BELT PACK PFD - A perfect choice for any boater interested in a lightweight design with high mobility, the Mustang Survival MD3003 Classic Inflatable PFD can be easily worn over a t-shirt in warm weather or over a jacket in colder conditions. The simple construction makes it is easy to wear and maintain, the durable nylon shell makes it suitable for a variety of activities and the inflated cell features a safety whistle and SOLAS reflective tape for high visibility.

P/N 13-06372.....



DELUXE INFLATABLE PFD (MANUAL ACTIVATION) - The Deluxe Inflatable PFDs combine the advanced safety of inflatable technology with product enhancements such as comfort-improvement features and a safety inspection window to easily tell users if the inflator is ready for use. The Velcro(TM) closure makes it easy to wear and maintain while closing to the outside to reduce chafing around the neck and chest; the neoprene Comfort Collar(TM) eliminates neck irritation. Made for recreational enthusiasts and professionals alike, the MD3085 sports a manual inflation system and is lightweight and close-fitting to ensure it doesn't interfere with daily activities.

P/N 13-06373 (BLUE).....
P/N 13-06381 (RED).....

TWIN CHAMBER AVIATION PASSENGER LIFE PRESERVER - The MD1127 Twin Chamber Inflatable is a constant wear life jacket that provides flotation protection for aircrew flying over water in the event of emergency landings. The MD1127 features an inflatable cell that is comprised of two independent chambers, separated by a fully integrated floating baffle system. This provides for an orally inflated reserve chamber in the event that the primary chamber becomes damaged. Federal Aviation Administration (FAA) approved, the MD1127 is lightweight and designed for constant wear and comfort. The unit is manually inflated and delivers 37lbs of buoyancy and is made with a fire-resistant cover.

P/N 13-06379.....



MD3085/MD3087 RE-ARM KIT - The Manual Inflatable Re-Arm Kit contains everything necessary to re-arm your Mustang Survival Manual Inflatable PFDs after deployment.

Contains: one 33gram CO2 cylinder, one re-arming instruction manual.

For model numbers: MD3085 - Deluxe PFDs 3F Manual - USA, MD3087 - Deluxe PFDs 3F Manual with Harness - USA

MD3051 - Deluxe PFDs 3F Manual - Canada

MD3052 - Deluxe PFDs 3F Manual with Harness - Canada

Use only Mustang Survival re-arm kits. Use of other re-arm kits may result in improper operation or failure to operate and will void the product's warranty.

P/N 13-06374.....



MANUAL INFLATABLE RE-ARM KIT: MA7170 - The Manual Inflatable Re-Arm Kit contains everything necessary to re-arm your Mustang Manual Inflatables after deployment. Contains: one 33gram CO2 cylinder, one green inflator pin, one re-arming instruction manual.

For model numbers: MD1166, MD3000, MD3003, MD3004, MD3020, MD3025, MD3091 Use only Mustang Survival re-arm kits. Use of other re-arm kits may result in improper operation or failure to operate and will void the product's warranty.

P/N 13-06375.....

CLOSED CELL NEOPRENE HOOD

BREATHABLE CONSTANT WEAR AVIATION COVERALL

The MA7348 Closed Cell Neoprene Hood offers increased protection against the elements when worn with Mustang Survival anti-exposure gear. Designed for easy integration with the MSD900, MSD901, MSD585, MAC200 and MAC300, the hood provides exceptional head and neck insulation and includes a lanyard to tether hood to suit, an adjustable mouth guard for protection from spray and a velcro attachment point for an emergency light. Sizes: N/A or Universal Colors: RED

P/N 13-06380.....



WORK SUITS

CONSTANT WEAR AVIATION COVERALL

The MAC10 is a close fitting, anti-exposure suit for pilots and passengers flying over marine environments. Designed to replace multiple garments used to protect aircrew from individual operational hazards, the integrated three layer suit offers protection from fire and its radiant heat, cold exposure, cold water immersion and drowning. A durable, flame resistant Nomex® anti-static outer layer provides protection for the inherently buoyant, thermal protective wetsuit. An inner layer of Nomex® provides further fire protection and comfort. Even after being significantly marred by fire or puncture, the suit maintains its flotation and hypothermia protection. Rugged leather abrasion panels are integrated into the knees and seat offering protection from petroleum, fuel oils and soiling. Multiple pockets provide storage for notepads, pens and survival equipment. An insulated thermal protective hood, stored in the right leg pocket, minimizes heat loss and provides additional fire protection for the head.

The MSF300 comes ready to wear with included universally sized dry socks, trim to fit wrist seals and CCS™ adjustable neck seal.

Sizes: 13, 10, 7, 4, 1, 15, 12, 9, 6, 3, 14, 11, 8, 5, 2, 12A, 9A

Colors: ORANGE, ROYAL BLUE, SAGE GREEN

P/N 13-06378.....



BREATHABLE CONSTANT WEAR AVIATION COVERALL

The MAC100 is a breathable flight coverall that provides anti-exposure protection without sacrificing comfort during prolonged missions. Engineered for maximum mobility during marine aircraft operations, this three layer integrated suit provides protection against fire, radiant heat, cold weather, cold-water immersion and drowning. The breathable foam liner features a moisture permeable membrane that allows excess moisture to escape while providing a thermal barrier against the dangers of outside elements. Durable, flame-resistant Nomex aramid, anti-static fabric provides external protection for the inherently buoyant, flame resistant, thermally protective, integral wetsuit. Even after being significantly marred by fire or puncture, the suit maintains its flotation and hypothermia protection. Rugged leather abrasion panels are integrated into the knees and seat offering protection from petroleum, fuel oils and soiling. Multiple pockets provide storage for notepads, pens and survival equipment. An insulated thermal protective hood and inflatable mitts are stored in the ankle pockets. Sizes: 7, 6, 5, 4, 15, 14, 13, 12A, 12, 11, 10, 9A, 9, 8, 3, 2, 1 Colors: ORANGE, ROYAL BLUE, SAGE GREEN

P/N 13-06377.....



AVIATION DRY SUIT

CONSTANT WEAR AVIATION DRY SUIT SYSTEM (2 LAYER)

The MSF300 is a two-layer Aircrew Dry Suit that combines the performance of the 3 layer MAC300 into two layers allowing greater mobility with reduced bulk and lower thermal burden. The outer shell uses a blended GORE-TEX®/NOMEX® fabric that is waterproof, breathable, flame-retardant and anti-static. High-wear areas are strategically reinforced to enhance the suit's durability and prevent abrasion damage that could compromise the suit's integrity. The breathable thermal liner provides both insulation and emergency flotation and

features Mustang's aerated closed-cell foam quilted with a wicking fabric that pulls excess moisture away from the body. An adjustable neck seal using Mustang's patented Closed Comfort System (CCS™) can be worn loose to provide comfort out of the water and can quickly be drawn tight to keep the water out and trim to fit neoprene wrist seals provide water-tight integrity. The thermal liner can be easily removed from the outer shell to reduce thermal protection where not operationally required. An ergonomically designed rear entry allows for self donning and doffing. Integral pockets are designed for a variety of uses and facilitate access even when wearing a survival vest over the suit. The MSF300 comes ready to wear with included universally sized dry socks, trim to fit wrist seals and CCS™ adjustable neck seal. Sizes: XXL, XXXL, M, S, SX, L, XL Colors: ORANGE, SAGE GREEN

P/N 13-06376.....



SURVIVAL KITS - FIRST AID KITS

TWO-MAN V.I.P. SURVIVAL PACK



It's staggering just how much useful equipment comes out of this 10" x 11" w x 4" d backpack. Everything arranged logically and available the way you'd want it. Organized into 6 major divisions: medical/first aid, food & water, shelter & protection, fire & cooking, signals & lights, & "emergency devices." Wt: 20 lbs P/N 9217

NYLON CASE FIRST AID KITS



Be sure to carry a first aid kit on all flights, particularly over desolate terrain. Model A: First Aid Kit - Packed in a nylon case for easy storage. The same type used on commercial air carries with contents in smaller quantities. Ideal for general aviation. Includes all basic necessities in a compact lightweight package. P/N 13-02944

MODEL B: FIRST AID KIT - In addition to all of the first aid products in the Model A kit, Model B also includes a strobe light to aid searches in locating downed aircraft and survival blanket. (Battery not included). P/N 13-02945

MOTION EAZE



Motion Eaze is the most effective motion sickness treatment on the market today. Whether you want to prevent occasional motion sickness or relieve its symptoms, after the fact, Motion Eaze does the job. No matter, if it's sea sickness, car sickness, air sickness or any activity where motion sickness poses a problem, Motion Eaze really works. Contains no drugs, artificial additives, or stimulants of any kind. Only the freshest, highest quality, natural oils are used in its production. Motion Eaze is an oil that is applied to, and absorbed through, the skin, just behind the ear. Relief arrives in minutes and lasts for hours. It's perfect for children that have trouble taking pills. Motion Eaze is safe, having no known side effects. P/N 13-02732

ACUPRESSURE WRIST BAND



Fast, effective motion sickness control without drugs, drowsiness, or other side effects. Can be used by adults or children. Exerts a carefully-controlled pressure on acupressure point of both wrists. Takes 2 to 5 minutes to become effective. Used successfully by physicians & the military. P/N 9411

MOTION SICKNESS RELIEF BAND



Take the ReliefBand® Medical Device along to help relieve that awful feeling of nausea caused by motion sickness. It's drug-free, non-invasive, comfortable to wear and east-to-use. Worn similar to a sports watch, but placed on the underside of your wrist, the ReliefBand® Medical Device works using gentle electronic signals to stimulate nerves in the wrist. A tingling sensation lets you know the ReliefBand® Medical Device is working. This helps normalize stomach rhythm, helping to relieve nausea. P/N 13-05700

SIC-SAC™



Use these for air sickness emergencies. Moisture proof and tear resistant even under extreme temperature changes. 10 sacks, individually packaged, each with attached tie band. Pack of 10 P/N 9296

PUMA METHOD FOR PREVENTION OF MOTION SICKNESS

PS

Take Control of your Life!



Imagine the Possibilities!

The Puma Method is a series of simple conditioning exercises, taught on VHS or interactive DVD, that effectively prevents the nausea, vomiting, lightheadedness and other unpleasant symptoms experienced by over 50% of the population while traveling. Sam C. Puma MD, president of Puma Applied Science and former Air Force Flight Surgeon at NASA, developed these revolutionary new exercises to totally eliminate carsickness, seasickness, airsickness, and even spacesickness. The Puma Method is unique in that it uses the body's own mechanism to actually master motion sickness, so there is never a need for drugs, devices or herbs. This means no unexpected or unpleasant side effects. The mild head, neck and upper body exercises take only about 15 minutes a day to do. DVD P/N 13-03675 VHS..... P/N 13-03676

ACR SIGNAL MIRROR



Sighted signaling mirror with float and whistle. Designed to provide optimum sighting "spot" with holographic red dot viewing window. When target image, mirror & sun are in proper alignment, red dot on target ensures mirror reflection is on target. Telescope quality second surface reflective mirror is bright, provides focused image. Buoyant float for easy recovery if dropped overboard. Patented whistle (meets USCG) for audible alerting in low visibility conditions. Signal Mirror has lanyard for securing to person or liferaft. Size: 4.25x2.75x0.19 in. (10.8x7x0.5cm); Wt: 1.8 oz (51 g) P/N 13-03177

SURVIVAL BLANKET



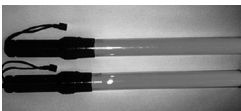
Often called the "space blanket." NASA thought of everything when they came up with this metal-coated nylon design. Waterproof and windproof, it retains 80% of body heat, it's colored to be seen from more than 4 miles away (although it measures just 4' x 7'), it's radar-reflective, and it folds down into a water-proof pouch 8.5"x9"; wt:10 oz. P/N 9145

LAND/SHARK INSTANT SURVIVAL SHELTER LS-1300



Stored in its water, vapor and grease-proof vacuum sealed pouch, it measures only 6" x 8" x 1" and weighs a mere 18 oz. (0.5 kg.). When needed, it opens to a windproof, waterproof, heat-retaining roomy 36" x 84" (91.4 cm x 213.4 cm) thermal cocoon that provides full body coverage, even over heavy outerwear and boots. It then protects you from exposure and helps you maintain a life-sustaining core body temperature until help arrives. In the open water, the waterproof bag serves to slow the drain of vital body heat and provides protection from chilling sea spray and breaking waves. The aluminized (International Orange) material is radar reflective for search aircraft and high speed vessels moving at night. In warmer waters where the sun is a danger to exposed skin above the water, the bag can be configured to provide for shade and ventilation. P/N 13-05691

LIGHTED LINEMAN WANDS



Used by US Air force • Up to 400 hours operation • 21" long • Waterproof • Uses 2 D batteries (not incl.) • Fluorescent coated diffuser enhances red light output. P/N 13-08959

PELTOR FIRST AID KIT



This 90 piece first aid kit from Peltor was designed for aviation use and includes bandages, iodine pads, butterfly wound closures, alcohol prep pads, adhesive pads, sting relief pads, latex gloves, eye pads, tape, splint, eyewash, tweezers, scissors, cold pack, first aid handbook, and more. In plastic case with gasket. P/N 13-94535

AIRCRAFT EMERGENCY SURVIVAL KIT



This is an ideal emergency support kit for plane, boat, home, office or school. This kit will sustain a person for 3 days. Includes: 2400 calories of ready-to-eat US Coast Guard approved food, sterile Coast Guard approved water, a lightweight (54" x 48") durable, waterproof blanket, & assorted first aid supplies, matches etc. P/N 9641

3M™ ULTRATHON INSECT REPELLANT



Unique, time-release technology allows you to enjoy the outdoors longer. Provides lasting protection — up to eight hours against mosquitoes, gnats, chiggers, biting flies and ticks. Helps reduce the risk of contracting West Nile Virus and Lyme Disease. 2 oz. Lotion..... P/N 09-01723..... 6 oz. Aerosol..... P/N 09-01724.....

SURVIVAL KITS – FIRST AID KITS

CANADIAN-ALASKAN SURVIVOR PAK



Originally designed for pilots flying within Alaskan and Canadian airspace, the CA-20 offers protection against harsh climates in the event of an emergency. It contains over 150 medical and general supply items to help sustain two people for up to 14 days. The space saving design combined with its ample supply of food and water makes the CA-20 a popular

choice on board fixed wing, rotor craft, and corporate jets. It's also used extensively by Search & Rescue units! P/N 13-03596.....

EMERGENCY SURVIVAL KIT



Specially designed by a focus group, the ESK-02 makes it easy to be prepared for life's little surprises. Each kit contains over 40 medical and general supply items including a guidebook that offers survival tips and basic information. Designed to support one person for up to three days, the ESK-02 carries a five-year shelf life on food and water. Its affordable price makes it a great choice as a premium/incentive

item, corporate gift, or employee award. P/N 13-03606.....

THE TRAVELER KIT



The Traveler Kit - Personal Care Package is appreciated by everyone from busy executives to sports enthusiasts. It's the perfect addition to any car as the "other spare" to have on hand for life's unexpected moments. Designed to support one person for up to three days, it contains over 50 support items in a custom nylon carrying bag with reinforced straps. "The Traveler" is

ready to go anywhere P/N 13-03607.....

2-PERSON EMERGENCY SURVIVAL KIT



This deluxe 2 PERSON EMERGENCY SURVIVOR KIT could mean the difference between disaster and survival in an emergency situation. It contains a complete 3-day supply of food, water, medical & other emergency supplies for 2 people.

Over 60 Emergency Items! • Emergency Drinking Water Metallic Sachets • 2400 Calorie Emergency Food Rations • Instant Cold Pack • Medical Kit • Disposable Flashlights • Thermal Blankets • AM/FM Portable Radio w/ Batteries • The Wallace Emergency Guidebook P/N 13-03608.....

EMERGENCY BLANKET



This Emergency Blanket (52" x 82.5", 1.5 oz.) provides personal protection from rain, wind, heat, and cold. It's manufactured from extremely lightweight, flexible, space-age material, and retains up to 90% body heat in cold weather. It even deflects heat in hot climates and can be used to offset hypothermic reactions. The Emergency Blanket is waterproof, reusable,

and portable. It's perfect for camping trips and sporting events in addition to emergencies. Keep several on hand for the unexpected! P/N 13-03604.....

SNOW BROOM



The SNO BRuM offers pilots a way to quickly sweep snow off aircraft wings and away from the user. Great for high wing aircraft. The durable molded polyethylene foam head has been lab-tested for non-abrasiveness, freeze resistance, center

load stress and durability to achieve the highest ratings in all tests. The oversized head (6" x 17") is the largest snow remover available. The high-impact plastic face plate is recessed into the foam to prevent contact with the aircraft. The aluminum telescoping handle has special cold resistant nylon threads and extends from 27" to 46". Also great for cars, trucks, SUV's, and awnings. P/N13-04055.....

FIRST AID 'N TRAVEL KIT



Finally—a compact, complete travel unit for the person on the go! This kit fits perfectly in a purse, briefcase, or glove compartment, and is ready when you need it in first aid situations. This kit is very special because it's the only one of its kind to include a 4 oz. sterile water packet with a five-year shelf life. Ask us about using this kit for fundraisers or corporate promotions! We can customize the kit to include your company's logo.

P/N 13-03605.....

COCOON SLEEPING BAG



The All Weather Pocket Size Sleeping Bag The Cocoon Sleeping Bag (84" x 36") provides personal protection from rain, wind, heat, and cold. It's manufactured from extremely lightweight, flexible, space-age material, and retains up to 90% body heat in cold weather. It even deflects heat in hot climates and can be used to offset hypothermic reactions. The Cocoon is waterproof, reusable, and portable. Keep several on hand for the unexpected!. P/N 13-03603.....

EMERGENCY FOOD RATIONS



MAINSTAY™ FOOD PACKAGE - Mainstay™ has emerged as a food product unlike any other. Before it came into the picture, emergency food bars were only being made for short-term use. Survivor Industries changed all that when it created a great-tasting, non-thirst provoking product with an extraordinary five-year shelf life. Mainstay™ is specially formulated for land-based high stress situations. Each package contains 9 pre-measured 400 calorie meals, which allows a person to get their full nutrition in a challenging situation. Mainstay™ is Kosher and it meets the dictates for Halal.

Mainstay™ 3600 P/N 13-03599.....
Mainstay™ 2400 P/N 13-03601.....
Mainstay™ 1200 P/N 13-03602.....

EMERGENCY WATER PACKETS



Mainstay™ Water Packets - All water is not created equal! Here at Survivor Industries we have spent years perfecting our Mainstay™ Water Packets. The final result is a portable product with a 5-year shelf life. Other Key Benefits: • U.S. Coast Guard approved • No Oxygen Transfer (In other words, no chance of bacterial contamination) • Pre-Measured Packets make the water easy to dispense, and potential for loss is minimized. If a packet is destroyed, only 4.224 ounces (125 ml) would be lost. • Easy to Transport - just 18 lbs. (8.17 kg) per case of 60 packets. • No special storage required - it can withstand temperatures from (-40°F to 210°F) (-40°C to 99°C) • Very Low Cost. • No Cups Needed!

P/N 13-03598.....

THE WALLACE GUIDEBOOK



For Emergency Care & Survival - When you're faced with a disaster, you can often face physical and psychological strain. It's often hard to remember what to do in an emergency situation, and this is exactly why we've written the Wallace Guidebook. This book is specifically designed to present the basics of survival in an extremely easy-to-understand manner. This book discusses the following topics, plus many more: Choking, Heart Attack, CPR, Shock, Burns, Emotional Trauma, Bleeding, Fainting, Wounds, Broken Bones, Fractured Bones, Back Injury, Childbirth, Auto Breakdown, Temperature Extremes, and the 1st and 2nd Rules of Survival. It's not fun to be in one of these situations, but having a book like this nearby gives you a better chance of a happy ending.

P/N 13-03597.....

CANOPY BREAKER TOOL



The Piranha Canopy Breaker Tool is a robust device with a sharp edge on one end. The tool is secured inside the aircraft cockpit to a frame member or seat frame, within easy reach of the pilot. A plastic cover is over the blade end for tactile and visual identification and protects the pilot from the blade end. In an emergency situation the pilot locates the Canopy Breaker Tool,

removes the safety pin / lanyard which secures the tool to the aircraft and the red cap. The pilot firmly grasps the tool with one hand and places the other hand underneath the tool, then positions the blade parallel to the canopy side frame, near the frame and uses very strong upward thrusts aiming one of the blade points at the Plexiglas. The unit is made from industrial strength aluminum, weights 10 oz and the lanyard has a 35# break strength. P/N 12-02269.....

PS

SURVIVAL KITS

Crashkit Personal and Professional Flight Line Series aviation survival kits are quickly becoming an industry leader in top quality aviation survival kits. Numerous kits are available to suit you piloting and survival needs.

CRASHKIT ALPHA SURVIVAL KIT



The "Alpha" personal aviation survival kit is designed for the pilot with general knowledge of survival techniques. This kit should only be purchased by experienced and skilled individuals. This kit includes 24 of the most essential items packed into the smallest kit practical. Weighing in at only 1.54lbs, the general kit is small enough to fit in any flight bag, purse, glove compartment, map pouch or cargo pocket.

Every item included in this kit has been thoroughly tested and approved to insure it performs flawlessly when needed (we've even sharpened the knife!) and meets or exceeds Transport Canada's Canadian Aviation

Regulations to facilitate survival and rescue. Dimensions : 6.37" x 4.75" x 2.12"(16.9 x 12.06 x 5.4 cm) Weight : 1.54 lbs Contents : 24 items covering food, fire, water, shelter, and first aid Case : Pelican 1020 case - yellow - tough, watertight, polycarbonate case Optional Acc's : Parachute deployment system; Aircraft Mounting Bracket Warranty : Lifetime P/N 13-04684

CRASHKIT BRAVO SURVIVAL KIT



The 'Bravo' personal aviation survival kit is designed for the pilot with some basic knowledge of survival techniques. Containing 51 of the most essential items, this kit remains small and lightweight. At only 2.20lbs, it is compact enough to fit in any flight bag, purse, glove compartment, map pouch or cargo pocket.

Each item in this kit has been thoroughly tested and approved to ensure flawless performance when needed, and meets or exceeds Transport Canada's Canadian Aviation Regulations to facilitate survival and rescue. Dimensions : 7.50" x 5.06" x 3.13"(19.05 x 12.86 x 7.94 cm) Weight : 2.20 lbs Contents : 51 items covering food, fire, water, shelter, and first aid Case : Pelican 1050

case - tough, watertight, polycarbonate case Optional Acc's : Parachute deployment system; Aircraft Mounting Bracket. Warranty : Lifetime P/N 13-04685

CRASHKIT CHARLIE SURVIVAL KIT



The 'Charlie' personal aviation survival kit is designed for the pilot with minimal knowledge of survival techniques. Including 71 of the most essential items, this kit is extensive in its coverage of necessary tools and supplies. Packaged in a Pelican 1120 case, 'Charlie' is still compact and lightweight enough for easy transport and storage.

Every item in this kit has been thoroughly tested and approved to ensure it performs flawlessly when needed, as well as to ensure the ease of use for each individual piece. This kit meets or exceeds Transport Canada's Canadian Aviation Regulations to facilitate

survival and rescue. Dimensions : 8.12" x 6.56" x 3.56" (20.9 x 16.6 x 9.0 cm) Weight : 2.81 lbs Contents : 71 items covering food, fire, water, shelter, and first aid Case : Pelican 1120 case - tough, watertight, polycarbonate case Optional Acc's : Parachute deployment system; Aircraft Mounting Bracket Warranty : Lifetime. P/N 13-04686

CRASHKIT 2-7 SURVIVAL KIT



Designed for use in typical GA light aircraft, specifically those used in flight schools or clubs, this crashkit has the materials necessary to sustain two people for seven days in the event of a crash. Redundancy in the items within the kit allows for multiple options for food, fire, water and shelter; for example, the kit contains four items capable of starting a fire. Containing 165 of the most essential items needed in a survival situation, this kit is packaged in a Pelican 1200 case, and remains lightweight and compact for easy transport and storage on a craft. Every item included in this kit has been thoroughly tested and approved to ensure it performs flawlessly when needed, and meets or

exceeds Transport Canada's Canadian Aviation Regulations to facilitate survival and rescue. Dimensions : 10.63" x 9.69" x 4.88" (20.9 x 16.6 x 9.0 cm) Weight : 7.15 lbs Contents : 165 items covering food, fire, water, shelter, and first aid Case : Pelican 1200 case - tough, watertight, polycarbonate case Kit Coverage: 2 people for 7 days (or longer dependent on situation) Optional Acc's : Parachute deployment system; Aircraft Mounting Bracket Warranty : Lifetime. P/N 13-04690

CRASHKIT 4-7 SURVIVAL KIT



The Crashkit 4-7, designed for use in typical GA light aircraft and commercial aircraft, contains the materials necessary to sustain four people for seven days in the event of a crash. The variation of items within the kit allows for multiple options for food, fire, water and shelter; for example, in addition to the Mainstay packaged food, a fishing kit and snare are also included. This kit contains 232 of the most essential items needed in a survival situation, packaged within an indestructible Pelican 1400 case.

Every item included in this kit has been thoroughly tested and approved to ensure it performs flawlessly when needed, and meets or exceeds Transport

Canada's Canadian Aviation Regulations to facilitate survival and rescue. Dimensions : 13.37" x 11.62" x 6.00" (34 x 29.5 x 15.2 cm) Weight : 17.55lbs Contents : 232 items covering food, fire, water, shelter, and first aid Case : Pelican 1400 case - tough, watertight, polycarbonate case Kit Coverage : 4 people for 7 days (or longer dependent on situation) Optional Acc's : Parachute deployment system; aircraft mounting bracket Warranty : Lifetime. P/N 13-04691

CRASHKIT 6-7 SURVIVAL KIT



Intended for commercial aircrafts, our Crashkit 6-7 has enough materials to sustain six people for seven days in the event of a crash. Various means of food, fire, water and shelter allow for multiple options; for example, this kit includes not only Mainstay water, but the means for purification, as well as hot chocolate or tea. Within this indestructible, crushproof and waterproof Pelican 1450 case, 261 of the most essential items needed in a survival situation are packaged and ready for easy use. Every item included in this kit has been

thoroughly tested and approved to ensure it performs flawlessly when needed, and meets or exceeds Transport Canada's Canadian Aviation Regulations to facilitate survival and rescue. Dimensions : 16" x 13" x 6.88" (40.6 x 33 x 17.5 cm) Weight : 22.80lbs Contents : 261 items covering food, fire, water, shelter, and first aid Case : Pelican 1450 case - tough, watertight, polycarbonate case Kit Coverage : 6 people for 7 days (or longer dependent on situation) Optional Acc's : Parachute deployment system; aircraft mounting bracket Warranty : Lifetime. P/N 13-04692

MILITARY PILOT SURVIVAL KITS

SURVIVAL TOOL KIT - Total weight is 3 lbs. Custom designed, adjustable carrier pouch holds equipment. Can be worn around waist, used as tourniquet or with wooden dowels as splint. Dowels help with fire-starting. Blunt-tipped Meyerco Rescue One knife prevents injury, cuts seat belts and harnesses. Handle includes carbide

glass breaker. Two emergency blankets. Emergency signaling mirror. Victorinox SwissTool includes: pliers, screwdrivers, wire cutter, cap lifter, blades, metal file and saw, wood saw, reamer and punch, chisel/scraper, crate opener, wire bender, stripper and scraper, can opener, ruler, electrical crimper. Two-sided screw bit holder with six bits and belt holder. Whistle. MINI MAG-LIGHT® flashlight. Knipex adjustable plier wrench. Magnesium fire-starting tool from Doan Machinery and Equipment. P/N 13-05676



MILITARY PILOT SURVIVAL KIT - Designed by Oregon Aero for the U.S. Navy. The durable carrier pouch is hand sewn by Oregon Aero with pockets for each item. Knife, fire starter and flashlight lanyards attached to carrier. Special zipper permits access to folding knife without opening the carrier. 6.5" high, 5.5" wide, 2" thick. Kit includes: • Gerber® Multi-Tool

created especially for this kit by Gerber and Oregon Aero • Gerber® Harsey Air Ranger II Folding Knife • Nexustm 26DNL Compass • LED Task Light™ Flashlight • Sunscreen Packets • Vacuum sealed Balaclava • Strike Force™ Fire Starting System. Custom designed Multi-Tool includes pliers, wire cutter, file, awl, serrated sheep's foot blade, knife/fish hook sharpener, assorted screwdrivers. PN 13-05675

EAR PLUGS - PORTABLE RESTROOMS

PILOT RELIEF TUBES



HORN - Black molded plastic horn fits into horizontal or vertical brackets. Measures 2-3/8" diameter and weighs 1.3 oz .
P/N 13-04168.....



HORIZONTAL BRACKET - Black molded plastic bracket for underseat installation.
P/N 13-04169.....



VERTICAL BRACKET - Black molded plastic bracket for vertical installation.
P/N 13-04170.....



VENTURI - Black molded plastic venturi mounts on fuselage bottom and produces required suction to horn and outlet tubes for fluid ejection.
P/N 13-04171.....

Horn and Valve Assembly.....P/N 13-04167.....
Tee.....P/N 13-04172.....



AIRSOFT REUSABLE EARPLUGS

AIRSoft earplugs feature a shell of soft attenuating material around a pocket of air that is the highest rated reusable earplug available with a noise reduction rating NRR 27..... P/N 13-02194.....



ULTRA FIT E-A-R PLUGS

You get the best noise protection possible with a premolded ear plug. Triple flange design gives you a perfect fit and a noise reduction rating of 27 db. Conversations can still be heard while harmful noises are reduced to a safe level. Comes with carrying case and chain for hanging in a convenient place.
One Pair.....P/N 9821.....



E-A-R NOISE FILTERS

Soft polymer foam fits inside ear canal and expands to block sound and filter out damaging noises. Provides up to 35 db noise reduction. Washable and reusable.
P/N 9134...../pair



PELTOR 30 CALIBER EAR PLUGS (CASE OF 10)

The unique shape of the Peltor 30 Caliber Plugs is concave at the base to help wearers achieve easy, deep insertions for optimum protection. The Easy-Grip Handles on each plug allows for quick and easy removal. The Peltor 30 Caliber plugs are packaged in a 10 pair ammo case like actual bullets.
P/N 13-04287.....



LITTLE JOHN

Positively the least expensive accessory you can buy to extend your range. One authenticated case reports a Piper Malibu's range extended by 500 miles. Durable plastic, won't crack under any normal handling and temperature conditions. A tight screw-on cap makes it spill proof. Standard issue in hospitals for years.
P/N 9741.....



LADY J ADAPTER

The anatomically designed funnel snaps in and out of the little John. It can be used sitting or even standing. Clean white plastic.
P/N 9745.....



G FUNNEL ADAPTER

The G-Funnel is a portable urinal adapter which simply screws on to any plastic pop or water bottle that will be used as a container for those situations where a washroom facility is not available. The appeal to this adapter is that it can be attached and used together with any sized plastic pop or water bottle that most people have on hand. The plastic pop or water bottle is to be used as liquid container and then can later be emptied for reuse or just thrown in the trash when available. We think you'll agree that this is a very useful relief device for those emergency situations.
P/N 13-01974.....



RESTOP DISPOSABLE URINAL

The anatomically designed Restop is the disposable urine bag that combines a unique blend of polymers, enzymes, & deodorizer to turn urine into an odorless gel on contact. The funnel design prevents accidental spills. Restop is sanitary, non-toxic, spillproof & odorless, safe and convenient, trash container safe, and small enough to fit in pocket. Easy to use by men & women. 2 pack.
P/N 13-00794.....



TRAVEL JOHN

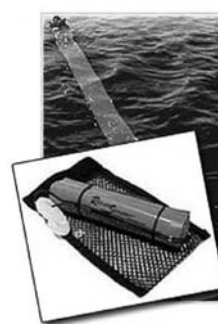
Absorbent pouch turns urine into gel instantly while destroying bacteria and odor. Specially designed collar works for men women and children; spill guard prevents back guard during use. Convenient, sanitary and compact. TravelJohn is easy to use while sitting or standing. Will not leak or spill, even if punctured. Holds 28 fl. oz. Includes antiseptic hand wipe.
3-pack.....P/N 13-00894.....



IPEE - DISPOSABLE URINE COLLECTION DEVICE

The SuperSlab 100® device is biodegrade and disposable urine collection device designed for men & women. Every SuperSlab 100 device includes a female adapter which enables women to urinate easily while standing. The SuperSlab 100® converts the liquid urine into a solid in less than one minute with an absorbent. The absorbent ITBX5®, is a biodegradable, 100% organic compound. After the SuperSlab 100® transforms the liquid into a solid, the device is easily stored for proper disposal at a later time.
P/N 13-05578.....
6 Pack.....P/N 13-05577.....

RESCUE STREAMER™ DISTRESS SIGNAL



This bright orange streamer, visible from 1.3 miles away at 1,500 ft. altitude, leads Search & Rescue teams right to you. The patented high-strength polyethylene Streamer design, tested and used by the U.S. Military and Coast Guard, is marked with the international distress symbol. Features sealed air-filled struts that keep it afloat on water and open on land to pinpoint your exact location to rescuers. RescueStreamers™ start at the size of a cell phone when stored and unroll in seconds. Always ready for use anywhere; land, water, and snow. Does not require chemicals, batteries, or electronics to signal continuously. Patented design approved for US Military & Coast Guard use. Furnished in a mesh bag for storage in a 1-2 person raft. Weight: 6.7 oz. Display size: 6" x 40 ft. Stored size: 3.5" x 7.5"
P/N 13-03767...../ea.



CO DETECTORS

CO GUARDIAN CARBON MONOXIDE DETECTORS

CO Guardian uses a patent-pending technology to compensate for changes in an airplane due to temperature and humidity. The detector has three (3) warning systems: audio, digital, and numeric warnings for escalating or dangerous levels of carbon monoxide in the cabin. CO Guardian can also be used in vehicles, motor homes, emergency vehicles, etc., as it plugs into any 12/24V adapter. All models have 3 Year Limited Warranty.



MODEL AERO-152A - Features: • Max power consumption = Less than 1W • Weight: approx. 2.5 oz • Works from 10V to 30V sys. • Product shielded to prevent RMI (Radio Magnetic Interference) with Aircraft systems • Audible alarm with varying pitch at 85DB • Digital CO Level Readout • Front panel lighting (Green, Amber & Red) • CO Sensor tested to 13,500ft • Built in Temperature compensating circuit • Built in Humidity compensating circuit. P/N 13-01639.....



MODEL AERO-152WD - Features: • Max power consumption = Less than 1W • Wt: approx. 2.5 oz • Works from 10V to 30V sys. • Product shielded to prevent RMI (Radio Magnetic Interference) with Aircraft systems • Audible alarm with varying pitch depending at 85DB • Front panel lighting (Green, Amber and Red) • CO Sensor tested to 13,500 ft • Built in temperature compensating circuit • Built in Humidity compensating circuit. P/N 13-01640.....



MODEL AERO-353 - CO Guardian upgrades its best selling model 352 to the 353. Model 353 has a brand new sensor that can detect CO as low as 1 Part Per Million (PPM) to 999 PPM. This unit now comes standard for interfacing CO levels display on the G1000, GNS480 and other Multi- function displays. The 353 now has a built in pressure sensor that compensates for altitude. These units can be mounted on the panel or remotely. The 353P now has a built in pressure sensor which compensates for altitude up to 25,000 feet. Similar to hypoxia, this becomes more critical as altitude increases and the body's tolerance to CO decreases. 353P/N 13-01642.....
353PP/N 13-05733.....



MODEL AERO 552 - This unit is a replacement for the 2.25" clock and provides the latest CO protection that displays 30 to 999 ppm in the cockpit, as well as aircraft high and low voltage alarms, pressure density altitude readout for takeoff. Cabin altitude alerts to remind you to go on oxygen. An RS232 output that allows the parameters for CO level, cabin pressure and temperature to be displayed on the UPS AT CNX80. P/N 13-02569.....
Aero 553 OAT Probe.....P/N 13-06165.....



DIGITAL CO2 DETECTOR

• Super large 3-1/2 digital LCD display with backlight • Pocket-sized and easy to use • Fast sampling time • Max hold and data hold • Audible beep from 35 to 200 ppm • Continuous beep after 200 ppm • Auto power off - 15 min. inactive • Protective rubber boot Specifications: • Range: 0 to 1,000 ppm • Resolution: 1 ppm • Accuracy: 5% or 10 ppm • Power source: (1) 9 volt battery • Dimensions: 6.3" x 2.2" x 1.6" P/N 12-01896.....

DIGITAL CO2 DETECTOR



The extremely affordable DCO 1001 has a measuring range of 0-1000 ppm and comes complete with a soft case, a wrist strap, 3 "AAA" batteries and an instruction manual. Features: • Adjustable co warning level • LCD dual digital display • Bright backlight • self test • Low battery indication • °F/°C selectable • Auto power off • Auto zero • Co range: 0~999ppm • Resolution: 1ppm • Battery life is 250 hours when the backlight is off and 35 hours with the backlight on. P/N 12-01895.....

MODEL 300 POCKET CO



The Model 300, with LOUD buzzer, vibrator, and LED alarms, the most versatile one-ounce full feature carbon monoxide dosimeter on the market today is now the only aviation carbon monoxide detector a pilot can attach to their key chain for travel, home, and a multitude of other life saving uses. Pocket CO Model 300 features nanotechnology enabled low-level carbon monoxide readings displayed every 5 seconds from 0 to 500ppm. Weighing less than one ounce, the wearable key-fob sized dosimeter calculates TWA, TE, MAX ppm, and time of max reading. Complete with replaceable battery, two-year instrument and sensor warranty, Pocket CO 300 provides maintenance-free protection in a durable, weather-resistant, single button package.

300 Pocket COP/N 13-06639.....
Replacement/Spare BatteryP/N 13-06640.....

HONEYWELL LUMIDOR XT, XP



THE LUMIDOR MINIMAX XT - Personal detector is able to monitor a single as from a choice of oxygen, carbon monoxide and hydrogen sulfide gases. Utilizing patented Surecell™ and Reflex technology, the Minimax XT achieves 24 months continuous, maintenance free operation. Audible, visual and vibrating alarms are standard. New Real-Time display versions available. All Lumidor Minimax XT instruments are supplied with a case clip, test adaptor and manual. An optional interactive product guide CD is available. Shelf life is 12 months on CO and H2S versions. IP67 water ingress protection.

| Model | Description | PN | Price |
|-----------------|---|----------|-------|
| Minimax-XT02 | UL/cUL Certified Minimax XT O2 Kit with vibrating alarm - Oxygen | 11-05750 | . |
| Minimax-XTCO | UL/cUL Certified Minimax XT CO Kit with vibrating alarm | 11-05751 | . |
| Minimax-XTCO25 | UL/cUL Certified Minimax XT CO Kit with vibrating alarm; set to Alarm1=25ppm and Alarm2=100ppm for California | 11-05752 | . |
| Minimax-XTH2S | UL/cUL Certified Minimax XT H2S Kit with vibrating alarm | 11-05753 | . |
| Minimax-XTRT02 | UL/cUL, ATEX/CENELEC Certified MiniMAX XT O2 Kit with vibrating alarm and Real Time Display | 11-05754 | . |
| Minimax-XTRT02 | UL/cUL, ATEX/CENELEC Certified MiniMAX XT CO Kit with vibrating alarm and Real Time Display | 11-05755 | . |
| Minimax-XTRT025 | UL/cUL, ATEX/CENELEC Certified MiniMAX XT CO Kit with vibrating alarm and Real Time Display; set to Alarm1=25ppm and Alarm2 | 11-05756 | . |
| Minimax-XTRTH2S | UL/cUL, ATEX/CENELEC Certified MiniMAX XT H2S Kit with vibrating alarm and Real Time Display | 11-05757 | . |

ACCESSORIES & SPARES FOR XT

| Model | Description | PN | Price |
|---------------|--|----------|-------|
| Minimax-XT-01 | Minimax XT Test Adaptor | 11-05758 | . |
| 2566-0122 | Minimax XT Printed Manual (English language only)* | 11-05759 | . |
| 2567-0016 | Minimax XT Hand Aspirator | 11-05760 | . |
| 2302B0846 | Ball Float | 11-05761 | . |
| 2302B0847 | 1m (3') 4 Part Sampling Probe | 11-05762 | . |
| 2566K0130 | Minimax XT Crocodile Clip Kit | 11-05763 | . |
| Minimax-XT-03 | Minimax XT Interactive Product Guide CD | 11-05764 | . |

LUMIDOR MINIMAX XP - The Lumidor Minimax XP personal detector is able to monitor a single gas from a range of oxygen and toxic gases. Utilizing cell output delay compensation, in conjunction with patented sensor technology the Minimax XP ensure accuracy and reliability while providing a cost effective instrument. User flexibility is achieved with built-in menus, and the on/off operation of the instrument provides up to 3 years of battery life under typical use. All Lumidor Minimax XP instruments provide 2 levels of instantaneous alarm, STEL and TWA alarms, and have audible, visual and vibrating as standard. All Lumidor Minimax XP instruments are supplied with a case clip, test adaptor, manual and an optional interactive product guide CD is available. Designed to meet IP54 water ingress protection.

| Model | PN | Price |
|---------------|----------|-------|
| Minimax-XP-O2 | 11-05766 | . |
| Minimax-XP-CO | 11-05767 | . |

LONG LIFE CARBON MONOXIDE DETECTOR



No longer do you have to replace that Carbon Monoxide Detector every 28 days, the new Quantum Eye Carbon monoxide detector offers a minimum 18 months of sensor life. P/N 09-35601.....

STANDARD CARBON MONOXIDE DETECTOR



Carbon monoxide is odorless and colorless, but this economical little stick-up pad gives you a visible warning if it's present in the cockpit (or car or garage). A little graying of the color spot means a little gas: if it turns black, the concentration is dangerous. Adhesive backed. Spot returns to normal color after being exposed to fresh air. P/N 09-35600.....
5 or more...../ea.

ASA CARBON MONOXIDE DETECTOR




Carbon Monoxide (CO) is a toxic, odorless, and tasteless gas produced by the incomplete combustion of gasoline, kerosene, natural gas, butane, propane, fuel oil, wood, coal, and other fossil fuels. Dangerous levels of CO can be produced by internal combustion engines or from any poorly vented or improperly adjusted fuel-burning appliance. Exposure to CO may cause sickness, headaches, or even death. P/N 13-05755.....

PS


WINDMETERS - WEATHER STATIONS

WINDSCRIBE HANDHELD WIND METER




WindScribe is a precise, handheld wind meter (anemometer). In addition to registering the current wind speed, the WindScribe also measures maximum headwind, maximum tailwind, a five-second average wind, and a running average wind. Speeds can be displayed in both U.S. and metric units, and the unit also records temperature - useful for figuring out whether fog may form soon - and wind chill. The WindScribe weighs 3.5 ounces and comes with a lanyard. A velcro strap and mounting bracket are included. P/N 13-04019.....

WIND WIZARD WIND SPEED INDICATOR ECONOMY MODEL - ACCURATE & COMPACT




A single scale eliminates the need to shift back and forth between two scales when wind conditions are variable or gusty. Conveniently calibrated in miles/hour, meters/second and Beaufort. Expanded in the lower wind speed range of 0-20 MPH (0-8.9 meters/sec). Slips easily into a shirt or coat pocket. Safety wrist strap gives added security in stronger winds, and stores out of the way in the folding handle. Constructed of high impact plastic and corrosion resistant metals. It comes with leather-like carrying case. No Batteries needed. P/N 13-18520.....

SKYWATCH GEOS 11 HANDHELD WEATHER STATION




With features never before found on a handheld weather instrument, the GEOS 11 was designed specifically for the demanding needs of many markets: Aviation; reading of the Flight Level, height, finesse, pressure, altitude, altitude variation, etc.. Features: Electronic Compass: • analogical and digital Three Data Recording Modes: • manual recording by pressing two buttons • automatic recording at selected intervals, when unit is off or on • automatic recording at selected intervals, when unit is on only. Bright LED Light: • operates on separate battery. Replaceable Ball Impeller: • rotates to protect impeller blades. Exposed Sensors for instant readings P/N 13-04757.....

SKYWATCH HANDHELD WIND METERS




Designed for consumer and professional use, the Xplorer does not include complicated and seldom-used features such as downloading and storing. Press one button, and instant readings are at your fingertips. Dimension: 3.5 x 1.5 x 0.75 in, 2 oz. (41 x 93 x 17 mm, 50 g) One button operation, EL Backlight Completely sealed; internal sensors, Weatherproof (can be submerged 6 feet), Replaceable Lithium battery (included and installed), Stainless steel back, Auto-off after one minute (can be disabled to remain on), Included lanyard One year warranty. Handheld Weather 1 P/N 13-04760 Handheld Weather 4 P/N 13-04762.....

WINDLING WIND METER



Most compact electronic anemometer available. Features: * Displays wind speed in MPH, Km/Hr, Knots, Met/Sec, and Ft/Sec * Displays Current Wind Speed * Displays Maximum Wind Speed * Features back light * Includes Replaceable Lithium Battery (CR2032) * Water Resistant to 3 feet (1 m) * Great gift item Specifications * Size: 3.6"H x 1.6"W x 0.6"D, 1.8 oz * Lithium battery * 4 year warranty on battery * Measuring range: 0 to 99.99 * Resolution: 0.1 units * Case: Rugged polycarbonate, waterproof to 10 feet * Precision: ±4% from 16° F to 122°F (10° to 50°C) P/N SKWWIND.....


WEATHER WIZARD III WEATHER STATIONS



Includes all of the most requested features of a professional-quality weather station: inside and outside temperature, wind direction, wind speed, and wind chill. Highs and lows are maintained for most functions, and may be quickly viewed along with the time and date they occurred. Programmable alarms alert you to changes in weather conditions. Information may be displayed in U.S. or metric units of measure. Wind speed displayed in either mph, kph, kts, or meters/sec. Comes with mounting base Autoscan routine reviews all weather conditions, or enter your own scan selections. Compact size: 5.25"x5-7/8"x3" ...P/N 13-14010 Optional Rain Collector (0.1 mm)P/N 13-14035 Mounting Tripod.....P/N 13-04569.....


Call for special pricing!

SM-19 SKYMATE PLUS WIND METER




* Current, maximum windspeed * Average windspeed over 5, 10, or 13 seconds * Current temp & windchill * Relative Humidity & Dewpoint * Choose any measurement unit * Reads in tenths * Replaceable 400 hour lithium battery * Data Hold to freeze most recent display * Replaceable plastic impeller won't corrode * Comes with lanyard * Threaded for tripod mounting * Unique pocket-knife design to protect unit when not in use * Auto shutoff 20 minutes after last key is pressed * Water resistant housing High visibility case Floats. P/N 13-01960..... Carrying Case P/N 13-02202.....


SPEEDTECH INSTRUMENTS




SKYMASTER WEATHERMETER SM-28 - This easy to use, pocket-size weather station features complete wind speed functions and includes a severe weather audio alarm. The relative humidity, barometer, and altimeter functions can be recalibrated, if required. Skymaster is water resistant, floats, threaded for tripod mounting and comes with a lanyard. One year warranty. Features: • Windspeed • Relative Humidity & Dew Point • Altitude • Current barometric Pressure • 16-HR Pressure Graph • Severe Weather Audio Alarm • Temperature/Windchill/Heat Index. P/N 13-02957.....




SKYMATE WINDMETER - Convenient pocket-knife design, accuracy, features, and price make this the best value in handheld wind meters! It is water resistant, it floats, and it has a high visibility case. Average wind speed over 5, 10, or 13 seconds. Current temp & wind chill. Choose any measurement unit. Reads in tenths. Replaceable 400 hour lithium battery. Data lock feature. Replaceable plastic impeller won't corrode. Easy to read LCD. Threaded for tripod mounting. Unique pocket-knife design to protect unit when not in use. Water resistant to 3 ft. High visibility case. One year warranty. Features: • Windspeed • Temperature • Windchill • Water Resistant to 3 Feet. • Floats • Safety Yellow case P/N 13-00086.....




WM-100 WINDMATE 100 - Current, Average (5,10,13 secs) Maximum wind speed all use a wind vane to ensure most accurate measurements. For long-range shooting, use the tripod fitting and add the optional wind tunnel accessory. All wind functions in user selected units * Reads in tenths * Backlight * Tripod fitting * Rugged water-resistant case * Comes with adjustable lanyard. Features: Current wind speed • Average wind speed (5, 10, 13 seconds) • Maximum wind speed Mph, Kt, Kp/h, BF, FPM, M/Sec. Wind vane assures you are on the wind's axis • Tripod fitting • Fits wind tunnel accessory • Rugged water-resistant case meets U.S. military specifications • Auto shutoff • Comes with adjustable lanyard P/N 13-04292.....



WM-200 WINDMATE 200 - Offers the most popular features in a handheld device, wind speed and temperature, with wind chill calculation. Single button operation, easy measurements, and the display has a backlight; handy for lowlight conditions. Each unit is water resistant, and has a tripod fitting. Features: * Digital wind direction in degree & compass points * Cross and head/tail wind readings * Temperature * Windchill * Backlight Specifications: * Windspeed accuracy +/- 3% from 8-89Mph * Wind speed range to 135Mph * Digital compass/wind direction accuracy +/- 2° * Temp/Windchill accuracy +/- 1.8° F * Optional Units: Mph, km/h, kt, ft/min, m/s, BF (Beaufort) * F or C * Avg windspeed over 10 secs * Max windspeed 2 sec gust since power on * Auto shutdown * POWER: CR2032 replaceable Lithium battery (included) * Measures: 5.5" x 1.75" x .75" closed * Weighs 3.2oz with battery * 2-yr warranty P/N 13-04293.....



WM-300 WINDMATE 300 - Wind speed and digital wind direction, relative humidity, dewpoint, wet bulb & Delta T make this a comprehensive tool for forestry, agriculture and emergency management professionals. Humidity sensor does NOT require adjustment; it is self-calibrating. This unit is equipped with a backlight. Accuweather.com® patented Comfort Index™ gives the effect of temp, relative humidity, wind speed, & sun intensity on the human body. Unit can be tripod mounted. Features: * Relative Humidity (self-calibrating sensor) * Dewpoint * Delta T * Accuweather.com patented * Jackknife case allows most accurate temp & RH readings * Wind speed range to 135Mph * Optional Units: Mph, km/h, ft/min, m/s, BF (Beaufort) * F or C * Avg wind speed over 10 secs * Max wind speed 2 sec gust since power on * Auto shutdown * POWER: CR2032 (400-Hr) replaceable Lithium battery (included) * Measures: 5.5" x 1.75" x .75" closed * Weighs 3.2 oz with battery * Comes with breakaway lanyard * 2-yr warranty. P/N 13-04294.....



WM-350 WINDMATE 350 - Time • Date • Alarm • 48-HR history for all functions Digital Hr-By-Hr & Bar Graph • Current, Avg., Max wind speed in Mph, Kt, Kp/h, FPM, M/Sec, Beaufort • Digital wind direction in degrees & compass points • Cross and head/tail wind readings • Wind vane improves accuracy • Relative humidity • Wet Bulb (°F/°C) • Dewpoint (°F/°C) • Delta T • Barometric pressure (inHg/hPa) • Density Altitude (Ft/m) • Weather forecast • Audio storm alarm • Temperature (°F/°C) • Windchill • Altimeter to 29,000 Ft/9000m • AccuWeather.com® patented Comfort Index™ • Backlight • Tripod fitting • Fits wind tunnel accessory • Case meets military specifications • Comes with adjustable lanyard. Replaceable Lithium battery (included) MEASURES: 5.5" x 1.75" x .75" closed 9" x 1.75" x .75" open WEIGHS: 3.2 ounces with battery. P/N 13-05763.....

SKYMATE ACCESSORIES

Adjustable nylon case (fits all models)..... P/N 13-02202..... Wind tunnel (maximize wind meter accuracy) P/N 13-02201..... Speedtech Rail Mount (AP-15)..... P/N 13-02204..... Speedtech Back Stay Mount (AP-16) P/N 13-02203.....



WEATHER STATIONS – FLASHLIGHTS



WIRELESS VANTAGE PRO2 WEATHER STATION

Uses frequency hopping spread spectrum radio technology to transmit data wirelessly up to 1000' (300 m). Console/receiver, integrated sensor suite, and mounting hardware. Integrated sensor suite includes rain collector, temperature and humidity sensors, anemometer, 40' (12 m) anemometer cable, and solar panel. Sensor suite is solar powered. AC-power adapter included for console, or use with three C batteries (not included). Wireless range is up to 1000' outdoors, line of sight. Typical range through walls 200' to 400'. Add wireless repeaters for distances up to 1.7 miles.
 Vantage Pro2 (U.S.) P/N 13-05532
 Vantage Pro2 Plus with UV & Solar Radiation .P/N 13-05586
 Mounting Tripod P/N 13-04569

MAGLITE LED FLASHLIGHTS



MAG-LED™ Technology known for their obsession with precision engineering, craftsmanship and commitment to perfection, was not satisfied with the performance of a "regular" LED as a usable light source. They set their sights on producing a light source that would not only incorporate longer battery life, but would also have the kind of durability, reliability, and performance Maglite®

flashlights are known for. With an emphasis on uncompromising performance, MAG-LED™ Technology is the result of that quest.
 LED Mini Maglight 2-cell AA - Black P/N 13-04722
 LED Mini Maglight 2-cell AA, w/Holster - Grey Pewter P/N 13-04917
 LED Mini Maglight 3-cell AA - Black P/N 13-04723
 LED Mini Maglight 3-cell AA - Grey Pewter P/N 13-04879
 LED Maglight 2 Cell D hang pack- Black P/N 13-04724
 LED Maglight 2 Cell D hang pack- Grey Pewter P/N 13-04880
 LED Maglight 3 Cell D hang pack- Black P/N 13-04725
 LED Maglight 3 Cell D hang pack- Grey Pewter P/N 13-04881
 LED Maglight 4 Cell D hang pack- Black P/N 13-04726
 LED Maglight 4 Cell D hang pack- Grey Pewter P/N 13-04882

ACCESSORIES PACK - Includes: Pocket clip, lanyard wrist strap with key ring, anti-roll device, red, clear, and blue lenses.
 P/N 13-04727

MAGLITE D CELL ACCESSORY PACK



Mounting Brackets (Fit D-Cell Only)
 Mount your Mag-Lite® flashlight on a wall, in a vehicle, boat, airplane or home. Lens Holder / Anti-Roll Device This item both retains a colored lens and helps prevent the flashlight from rolling off irregular surfaces. Note: The Lens Holder and Lenses may also be used on "C" cell Mag-Lite® flashlights
 P/N 13-04886

MAGLITE FLASHLIGHTS

Mini Maglight AA - Black..... P/N 13-04913.....
 Maglight 2 Cell D - Black..... P/N 13-04915.....
 Maglight 3 Cell D - Black..... P/N 13-04916.....

ASA LED FLIGHTLIGHT



This AirClassics™ LED Flightlight is durable, compact, and bright -- ideal for the flight bag where space and convenience are priority. The flashlight has both white and green bulbs, making this an effective tool for preflight, night flying and chart reading. ASA wings logo imprinted in silver. Typical battery life is a solid 10 hours. P/N 13-06426

THE ASHLIGHT



13-04347



13-04348



13-04349

The ASHLIGHT has been designed and tested by pilots. The super-bright red LED light provides the ultimate in hands-free cockpit lighting with a flip of the switch. The ASHLIGHT is designed with a stainless steel spring that duplicates the original ashtray clip for easy snap-in installation! The majority of aircraft manufacturers (Cessna, Beech, Bellanca, Grumman, Mooney, Piper, etc.) all used a standard ashtray opening of 1.5h x 2.125w or 1.6h x 4.7h side panel mounted ashtray. Smaller planes used the Standard Size while larger planes such as KingAir, Chiefian, later model Barons and Bonanzas, etc. use the Large size. If your aircraft does not have an ashtray, the Visor Clip Model is an excellent alternative!

Standard Ashlight P/N 13-04347
 Large 5" Ashlight P/N 13-04348
 Visor Ashlight..... P/N 13-04349

FLIGHTLIGHT™ - PILOT FLASHLIGHT



This AirClassics™ flashlight has both white and red lenses for preflight and night flying, extra Krypton bulb stored within, is water-tight, corrosion resistant, and features a clicking ON/OFF for maximum battery life. Focuses from spot to flood light. Black machined aluminum with ASA wings logo. Two AA batteries and PR-1 bulb included.

Flashlight: P/N 13-01067
 Bulb: P/N 13-02320



FLIGHT LIGHT PEN

See what you write — even at night! Saves pilots from using an overhead light when writing in a low-light situation, and the green LED light will maintain a pilot's night vision — LED lasts a lifetime! The flashlight cap enables pilots to look for items nearby, serving as a temporary illuminant. The clip on the cap allows for easy storage. Includes 2 LED lights, and 2 button cell batteries. 5 1/4" x 3/4".
 P/N 13-01099

BEND-A-LIGHT

Bend to any configuration and illuminate hard-to-reach areas where conventional lighting cannot go. The incredibly brilliant light beam penetrates anywhere! A must for electronics, automotive, maintenance, repairs, locksmiths, industrial, hobbies, around the house and more. The only complete line of professional quality high intensity flexible light tools. Available in 3 lengths and 3 different lamps to choose from. Made in USA and come with batteries installed.

| Part No. | Description | Length Flex Shaft | Length Overall | Batt. | Bulb | Price |
|----------|--------------------------|-------------------|----------------|-------|-------|-------|
| 12-15005 | Mini Pro | 6" | 11.5" | 2-AAA | 12100 | . |
| 12-15150 | Pro | 15.75" | 24" | 3-AA | 12110 | . |
| 12-10250 | Removable Shaft | 9.5" | 15.75" | 2-AA | 12100 | . |
| Part No. | Description | Dia | Bulb Life | Price | | |
| 12-15020 | 12100 - Replacement Lamp | 5/32" | 4 Hours | . | | |
| 12-12110 | 12110- Krypton Lamp | 5/32" | 20 hours | . | | |

AVIATOR'S QUIQLITE



Extra Bright LED, available with Red, Green, White or Blue Light. Handy pocket clip and rotating arm. Rotating "light arm" allows you to place the light where you need it. Push-button On-Off switch with convenient 7 minute Auto-Off feature. Over 40 hours of light using replaceable lithium watch batteries (included). Fits easily into shirt or uniform pocket.

Blue LED Quiqlite P/N 13-02719
 Green LED Quiqlite..... P/N 13-02728
 Red LED Quiqlite..... P/N 13-02729
 White LED Quiqlite P/N 13-02730

MASTERVISION CAP LIGHT



The best hands free flashlights available! Bright lightweight LED flashlight that clips to a regular cap. Water resistant!, Great for night flying! Weighs only 1.24 ounces! 3 LED bulbs with 10,000 hour burn time! 4 lithium coin cell batteries for approximately 24 hours of life!

G1 Original Caplight 13-03723
 G1 Stalker Caplight 13-03724
 Battery for Caplight..... 13-03726

SURE CHECK FUEL LIGHT



Will assist in ensuring your safety every time you strain test your fuel prior to flight. At night, it's safe & easy to use. The Sure Check Fuel Light, when used with your fuel test tube, will light up all the water and debris that might be present.

The case is made of durable aluminum, comes in a variety of colors, weighs only 2.2 ounces, is 3" long, and uses a 12 volt battery to power a high intensity white LED light build. The casing is sealed with a strong neoprene rubber seal to keep any fuel from leaking into the case. Made in USA.

| Description | Part No. | Price | Description | Part No. | Price |
|-------------|----------|-------|-------------|----------|-------|
| BLACK | 13-04210 | . | BLUE | 13-04208 | . |
| GOLD | 13-04206 | . | PINK | 13-04211 | . |
| GREEN | 13-04209 | . | RED | 13-04207 | . |

SAFE-LIGHT SUPER BRIGHT FLASHLIGHTS



Lightweight and palm-size yet powerful, with ultra-long battery life(9v battery included). Emergency Strobe plus other essential safety modes: Constant Glow, Power-Save, High Beam, L.E.D., Power-Save mode . Also available with blue, green or red LED.

White LED ...P/N 13-04151 Blue LED .. P/N 13-04152.....
 Green LED ..P/N 13-04153..... Red LED .. P/N 13-04154.....

PILOT FLASHLIGHTS

SUREFIRE AVIATION FLASHLIGHTS



Long known as a major supplier of quality flashlights to law enforcement and the military, Surefire has just made available a new flashlight built for aviators that combines two widely different light sources in a single compact illumination tool providing dual power and variable output. Surefire flashlights feature the finest beams, reflectors, switches and powerful tungsten lamps available on the market today. They are not inexpensive but for the pilot looking for a truly unique, high quality, reliable flashlight, Surefire is the answer. Surefire flashlights carry a lifetime warranty (excluding batteries and lamps).

The **A2 Aviator** features a high-output incandescent lamp producing 50 lumens surrounded by 35mm LED's set in a specially designed parabolic reflector. The Aviator's digitally controlled two-stage switch allows the pilot to choose LED's for soft light illumination in the cockpit or high output lamp for bright illumination during preflight inspection of your aircraft. The high beam on the A2 Aviator can illuminate the tail of a 747 from the ground. That's over 63 ft high! Not bad for a flashlight that measures only 5.6" in length and weighs only 4 oz. The A2 Aviator comes standard with a gray-green super-tough Type III hard anodized finish to military specifications, because it is the best and the toughest. It is powered by 2 lithium batteries, is shock-proof, water-resistant and comes with a lifetime guarantee (excluding batteries and lamps). Length: 5.9"



The **L1 Lumamax** features a 1W Luxeon LED which produces 15 lumens from one Surefire 3V lithium battery, which is three times brighter than a conventional mini light running on two AA alkaline. For the pilot needing only the soft light of LED lighting for cockpit illumination, the L1 Lumimax is an excellent choice. Length: 4.6"

The **G2 Nitrolon** is Surefire's most economical flashlight, and uses 2 lithium batteries to produce 65 lumens of diamond bright light for 60 minutes. The G2 is constructed of Black Nitrolon, a polymer compound that is lightweight, corrosion-proof, and non-conductive. Depress the tailcap on the G2 for momentary illumination or rotate fully inward for constant-on illumination. Length: 4.9"

The **E2d Defender** is constructed from aerospace-grade aluminum coated in a super rugged military-specification finish, the pocket-size E2D Defender also features an optically-coated Pyrex® lens; high-energy, ten-year shelf-life lithium batteries; a stainless steel pocket clip, and law enforcement-style click-on/off momentary switching for blinding flashes or emergency signaling.



- A2 Aviator with green LEDs P/N 13-02017
- A2 Aviator with white LEDs P/N 13-02018
- L1 Lumamax with white LED P/N 13-02019
- L1 Lumamax with green LED P/N 13-02020
- G2 Nitrolon flashlight (Plastic Body) P/N 13-02021
- E2d Defender flashlight P/N 13-03204

SUREFIRE ULTRA U2 FLASHLIGHT



Compact (palm size) high-intensity variable-output LED flashlight for tactical, duty, and general use. Uses a virtually indestructible light-emitting diode (LED) to provide six output levels, from a long-running low beam to a brilliant white tactical-level high beam almost seven times the light of a big two D-cell flashlight. Ring selector provides instant output control. Electronic current regulation maintains a more consistent level of light output for the useable life of the batteries. Variable output, compact size, extended-runtime low beam and high-output beam capability, and 10-year battery shelf life also make it perfect for backpacking or camping and for disaster preparedness kits. P/N 13-04710

123 Lithium Battery for the U2 Ultra..... P/N 13-04711

SUREFIRE REPLACEMENT BULB MA02



The MA02 lamp assembly fits A2 Aviator flashlights and produces 50 lumens of light for 1 hour. P/N 13-04438

STREAMLIGHT FLEXIBLE FLASHLIGHT



The Streamlight has a 6.21" flexible, insulated cable extension allows 14 inches for hard-to-reach areas. Made of silver aircraft aluminum casing and a tough PVC shielded cable. Unbreakable, 100,000-hour white LED that never needs replacing. It has a runtime of up to 60 hours. (4) AAA batteries included. Wt: 1.1 oz. P/N 13-03142

PELICAN AVIATION LIGHTS VERSABRITE



This is the world's brightest swivel head pocket flashlight. The adjustable head swivels 180 degrees, enabling the pilot to direct the beam where he needs it. It is water resistant and mounts directly on the adhesive pad of yoke chart holders. Provides 6000 candlepower Xenon laser beam spot beam, and comes standard with clear, red, and blue-green lenses. Clips easily on shirts, belts, and caps for hands free use. Comes with multi-use velcro fasteners and 2 AA batteries.

P/N 13-00561

Versabrite mounting clips (1 top, 1 side mount)

MICRO ONE WATT LED FLASHLIGHT



The new Micro FlashLED is more powerful than most LED flashlights on the market today. It has a 1-Watt, 80-Lumen LED chip that emits over 4,300 End-foot candles (4300cd) of bright, cool white (8000 Kelvin) light that's powerful enough and lasts long enough to light your way — all the way home. Features: * One Year Warranty * One Watt, 80 Lumen LED Chip * Focussable Lens: Narrow and Wide Beam * Puts out over 4,300 End-Foot Candles of light * Retains 50% of its light output after 1 hour of continuous use * Visibility approx. 2 miles, depending on atmospheric conditions and line of sight * Lights for 4 days (96 hours) at a diminishing light output rate * Micro FlashLED High Brightness Light can induce dizziness in criminals' eyes in a few seconds. * Uses 3 standard AAA batteries * Rugged Anodized Aluminum Body Finish * Push button on/off switch * Weight: 3.5 oz. without batteries, 4.8 oz. with batteries P/N 13-06456



SUPER MITYLITE WITH PELIKNIFE
This handy light features a 6000 candlepower pocket light with a laser sharp pre-focused beam. Only 4.5" long, this light is virtually unbreakable and is submersible to 600 ft. Includes a lock back pocket knife which is 3" long when folded and features a 2" long stainless steel blade. Incl. 2 AA batteries, key chain ring, pocket clip. P/N 13-00567

PILOT'S HANDY LANYARD LIGHT



This emergency light with a break-away neck lanyard is great for use around any aircraft. Ideal for pre-flight inspections after dark, providing you with a small, powerful flashlight which you can simply hang around your neck as you preflight the aircraft. Also makes the perfect cockpit light in an emergency. Furnished with blue-green and red lenses for night flying as well as a standard clear lens. Includes lanyard & 1 AAA battery. P/N 13-00571

MINI LED FLASHLIGHTS



Our original astro flashlights, much imitated but never duplicated, are back! More compact at only 3.5 inches long, 2 inches shorter than water resistant version, and for a tiny price! NOT water resistant (sorry there's only so much we could squeeze in), but all the other great features in a smaller, lighter case. Features: •DUAL Ultra-bright LEDs -- The best and the brightest with lifetimes of 100,000+ hours, never break, and provide smooth illumination. •Thumbwheel Brightness Control -- Dial up just the right amount of light and extend battery life. •Energy Efficient -- Up to 320+ hours at the dimmest setting, 12+ hours at the brightest, from one 9V Alkaline. •Exclusive brightness regulation circuitry -- keeps the LEDs shining bright as batteries age, unlike competitors LED flashlights which start bright but quickly fade. •9 Volt Battery & 20 inch neck strap included
White & Red.....P/N 13-04696

Red & Green.....P/N 13-04697

MYGRIPLIGHT (LED)



Multi purpose product that performs as an organizational tool as well as a multi purpose light. The organizational tool organizes writing instruments, cell phones, eyeglasses, flight charts and other documents by means of a patented polyester snap-in-lock structure to secure these items. The patented multi purpose light is connected to the organizational tool by means of a flex-arm. The light has 360 degree rotation and can be removed from the organizer to act as an independent lighting instrument. The light offers both white and red light illumination on demand. MyGripLight mounts to most any surface by use of Velcro® fasteners that is supplied with the product. It can be mounted permanently by the use of screws through the mounting slots built into the organizational tool. P/N 11-07540



FLASHLIGHTS

XEVISION PERSONAL LED FLASHLIGHTS



The compact LED flashlights are so small that they fit in the palm of a hand comfortably. They are so bright, even die-hard HID Xenon lighting technology purists can not resist.

Super-bright white light from one small but powerful LED

Our LED flashlights feature the latest commercial Cree LED 7090 XR-E, which delivers unprecedented levels of bright white light. The legendary 7090 XR-E is tested to the

highest standards in the LED industry. The white light generated is as cool as HID with around 4000°K to 5000°K. The current draw is quite small while the LED is very efficient with a luminous flux of up to 100 lm min. @ 350 mA, and a luminous efficacy up to 75 lumens/watt.

XeVision personal LED flashlight models

The compact LED flashlights are so small that they fit in the palm of a hand comfortably. They are so bright, even die-hard HID Xenon lighting technology purists can not resist.

XV-C1C - Is their most compact LED flashlight using one long-lasting 3 VDC Lithium CR123A battery. The XV-C1C features six settings, 4 of them being output levels. This flexibility not only allows the user to select the best compromise between brightness and runtime for any given task but also has the ability to aid in an emergency. The XV-C1C offers a remarkably compact size and is extremely solid and reliable with its digitally regulated brightness. One 3 VDC CR123A Lithium battery

- XV-C1C (Black)PN 13-05144.....
- XV-C1C (Iridium)PN 13-05147.....

XV-C2C - Features six settings, 4 of them being output levels. This flexibility not only allows the user to select the best compromise between brightness and runtime for any given task but also has the ability to aid in an emergency. The XV-C2C offers a remarkably compact size and is extremely solid and reliable with its digitally regulated brightness. Two 3 VDC CR123A batteries (Lithium), not rechargeable.

- XV-C2C (Black)PN 13-05145.....
- XV-C2C (Iridium)PN 13-05148.....

XV-C2A - Features six settings, 4 of them being output levels. This flexibility not only allows the user to select the best compromise between brightness and runtime for any given task but also has the ability to aid in an emergency. The XV-C2A offers a compact size and is extremely solid and reliable with its digitally regulated brightness. Two 1.5 VDC AA (Alkaline, Lithium) or 1.2 V NiMH batteries.

- XV-C2A (Black)PN 13-05146.....
- XV-C2A (Iridium)PN 13-05149.....

ACCESSORIES

| Model | Description | Part No. | Price |
|---|--|----------|-------|
| WF-138C Charger for XeVision XV-C2C | Charger for a single or pair of over-discharge protected R-CR123A rechargeable Li-Ion cells. Comes with 2 R-CR123A cells. | 13-05141 | . |
| WF-138 Charger only | Just the charger - for the WF-123 combo package | 13-05140 | . |
| ICR123 Rechargeable Lithium Batteries | These ICR123 rechargeable 3 V batteries used for the XV-C2V LED flashlight. Note that the standard CR123A batteries must not be recharged! | 13-05139 | . |
| CR123A Single Cell Lithium Technology | 1 Titanium 3 V CR123A battery. For the XV-C1C LED flashlight. Prevents excessive discharge that can damage lithium cells and may lead to catastrophic incidents. | 13-05142 | . |
| CR123AX2 Twin Cell Lithium Batteries | 2 Titanium CR123A batteries are carefully matched and form one single sealed unit, 3 V but double capacity). Used for the XV-C2C LED flashlight. Prevent excessive discharge that can damage lithium cells and may lead to catastrophic incidents. | 13-05143 | . |

ASA PILOT'S FLASHLIGHT



This AirClassics Aviation flashlight has both white and red lenses for preflight and night flying, and MIL spec blue-green lens for map reading. This Pilot Flightlight is water-tight, corrosion resistant, has an extra Krypton bulb stored within, and features a clicking ON/OFF for maximum battery life. Focuses from spot to flood light. This aviation flashlight is black machined aluminum with ASA wings logo. Two AA batteries and PR-1 bulb included.

P/N 13-01067.....

PILOTS 2 COLOR FLASHLIGHT

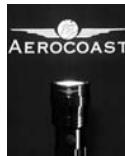


20 Bright White LEDs and 6 Red LEDs in an inexpensive aluminum flashlight - Ideal for pilots and flight crews

- Anodized aluminum housing with 26 LEDs
- 20 Super-bright White color LEDs for normal use
- 6 Bright Red color LEDs for use when pre serving night vision
- Water resistant push-button switch selects White-Off-Red-Off
- Uses 3 common AAA cells (included) for over 20 hours of use
- LEDs rated over 100,000 hours

P/N 13-05664.....

AEROCOAST LED FLASHLIGHT



Led Flashlight with 12 high intensity white LED bulbs. * Single color 12 led flashlight * 80 Lumens 100 hr battery life * Light weight aluminum casting * Battery type: 3 x AAA * Size: 42 x 147 mm P/N 13-06043.....

LED CAP LIGHT



5 Bright White LED Cap Light - Perfect for hand-free illumination during maintenance or trouble-shooting

- Lightweight, compact 5 LED hat light clips onto baseball caps
- Great for hands-free light during maintenance or troubleshooting

- Uses two (2) lithium coin cells for up to 96 hours of illumination
- Blister packaged with batteries
- Five extra-bright White LEDs with a life of over 100,000 hours

P/N 13-05662.....

THE LIGHTED PILOT PEN



Professional LED Writing Instrument for Pilots, Flight Crews, Law Enforcement and Military Use. Features: • Aircraft aluminum housing with on/off LED lighting and rotating top cap ink cartridge retraction. • Works as either a standard pen or for writing in low light or dark conditions. • Uses one

common AAA cell for up to 20 hours of illumination • Gift box packaged with an extra ink cartridge and extra AAA cell • Two extra-bright White LEDs with a life of over 100,000 hours P/N 13-05278.....

PILOT'S COCKPIT UTILITY & EMERGENCY LIGHT



See all your panel control settings, maps, charts, compass, and log books. Choose red light for night vision, or bright white light. Designed to travel anywhere, the Navigation Light can be clipped to most surfaces or used free-standing. Uses: * Aviation * Marine * Automotive * Trucking * RV * Emergency Response Vehicles Features: * Four different light level options * Two red LEDs in one head and two white LEDs in a second

allow for lighting versatility * Dual flexible arms provide infinite maneuverability * Sensor switches on each lighting head require just a tap to turn on one or both LEDs * Optical grade lens provides evenly distributed light with no hot spots * Easily bends to compact position for storage * Offers 20 hours of continuous use on 3 AAA batteries * Extra strong clip grips almost anything * Uses 3 AAA batteries (included) or available AC Adapter (110-240 Volts) (not included) P/N 11-05821.....

ASA TRI-LITE NAVIGATOR



The Tri-Lite flashlight is equipped with red, green, and white LEDs providing maximum flexibility and everything the pilot needs to

maintain night vision while also providing the true-color options necessary for accurate chart, fuel, and oil color interpretation. Hands-free operation is made possible by 3 Velcro®-like (3M Dual Lock) mounting strips. The light can be snapped onto headsets, kneeboards or other flat surfaces, and can be quickly removed and re-attached. When attached to a headset, a focused beam of light is directed wherever the pilot looks. P/N 13-05753.....

PETZL HEADLAMPS

PETZL HEADLAMPS

In 1972, when Petzl invented the first headlamp, the idea of attaching a light and its battery case to a headband was quite innovative. A hands free light source that can be directed where needed, allows the user to perform almost any activity. Headlamps have now become an important factor in safety and efficiency. Thought innovative use of technology (LED's and current regulators), impact-resistant of headlamps that can be used in many situations...from the simplest tasks to the most demanding work and rescue applications. All headlamps include batteries.

TIKKA PLUS HEAD LAMP/TILT/MOD



P/N 11-06771



P/N 11-06772



P/N 11-06774

4 LED headlamp with 3 lighting levels
Lighting level can be adjusted to help conserve battery life
* 4 LED produce flood beam lighting with a long burn time,
* 3 lighting levels (maximum, optimum, economic).
* Single compartment contains LED and batteries
* 78 g including batteries.
* Beam can be easily aimed where needed,
* Comfortable and adjustable elastic headband.
* Certification - CE

E47PM Yellow and Black Camo P/N 11-06771
E47PS blue and Black Splatter P/N 11-06772
E47PT Green and Black Splatter P/N 11-06773
E47PBY Black and Grey Stripe P/N 11-06774

TACTIKKA PLUS/FLIP FILTER RED (E49P)



TacTikka Plus 4 LED Headlamp with Red or White Light, 3 Power Settings & Flash, Alternates easily between white and red light simply by moving the pivoting filter over the reflector. Features: •3 Power Settings & Flash •Tilt Focus •Long battery life up to 110 hours •Lightweight and comfortable to wear: ergonomically designed elastic headband. •Water-resistant for all-weather use •Operates with three AAA-LR03 batteries (supplied) •Weighs 78g •Includes Batteries.
P/N 11-05096

TIKKA LED TILT HEAD LAMP



46P2- LED headlamp with red flip down filter, and tilting head. 3 LED array produces long-lasting and even light. Features: •Produces diffuse, proximity lighting. •Red filter for discrete light and preservation of user's night vision. •Flip-down filter makes it easy to switch between red and white light. •Light beam can be easily aimed where desired. •Adjustable and comfortable elastic headband. •Water resistant for all-weather use. •Black lamp and headband.
P/N 11-04990

TACTIKKA CAMO BAND RED FLIP UP E46PC



TacTikka LED Alternates easily between white and red light simply by moving the pivoting filter over the reflector. Long battery life up to 110 hours. Lightweight and comfortable to wear: ergonomically designed elastic headband. Water-resistant for all-weather use. Also available in CAMOUFLAGE version: elastic headband and lamp head in camouflage color.
P/N 11-04988

TIKKA LED TILTING HEAD LIGHT (E43P2)



Ultra-light 3 LED headlamp with elastic headband. The Tikka is the most compact and lightest headlamp of our range. With a 150 hour burn time, it is ideal for long term close-up work, as it gives a very white light. The reliability and long life of the LED makes it very safe. It has an on/off switch.
P/N 11-05094

MYO HEADLAMP 3 BLACK 3 LED 1 HALOGEN E27PN



Features: •4 hour burn time Xenon bulb - 180 hour burn time for the 3 LEDs •Lightweight, compact, and extremely versatile this one light can do it all. •Switch lock mechanism prevents the light from draining your batteries when stored •Tilting head mechanism allows you aim the light where it is needed most •Spare Xenon Halogen bulb included with headlamp. Water resistant - won't short out even if submerged
P/N 11-05099

MYO 5 HEADLAMP LED/HALOGEN E28P



bulb included with headlamp. Water resistant - won't short out even if submerged

P/N 11-04994

MYO HEADLAMP XENON HALOGEN E32P



The Myo is Petzl's simplest headlamp, featuring a super bright Xenon halogen bulb. Its compact design has a tilt features as well as focusable beam. An ideal light for times when you need a bright light with your hands free. Features: •Maximum range 100 m •Supplied with spare 6 V standard bulb •Operates with 4 AA alkaline batteries (included) •LEDs available, providing brilliant white light for over 100,000 hours of continuous burn time - they will never need to be replaced.
P/N 11-04992

DUO 5 HEADLAMP PETZL LIGHTS E69



The DUO lamps are ideal for use in wet environments, but are not designed for prolonged submersion (i.e. diving). Features: • Waterproof with dual light source: focusable halogen bulb and an LED module. • Switching on & off, brightness selection, zooming • The DUO lamps allow the light to be optimized (distance, duration) according to your needs. • Simultaneous use of both bulbs is not possible. • Unlocking/locking the bezel
P/N 11-04996

ZIPKA PLUS/PUSH BUTTON SWITCH E48P



Ultra-light 4-LED headlamp with 3 lighting levels and retractable cord. Retractable cord can be used to attach lamp to the head, the wrist, wrapped around a pipe, etc. Features; •Very lightweight. •Three lighting levels (maximum, optimum, economy) and a blinking mode. •Long light duration up to 150 hours. •Water-resistant for all-weather use.
P/N 11-04989

PILOT LED HEADLAMP



The Pilot LED Headlamp is designed specifically for pilots operating in nighttime conditions, and offers reliable, convenient, hands-free illumination. The triple 10,000+ hr LED bulbs and 50 to 160+ hr battery life (vs. approx. 6 hours for a Mini Mag-Lite) promise reliability far in excess of normal flashlights, and practically eliminate burned-out bulbs and dead batteries. The Pilot is a compact, ultra-lightweight, waterproof, hands-free lighting system that's comfortable to wear (even with headphones), is furnished with a hard clamshell case, and comes with a 3yr warranty.
P/N 12-00719

BELT BATTERY PACK MYO 5 E33P



Belt Mounted Battery Pack for MYOSB5. Features: •Maximum level: ideal for climbing or moving quickly on technical ground •Economy level: ideal for reading maps, setting up a tent.
P/N 11-04991

PS

FLASHLIGHT HOLDERS - ARM RESTS

ASTRO ARM FLASHLIGHT HOLDERS MERCURY MODEL

Astro Arm is the perfect device when you need your flashlight directed precisely while having both hands available to perform a task. These holders are great for aviation, marine, automotive, racing, and emergency lifesaving applications. Available in Mercury models for smaller flashlights and Gemini models for larger flashlights. P/N 13-04005.....



ASTRO ARM FLASHLIGHT HOLDERS - MERCURY-MAGNETIC

Astro Arm is the perfect device when you need your flashlight directed precisely while having both hands available to perform a task. These holders are great for aviation, marine, automotive, racing, and emergency lifesaving applications. P/N 13-04006.....



ASTRO ARM FLASHLIGHT HOLDERS GEMINI

Astro Arm is the perfect device when you need your flashlight directed precisely while having both hands available to perform a task. These holders are great for aviation, marine, automotive, racing, and emergency lifesaving applications. Available in Mercury models for smaller flashlights and Gemini models for larger flashlights. P/N 13-04007.....



ASTRO ARM FLASHLIGHT HOLDERS GEMINI

Astro Arm is the perfect device when you need your flashlight directed precisely while having both hands available to perform a task. These holders are great for aviation, marine, automotive, racing, and emergency lifesaving applications. Available in Mercury models for smaller flashlights and Gemini models for larger flashlights. P/N T13-04008.....



CLIPSTICK

The Clipstick features a flexible Loc-line that provides sturdy support, allowing a product to be positioned in numerous angles while maintaining its shape. With 3" oversized spring-loaded clips fastened to each end of the connectors, the Clipstick firmly holds many of the standard items a pilot will utilize during a flight. P/N 13-03430.....



THE SNAKE CLIP

Introducing the SnakeClip™, a unique aviation cradle which holds a variety of personal electronic items such as cell phones, PDA's and iPods. Attaching and detaching in seconds, the portable SnakeClip™ can be transferred between planes and automobiles for maximum utility. Like its predecessor, the ClipStick, it can be attached to multiple surfaces in the cockpit and won't sag or lose its surface grip over time. No installation necessary - simply clamp the SnakeClip™ onto a suitable surface and it's ready to "bite". The padded adjustable arm on the cradle expands to hold items up to 2.5" wide, and features a quick-release button for easy device removal. Clip under cradle can hold numerous items such as pens, notepads and most GPS units. Mounting arm is composed of industrial-grade flexible connectors which provide rigid support, yet allows the unit to swivel & bend in hundreds of angles maintaining its shape. The versatile clips contain rubber pads for surface protection & have 3.25" clamping area. The SnakeClip™ measures 12" fully extended.. One-year warranty. P/N 13-05549.....



THE PORTABLE ARMREST FOR PILOTS

Introducing the 100% portable center armrest for airplanes that makes flying comfortable. An ongoing problem for general aviation aircraft has been the absence of a center armrest for the pilot and co-pilot which leads to fatigue. Instant Armrest has finally solved this problem. Other armrest products are airplane specific and require drilling, bolting, and mounting hardware. Professional pilots, renters, and student pilots can now own an affordable armrest that they can take with them on every flight, even when they change planes. * Fits any aircraft * Fits flat or bucket seats *Fits right and left seats * Ready to use in 1 second * Adjustable *Fits in flight bag * Lightweight aluminum P/N 13-03154.....



SIDESTICK CONTROL ARM RESTS

The side stick control arm rests will steady the hand, which improves flying and reduces wrist and arm fatigue. The arm rests were designed by an orthopedic specialist to reduce wrist and hand carpal tunnel syndrome. They can also be used for throttle rests. Color: Black. ABS plastic. Furnished as right/left set. P/N 13-03265.....



COCKPIT COMPANION ORGANIZERS

The Cockpit Companion provides a convenient organizer for the loose items pilots shuffle in the cockpit. It is easily installed with Velcro between the front seats and features clean out windows at bottom of the storage areas. Holds fire extinguisher, charts, books, transceiver, headsets, glasses, wallet, fuel strainer, flashlight, pens, highlighters, and more. Attractive and durable, the Cockpit Companion is built from top-grade smoked acrylic. Made in USA.



STYLE #172 - Fits most Cessna 172's plus any other aircraft with this available space. Top portion dimensions: 22" Long (plus 4" headset post) 8" Tall (12" total w/bottom), 3" Wide Bottom extinguisher dimension: 22" Long 4" Tall (12" total w/top), 4-1/4" Wide. Features removable pencil "divider" for easy cleaning. All are outside dimensions! P/N 13-02710.....



STYLE #182 - Fits most 182's, 206's, 210's & other aircraft with this available space. Dimensions: 18" long plus (4" headset post) 12" Tall 4-1/4" Wide All are outside dimensions! Be sure to measure your available space prior to ordering! P/N 13-02715.....

MAP, CHECKLIST & LOG BOOK HOLDERS

These holders come in three sizes to store your maps, checklists and log books. They are thermoformed from ABS plastic, and come in either black or gray.



| Description | Size | Color | Part No. | Price |
|---------------|----------------|-------|----------|-------|
| Map/Checklist | 9"x10"x 5/8" | Black | 13-03085 | . |
| Aircraft Log | 4-1/2"x7"x1/4" | Black | 13-03086 | . |
| Engine Log | 6-1/2"x7"x1/2" | Black | 13-03087 | . |
| Map/Checklist | 9"x10"x 5/8" | Gray | 13-03088 | . |
| Aircraft Log | 4-1/2"x7"x1/4" | Gray | 13-03089 | . |
| Engine Log | 6-1/2"x7"x1/2" | Gray | 13-03090 | . |

UNCLE MIKES SEAT ORGANIZER

Designed to keep paperwork, clipboards, books, notepads, radios, phones, water bottles, thermos bottles, pens and pencils in reach and in place and not sliding around the cabin or rolling around on the floor, the sturdy, water repellent 1200 Denier nylon fabric Seat Organizer is loaded with compartments and pouches and secures to the passenger seat headrest with a dual purpose strap designed to be used as a shoulder strap when outside of the aircraft or vehicle. P/N 13-04034.....



PLANE POCKETS

Nine pockets protect and organize your cockpit and keep your equipment like new. Three large pockets with drawstrings hold POH Charts, Approach Plates, Sectionals. An additional three more pockets are designed to hold your handheld radio, cameras, manuals, batteries, oxygen mask, and many other items. Top pockets will hold paper, sunglasses, water, flashlights and cables. Lightweight, rip-stop nylon, easy to install. Your headrest must be able to be removed to install pockets. Must supply number of inches between the centers of headrest post. With Headrest... P/N 13-04160..... W/O Headrest... P/N 13-04161.....



PS

LEATHERMAN POCKET TOOLS

SQUIRT® P4



Features: • Needlenose Pliers • Straight Knife • Wire Cutters • Extra Small Screwdriver • Medium Screwdriver • Small Flat Phillips Screwdriver • Single-Cut File • Cross-Cut File • Opener • Lanyard Attachment Awl
Specifications: Length: 2.25"/ 5.5cm closed, Weight: 2 ounces / 57 grams, Materials: Stainless steel with anodized aluminum scales

Available Colors: Storm (gray), Glacier (blue), Inferno (red), Powder (pink)
PN 13-05556.....

SQUIRT® S4



Features: • Scissors • Straight Knife • Tweezers • Extra-Small Screwdriver • Medium Screwdriver • Small Flat Phillips Screwdriver • Nail File/Cleaner • Opener • Lanyard Attachment • Ruler
Specifications: Length: 2.25"/ 5.5cm closed, Weight: 2 ounces / 57 grams, Materials: Stainless steel with anodized aluminum scales

Available Colors: Storm (gray), Glacier (blue), Inferno (red), Powder (pink)
PN 13-05557.....

SQUIRT® E4



Features: • Wire Strippers (20GA, 18GA, 16GA, 14GA, & 12GA) • Electric Wire Cutters • Spring-Action Needlenose Pliers • Extra Small Screwdriver • Small Screwdriver • Phillips Screwdriver • Straight Knife • Wood/Metal File • Tweezers • Bottle Opener • Key Ring Attachment

Specifications: Length: 2.25"/ 5.5cm closed, Weight: 1.9 ounces / 54 grams, Materials: Stainless steel with anodized aluminum scales
Available Colors: Storm (gray), Glacier (blue), Inferno (red)
PN 13-05558.....

JUICE® S2



Features: • Needlenose Pliers • Straight Knife • Wire Cutters • Hard-Wire Cutters • Extra-Small Screwdriver • Small Screwdriver • Med/Lrg Screwdriver • Phillips Screwdriver • Lanyard Attachment • Can/Bottle Opener
Specifications: Length: 3.25"/ 8.25cm closed, Weight: 4.3 ounces / 122 grams, Materials: Stainless steel with anodized aluminum scales

Available Colors: Storm (gray) Inferno (red)
PN 13-05559.....

JUICE® C2



Features: • Needlenose Pliers • Straight Knife • Wire Cutters • Hard-Wire Cutters • Extra-Small Screwdriver • Small Screwdriver • Med/Lrg Screwdriver • Phillips Screwdriver • Lanyard Attachment • Can/Bottle Opener • Scissors

Specifications: Length: 3.25"/ 8.5cm closed, Weight: 4.3 ounces / 122 grams, Materials: Stainless steel with anodized aluminum scales
Available Colors: Storm (gray), Inferno (red)
PN 13-05560.....

JUICE® CS4



Features: • Needlenose Pliers • Straight Knife • Wire Cutters • Hard-Wire Cutters • Extra-Small Screwdriver • Small Screwdriver • Med/Lrg Screwdriver • Phillips Screwdriver • Lanyard Attachment • Can/Bottle Opener • Corkscrew with Assist • Scissors • Saw • Awl

Specifications: Length: 3.25"/ 8.25cm closed, Weight: 5.5 ounces / 156 grams, Materials: Stainless steel with anodized aluminum scales
Available Colors: Storm (gray), Glacier (blue)
PN 13-05561.....

JUICE® XE6



Features: • Needlenose Pliers • Straight Knife • Wire Cutters • Hard-Wire Cutters • Extra-Small Screwdriver • Small Screwdriver • Med/Lrg Screwdriver • Phillips Screwdriver • Lanyard Attachment • Can/Bottle Opener • Corkscrew with Assist • Scissors • Saw • Awl • Serrated Knife • Diamond File

Specifications: Length: 3.2"/ 8.25cm closed, Weight: 6.8 ounces / 190 grams, Materials: Stainless steel with anodized aluminum scales
Available Colors: Storm (gray), Thunder (purple)
PN 13-05562.....

TOOL ADAPTERS



3 Locking Positions, Lanyard Hole Tool Adapters make your favorite Leatherman tool even more versatile by quickly converting it to a 7/16" hex drive. Standard Tool Adapter fits PST, PST II, Super Tool 200, Sideclip, Flair and Pulse. Wave Tool Adapter fits Wave only. Sold as a kit with six hex bits and case. Also available in a combination sheath with PST, PST II, Super Tool 200 and Wave.
P/N13-02723.....

CRUNCH TOOL



Locking Pliers, Wire Cutters, Hard-Wire Cutters, Serrated Knife, Metal/Wood File, Ruler (Inch/Metric), Bottle Opener, Small Screwdriver, Medium Screwdriver, Large Screwdriver, Phillips Screwdriver (#1/#2), Hex Bit Driver, Wire Stripper, Lanyard Attachment

WAVE TOOL



Needlenose Pliers, Regular Pliers, Wire Cutters, Hard-Wire Cutters, Clip-Point Knife, Serrated Knife, Saw, Scissors, Wood/Metal File, Diamond-Coated File, Large Bit Driver, Small Bit Driver, Large Screwdriver, Ruler (8 inch/19 cm), Bottle/Can Opener, Wire Stripper, Lanyard Attachment, Two Double-Ended Bit
P/N 13-03289.....

BLAST



Needlenose Pliers, Regular Pliers, Wire Cutters, Hard-Wire Cutters, Clip-Point Knife, Wood/Metal File Saw, Scissors, Large Screwdriver Small Screwdriver, Phillips Screwdriver Small Bit Driver, Ruler (8 inch/19 cm) Bottle/Can Opener, Wire Stripper Lanyard Attachment One Double-Ended Bit
P/N 13-03286.....

FUSE



Needlenose Pliers, Regular Pliers Wire Cutters, Hard-Wire Cutters, Clip-Point Knife, Scissors, Large Screwdriver, Small Screwdriver, Phillips Screwdriver, Ruler (8 inch/19 cm), Bottle/Can Opener, Wire Stripper, Lanyard Attachment
P/N 13-03287.....

CHARGE TTI



The Charge TTI features a cutting hook, scissors, outside-accessible blades, bit drivers, crimpers and more. But we had to give the TTI its own claim to fame. That's where the comfort-sculpted titanium handles and the S30V® stainless steel clip-point knife come in. Grab a hold of one today and you'll quickly see why the Charge models are the pinnacle of our multi-tool collection.
PN 13-04514.....

KICK



Needlenose Pliers, Regular Pliers, Wire Cutters, Hard-Wire Cutters, Clip-Point Knife, Large Screwdriver, Small Screwdriver, Phillips Screwdriver Ruler (8 inch/19 cm), Bottle/Can Opener, Wire Stripper, Lanyard Attachment
P/N 13-03288.....

CHARGE XT1



Titanium Handles, Needlenose Pliers, Regular Pliers, Wire Cutters, Hard-Wire Cutters, Crimper, 154 CM Clip-Point Knife, Serrated Knife, Cutting Hook, Saw, Wood/Metal File, Diamond-Coated File, Two Large Bit Drivers, Small Bit Driver, Large Screwdriver, Ruler (8 inch/19 cm), Bottle/Can Opener, Wire Stripper, Fixed Lanyard Ring, Quick-Release Lanyard Ring, Removable Pocket Clip, Nine Double-Ended Bits
P/N 13-03290.....

CORE



Stainless Steel Body, All-Locking Blades, Needlenose Pliers, Regular Pliers, Wire Cutters, Hard-Wire Cutters, Stranded - Wire Cutters, Electrical Crimper, Clip-Point Knife, Serrated Knife, Wood/Metal File, Saw, 5/16" Screwdriver, 7/32" Screwdriver, 1/8" Screwdriver, Phillips Screwdriver, Awl w/Thread Loop, Ruler (9 inches/22 cm), Bottle/Can Opener, Wire Stripper, Lanyard Ring
P/N 13-04045.....

CHARGE AL



Charge® AL includes scissors that slice through just about anything with beveled edges that allow them to get close to whatever you're cutting, for a clean trim every time. Bit drivers for versatility, diamond-coated files for fine-point work and a 154CM clip-point knife are all housed in 6061-T6, hard-anodized aluminum alloy handles. Rounded edges for grip comfort and a stainless steel badge make this a Leatherman that's really earned its name.
PN 13-04515.....

CHARGE ALX



Take the Charge AL and replace the scissors with an aggressive cutting hook on the back of the serrated blade and you've got the Charge® ALX. Rip through tough materials like seatbelts, linoleum and leather with no problem. Get your hands around the same unbeatable ergonomic grip, outside-accessible blades and premium materials like 154CM and 6061-T6, heat-treated, alloy aluminum.
PN 13-04523.....

PS

PILOT WATCHES

T1 TORGOEN TITANIUM BLACK

The Flight Computer Watches can be used to calculate time, distance and speed equations. It also can perform a variety of calculations from currency conversions to multiplication and division problems. With the watch you can calculate any conversion of linear nature with a constant ratio such as ounces to grams, kilograms to pounds, miles to kilometers etc.

P/N 13-05053

T2 TORGOEN WATCHES - T2 watches offer Flight

Computer capacity with a moveable external, crenate ring. Capacity to perform E6B functions or even quickly perform currency conversions while shopping in a foreign country. Handsome. Comfortable. Available in dressy 2-tone finish. Swiss-made chronograph movement, stainless steel case. Water resistant to 50 meters. Model shown: Silver dial/black leather band. P/N 13-02489

T5 TORGOEN WATCHES - T4 Zulu Time watches

provide Dual-time zone function using a 24-hour hand - it makes 1 revolution every 24 hours, instead of 12. The 24-hour hand can be positioned to show the time in a second time zone. Large numbers and superior luminescence make these watches easily readable at a glance, day or night. Swiss-made movement, stainless steel case. Water resistant to 100 meters. Leather or stainless steel band models available. Model shown: Black dial/black leather band. P/N 13-02502

T7 TORGOEN FLIGHT COMPUTER WATCHES

Torgoen's line of Flight Computer Watches can be used to calculate time, distance and speed equations. It also can perform a variety of calculations from currency conversions to multiplication and division problems. With the watch you can calculate any conversion of linear nature with a constant ratio such as ounces to grams, kilograms to pounds, miles to kilometers etc.



P/N 13-05045



P/N 13-05048

| Description | Part No. | Price |
|--|----------|-------|
| Stainless Steel Black Dial, Band is Black PU, Water Resistance 100 meters | 13-05044 | . |
| Stainless Steel Black Dial, Stainless Steel Band, Water Resistance 100 meters | 13-05047 | . |
| Stainless Steel Yellow Dial, Band is Black PU, Water Resistance 100 meters | 13-05045 | . |
| Stainless Steel Yellow Dial, Stainless Steel Band, Water Resistance 100 meters | 13-05048 | . |
| Stainless Steel Green Dial, Band is Black PU, Water Resistance 100 meters | 13-05046 | . |
| Stainless Steel Green Dial, Stainless Steel Band, Water Resistance 100 meters | 13-05049 | . |

T8 TORGOEN ZULU TIME WATCHES

- 3 time zones - 12 hour format
- High Grade Stainless Steel case
- Screwed Down Stainless Steel Back
- Mineral K1 hardened crystal
- Solid Links Stainless Steel Bracelet or PU Strap
- Swiss Quartz with 12 hours Dual Time hand Movement by Ronda.
- Water Resistant for 10 ATM (330 feet).



P/N 13-05051



P/N 13-05050

| Description | Part No. | Price |
|--|----------|-------|
| Stainless Steel Black Dial, Band is Black PU, Water Resistance 100 meters | 13-05028 | . |
| Stainless Steel Black Dial, Stainless Steel Band, Water Resistance 100 meters | 13-05027 | . |
| Stainless Steel Yellow Dial, Band is Black PU, Water Resistance 100 meters | 13-05051 | . |
| Stainless Steel Yellow Dial, Stainless Steel Band, Water Resistance 100 meters | 13-05050 | . |

VIBRALITE3 VIBRATION WATCHES

Great for Private and Confidential Reminders! Has auto-reset countdown timer. The vibration on your wrist from VibraLITE3 will remind you to do any important thing without annoying others. What's really great is that you don't have to hear the alarm to know that it's signalling you.



This watch is especially nice for pilots, students (taking exams), and of course the deaf and hard of hearing. Since the watch also features an Auto Reload Countdown Timer, it can be the ideal answer for those who need reminding of times to take medicine, scheduled daily activities and more.

With stainless steel band P/N 13-02541

With leather band P/N 13-02542

VIBRALITE 8 VIBRATION WATCHES

8 MODEL VL8A-BK - Black Polyurethane Band .

EIGHT VIBRATION ALARMS for variable reminders up to 8 alarms can be preset
COUNTDOWN TIMER with Auto Repeat Feature for interval reminders. set when wanting the same alarm time to repeat automatically each time the countdown timer reaches zero.

USER ALARM OPTIONS: Vibration, Sound, and Hourly Alert ON or OFF choices are set and Secure in separate Option Mode.

EL LIGHT: turns on by a twist of the wrist or the push of a button. Light stays on while any button is pushed, for settings in the dark..

3 TIME ZONES can be set for reference

STOPWATCH counts up to 23 hours, 59 minutes, and 59.99 seconds

12 OR 24 Hour CLOCK SELECTION

• One Year Warranty P/N 13-04892

MODEL VL8SL-BK - Genuine black leather band .

EIGHT VIBRATION ALARMS for variable reminders up to 8 alarms can be preset
COUNTDOWN TIMER with Auto Repeat Feature for interval reminders. set when wanting the same alarm time to repeat automatically each time the countdown timer reaches zero.

USER ALARM OPTIONS: Vibration, Sound, and Hourly Alert ON or OFF choices are set and Secure in separate Option Mode.

EL LIGHT: turns on by a twist of the wrist or the push of a button. Light stays on while any button is pushed, for settings in the dark..

3 TIME ZONES can be set for reference

STOPWATCH counts up to 23 hours, 59 minutes, and 59.99 seconds

12 OR 24 Hour CLOCK SELECTION P/N 13-04947

MODEL VL8SS-GT - Stainless Steel Band with genuine gold trim.

EIGHT VIBRATION ALARMS for variable reminders up to 8 alarms can be preset
COUNTDOWN TIMER with Auto Repeat Feature for interval reminders. set when wanting the same alarm time to repeat automatically each time the countdown timer reaches zero.

USER ALARM OPTIONS: Vibration, Sound, and Hourly Alert ON or OFF choices are set and Secure in separate Option Mode.

EL LIGHT: turns on by a twist of the wrist or the push of a button. Light stays on while any button is pushed, for settings in the dark..

LARGE DIGITS ON THE DISPLAY for easy viewing.

3 TIME ZONES can be set for reference

STOPWATCH counts up to 23 hours, 59 minutes, and 59.99 seconds

12 OR 24 Hour CLOCK SELECTION P/N 13-04948

AIRCRAFT SPRUCE WALL CLOCK



Aircraft Spruce wall clock with a black frame. The quality quartz movement is made in the USA and comes with a lifetime guarantee. Imprint size: approximately 4-1/2" diameter. Attractive presentation box included. P/N 13-06209

PILOT WATCHES

SUUNTO WATCHES

Suunto watches are world-renowned for their high quality construction and design. The Suunto brand name means precision and durability - so whatever you use your Suunto watch for, you'll have the peace of mind that comes with wearing an accurate instrument that you can trust under any circumstances. The timeless design of Suunto's watches make them wearable in any casual situation, and because of their moderate size, they are perfectly suitable for both men and woman.

SUUNTO VECTOR WATCHES



An instrument that you cannot leave home when planning any kind of outdoor activity. Features: * Altimeter: Altitude, vertical speed, altitude alarm, logbook, vertical difference measurement, automatic 24h altitude memory, temperature compensation. Logbook capacity 8 kB, recording intervals 20s, 1min, 10min and 60min, with respective times 10h, 12h, 7 days and 10 days * Barometer: Sea level pressure, absolute pressure, pressure difference, pressure trend indicator, 4-day barometric memory, temperature * Compass: Cardinal bearing, North-South arrow, bearing tracking, declination setting * Chronograph: Stopwatch, countdown timer, calendar, three daily alarms * Water resistant to 30 m (100 ft) * Temperature resolution 1°C/1°F * Weather memory 4 days * Temperature range -20°C - +60°C/-5°F - +140°F * Weight 54 g * Operating temperature -20°C - +60°C/-5°F - +140°F * Water resistance 30m/100ft * Storage temperature -30°C - +60°C/-22°F - +140°F

- Black/Black..... P/N 10-19325.....
- X-Black/Black with Negative Face P/N 13-04420.....
- Yellow/Black with Negative Face P/N SUN8K08Y.....
- Khaki..... P/N SUN8K07R.....
- Foliage Green..... P/N SUN8K03R.....

SUUNTO X-LANDER WATCHES



An accurate altimeter, a complete barometer, a precise electronic compass and a multi-functional sports watch in a one elegant package. Extremely user-friendly and has easy-to-use logic, a large display with big numerals and an electro-luminescent backlight for dimly lit conditions. Non-allergenic aluminum casing, carbon fiber back, a durable mineral crystal glass, and a water resistant fabrik strap

- Stainless Case and Negative Face.....P/N 13-06558.....
- Stainless Case and Military Black Face.....P/N 13-06559.....

BLUE ANGELS SKYHAWK AT



* Atomic Timekeeping with Radio-Controlled Accuracy * World Time in 43 Cities * 2 Alarms * 99 Minute Countdown Timer * Perpetual Calendar and more.

- Stainless Steel bandP/N 13-06459.....
- Blue Polyurethane Band.....P/N 13-06460.....
- Titanium bandP/N 13-06461.....

P/N 13-06461

CITIZEN SKYHAWK FLIGHT CHRONOGRAPH



* Time & Calendar - 22 Time Zones (30 Cities) * Three World Time Alarms * 99 Min. Countdown Timer * 1-Touch Interchangeable Analog/ Digital Times * Rotating slide rule bezel * Screw back case

- Stainless Steel bandP/N 13-01418.....
- Titanium bandP/N 13-03587.....

P/N 13-03587

CITIZEN NIGHTHAWK WATCHES

• Pilot's Slide Rule Dial Ring Operated by Crown at 8 O'Clock Position • Large Luminous Markers for Easy Readability • Non-Reflective Crystal • Dual Time

- Stainless Steel Band P/N 13-03581.....
- SSI Black Ion Plating..... P/N 13-03582.....



P/N 13-03581

CITIZEN SKYHAWK A-T WATCHES

* Atomic Timekeeping with Radio-Controlled Accuracy * World Time in 43 Cities * 99 Minute Countdown Timer * Perpetual Calendar * Digital Display Light * Greenwich Mean Time Display * Rotating Slide Rule Bezel * Power Reserve Indicator

- Stainless Steel BandP/N 13-05581.....
- SS Black Ion Plating P/N 13-06458.....
- Polyurethane Band..... P/N 13-05587.....
- Titanium BandP/N 13-05588.....

P/N 13-05587

BLUE ANGELS SKYHAWK

The Blue Angels Skyhawk Flight Chronograph commemorates the highly skilled flying team. • Time and Calendar in 22 Time Zones (30 Cities) • Three World Time Alarms • 1/100 Second Chronograph Measures up to 24 Hours

- Stainless Steel Band..... P/N 13-05591.....
- Titanium Band.....P/N 13-05592.....

P/N 13-05591

BLACK EAGLE SKYHAWK

Designed to soar with unbridled stealth and precision.

- Polyurethane Band.....P/N 13-05595.....
- SSI Black Ion Plating..... P/N 13-05596.....

P/N 13-05596

SUUNTO OBSERVER WATCHES



Features: *Altimeter: Altitude, vertical speed, logbook function with quick-access button, memory capacity 99 logs, history memory, alti/baro lock, temperature compensation *Barometer: Sea level pressure, absolute pressure, weather trend indicator, temperature, automatic 4-day barometric memory, alti/baro lock *Compass: Bearing, cardinal bearing, bearing tracking, *North-South arrow, declination setting *Chronograph: Calendar, 3

- alarms, dual time, stopwatch with 99 split/lap times Material options: Suunto Observer Sr - stainless steel housing with elastic strap (80 g), Suunto Observer St - stainless steel housing with stainless steel elastomer strap (100 g), Suunto Observer Tt - top-of the-line model - titanium housing with titanium elastomer strap (75 g), Suunto Observer Black - stainless steel case with stainless steel strap, and Suunto Observer St Black - stainless steel case with elastomer straps
- Observer SR Black.....P/N 13-06555.....
- Observer ST Black.....P/N 13-06556.....
- Observer TT.....P/N 13-06552.....
- Observer ST.....P/N 13-04418.....
- Observer SR.....P/N 13-06554.....

SUUNTO CORE WATCHES



Suunto Core keeps you informed with an accurate altimeter, barometer, digital thermometer, Weather Trend Indicator and digital compass. The pressure gauge operates in four distinct modes, including an automatic setting that senses your movement or lack thereof, switching between altimeter and barometer accordingly. The compass features a rotating bezel for traditional use, or a one-touch function that allows

you to sight, lock and follow a bearing. Daily functions include dual time, date, alarm, sports chronograph and predicted times for sunrise and sunset. * Standard strap style is pictured.

- Core Standard Strap Steel /Steel..... P/N 13-06610.....
- Core Standard Strap Alum./Brown Leather..... P/N 13-06599.....
- Core Standard Strap Black/Orange P/N 13-06611.....
- Core Light strap Black /Yellow P/N 13-06607.....
- Core Light strap Black /Green..... P/N 13-06608.....
- Core Light strap Black/Black P/N 13-06609.....

SUNNTO ACCESSORIES

- Suunto Battery Kit SSOS4700000 P/N SUNBATT.....
- Sunnnto Bike Mount..... P/N SUN51BIKE.....
- Sunnnto Core Aluminum Strap P/N 13-06613.....
- Sunnnto Core Leather Black Strap P/N 13-06614.....
- Sunnnto Core Flat Black Strap..... P/N 13-06615.....
- Sunnnto Core Flat Orange Strap P/N 13-06616.....

REVUE THOMMEN WATCHES

At the beginning of the 1920s, the company Revue Thommen started manufacturing aircraft instruments. It is for this reason that it has more familiar with special needs of pilots than any other watch manufacturer. The Airspeed Classic self-winding wrist-watches and chronographs were inspired by the instrument panels of commercial and military aircraft that are equipped with Revue Thommen precision instruments. These instruments are characterized by clear, easy-to-read numerals, hands and displays and are fitted with a self-winding mechanical movement or with a quartz movement. The casing is made from stainless steel or titanium, a material favoured by the aerospace industry.



REVUE THOMMEN SWISS A/S WATCH - Airspeed Line Classic. Calibre ETA 2836-2 (automatic watch with date hand). All stainless steel case, screw-in steel case back, anti-reflective double-faced sapphire crystal, water-resistant to 100 m / 330 feet. Assorted dials. Diameter 37.5 mm / 32.5 mm.

P/N 13-05158.....



REVUE THOMMEN SWISS A/S QUARTZ - Airspeed Line Classic. Calibre ETA 251.262 Chronograph Quartz. Titanium case, screw-in steel case back, anti-reflective double-faced sapphire crystal, water-resistant to 100 m / 330 feet. Assorted dials Diameter 37.5 mm.

P/N 13-05159.....



REVUE THOMMEN SWISS WATCH X-L - Airspeed Line Xlarge. CalibDD 2824-A2 Chronograph (automatic watch with date indication). All stainless steel case, screw-in steel case back, anti-reflective double-faced sapphire crystal, water-resistant to 50m/160 feet. Assorted dials. Diameter 41mm.

P/N 13-05160.....

PS

SUNGLASSES

RAY-BAN AVIATION SUNGLASSES



Ray-Ban is the leading brand in the high quality sunwear market segment and by far the best-selling sunwear brand in the world. It is an all American Brand created 1937 with the Aviator style, developed for use by the pilots of the U.S Air Force.



| Style | Frame Color | Lens Color | PN | Price |
|---------|-------------|-------------------------------------|----------|-------|
| RB 3025 | ARISTA | G-15 XLT 62mm | 13-04984 | . |
| RB 3025 | ARISTA | Light Polarized Natural Green 1.8mm | 13-04985 | . |
| RB 3025 | BLACK | G-15 XLT 62mm | 13-04986 | . |
| RB 3025 | BLACK | Light Polarized Natural Green 1.8mm | 13-04987 | . |
| RB 3025 | GUNMETAL | G-15 XLT 62mm | 13-04988 | . |
| RB 3025 | GUNMETAL | Light Polarized Natural Green 1.8mm | 13-04989 | . |
| RB 3025 | ARISTA | G-15 XLT 58mm | 13-04990 | . |
| RB 3025 | BLACK | G-15 XLT 58mm | 13-04991 | . |

G-15XLT is a Grey Color



| Style | Frame Color | Lens Color | PN | Price |
|---------|-------------|------------|----------|-------|
| RB 3221 | GUNMETAL | G-15 XLT | 13-04978 | . |
| RB 3221 | MATTE BLACK | G-15 XLT | 13-04996 | . |

G-15XLT is a Grey Color



| Style | Frame Color | Lens Color | PN | Price |
|---------|-------------|---------------|----------|-------|
| RB 3309 | ARISTA | G-15 XLT 55mm | 13-04998 | . |

G-15XLT is a Grey Color

RB3026



| Style | Frame Color | Lens Color | PN | Price |
|---------|-------------|------------|----------|-------|
| RB 3026 | BLACK | G-15 XLT | 13-04992 | . |
| RB 3026 | ARISTA | G-15 XLT | 13-04993 | . |

G-15XLT is a Grey Color

RB3310



| Style | Frame Color | Lens Color | PN | Price |
|---------|-------------|--------------|----------|-------|
| RB 3310 | ARISTA | G-15XLT 55mm | 13-04999 | . |

G-15XLT is a Grey Color

RB3030



| Style | Frame Color | Lens Color | PN | Price |
|---------|-------------|------------|----------|-------|
| RB 3030 | ARISTA | G-15 XLT | 13-04994 | . |
| RB 3030 | BLACK | G-15 XLT | 13-04995 | . |

G-15XLT is a Grey Color

RB3339



| Style | Frame Color | Lens Color | PN | Price |
|---------|-------------|---------------|----------|-------|
| RB 3339 | MATTE BLACK | G-15 XLT 59mm | 13-05001 | . |

G-15XLT is a Grey Color

VEDALOHD™ PERFORMANCE SUNGLASSES

FRAME STYLES



High-Definition Lens Technology (HDL-3C™), built into new sunglasses offer improved sight definition for pilots, using color, clarity and comfort. These lenses filter the visible spectrum to improve color contrasts; decentered lenses increase visibility and eliminate distortion; visual health is improved and eye fatigue is reduced thanks to lightweight frames. Visibility is said to be increased through tristimulus color contrast enhancing techniques; other color tinting techniques improve color simulation but only improves one basic color type in the color spectrum.

These non-polarized (important for pilots!) lenses come in two lens types: rose (for low light conditions), and smoke (for bright light conditions). The sunglasses are very lightweight and comfortable. We offer a 30-day money back guarantee if you're not satisfied. Several choices for frames are available.



ARGENTO
Ultra Light Aviator



ROSSO
Small Square



TITANIO
Hinged Square



AZZURRO
Fashion Rectangle



VERDE
Large Oval



RAME
Classic Yet Fashionable



GIALLO
Hot new look from Italy!



NERO
Sport Fashion Wrap



MARRONE
Faded Brown Wrap



ROSSO2 (HINGED)
Astonishing light Weight

| Description | Part No. | Price |
|-----------------------------------|----------|-------|
| ROSSO ULTRA LITE FRAMES SMOKE | 13-04022 | . |
| ROSSO ULTRA LITE BETA FRAMES ROSE | 13-04023 | . |
| ROSSO2 ULTRA LITE FRAMES SMOKE | 13-06099 | . |
| ROSSO2 ULTRA LITE FRAMES ROSE | 13-06102 | . |
| AZZURRO ULTRA LITE FRAMES SMOKE | 13-04026 | . |
| AZZURRO ULTRA LITE FRAMES ROSE | 13-04027 | . |
| ARGENTO ULTRA LITE FRAMES ROSE | 13-04028 | . |
| ARGENTO ULTRA LITE FRAMES SMOKE | 13-04029 | . |
| VERDE ULTRA LITE FRAMES ROSE | 13-04031 | . |

| Description | Part No. | Price |
|---------------------|----------|-------|
| RAME FRAMES ROSE | 13-04678 | . |
| RAME FRAMES SMOKE | 13-04677 | . |
| RAME FRAMES 2R | 13-04679 | . |
| GIALLO FRAMES ROSE | 13-04676 | . |
| GIALLO FRAMES SMOKE | 13-04675 | . |
| NERO FRAMES ROSE | 13-04673 | . |
| NERO FRAMES ROSE | 13-04672 | . |
| MARRONE FRAMES ROSE | 13-06119 | . |

PS

SUNGLASSES



Randolph Engineering has been a leading supplier of military sunglasses to the U.S. Armed Forces since 1982. These sunglasses are the choice of America's Top Gun pilots and NASA astronauts. They meet demanding U.S. military specifications, provide superior glare protection and UV absorption and can be converted to prescription lenses. All of the sunglasses below feature 23K gold plated, hand polished frames and come with a crush resistant case.

AVIATOR - Standard issue for military pilots worldwide. (MIL.SPEC. 25948). These lenses sharpen detail and show colors evenly, making them ideal for flying. Bayonet temples provide optimum fit for use with a headset or helmet.



| Size | Lens | Part No. | Price |
|------|------------|----------|-------|
| 52mm | Tan | 13-05775 | . |
| 52mm | Gray | 13-00679 | . |
| 52mm | Gray/Green | 13-00680 | . |
| 55mm | Gray | 13-00681 | . |
| 55mm | Tan | 13-00682 | . |
| 55mm | Gray/Green | 13-00683 | . |
| 58mm | Gray | 13-00684 | . |
| 58mm | Tan | 13-00685 | . |

CONCORDE - The Concorde features the world famous tear drop aviator lens design, monoblock hinge design, skull temple bars, and non-slip silicone nose pads. A very popular sunglass style with lenses that are convertible for prescription lenses.



| Size | Lens | Part No. | Price |
|------|------------|----------|-------|
| 57mm | Gray | 13-00687 | . |
| 57mm | Tan | 13-00688 | . |
| 57mm | Gray/Green | 13-00689 | . |
| 61mm | Gray | 13-00690 | . |
| 61mm | Gray/Green | 13-00691 | . |



CREW CHIEF - An updated version of traditional Randolph sunglasses. Crew Chief sunglasses has all the features of the American Pilot above in a slightly more tear drop shape lens design. Excellent for flying & driving. P/N13-00698

POLAR EYES PREMIUM POLARIZED SUNWEAR



PolarEyes® Sport Collection - PolarEyes sport sunwear provides Advanced UV Protection™. The patented designs utilize flexible hypoallergenic nylon Weightless

Frames™ (average weight 21 grams) paired with PolarPC polarized lenses to give the wearer not only maximum protection from glare and damaging ultra-violet light, but also an unsurpassed fit that is both comfortable and secure. Developed from 25 years of polarized sunglass manufacturing experience, PolarEyes offer protection like no other sunglass. Thermal ports eliminate moisture build up on the lens surface.

CASE AND CLOTH - All PolarEyes® sunglasses include a case and a large micro-fiber lens cloth.



PolarPC® Lens System - All Frames feature polarized UV400 PolarPC lenses that completely protect the

eyes from damaging UV light and eliminate harsh surface glare. Made from impact-resistant polycarbonate with a bonded hard-coat to resist scratching. Lenses are available in gray or copper tints.

| Frame Model | Frame Size | Frame Color | Lens Color | | Part No. | Price |
|-------------|------------|--------------|------------|-----------|----------|-------|
| | | | Copper | Gray/Both | | |
| ISLAY | Small | Russet | | • | 13-03180 | . |
| ISLAY | Small | Silver | • | | 13-03181 | . |
| ISLAY | Large | Black Silver | • | | 13-03184 | . |
| PISMO | Small | Black | | • | 13-03185 | . |
| PISMO | Small | Tortoise | | • | 13-03186 | . |
| PISMO | Large | Black | | • | 13-03187 | . |
| PISMO | Large | Tortoise | | • | 13-03188 | . |
| OBISPO | Small | Black | | • | 13-03189 | . |
| OBISPO | Small | Tortoise | | • | 13-03190 | . |
| OBISPO | Large | Russet | | • | 13-03194 | . |

SCHEYDEN FLIP-UP SUNGLASSES



Scheyden Precision Eyewear is simply Aviation's Finest Eyewear. With the Scheyden patented flip system & locking mechanism, pilots can instantly adapt to constantly changing light conditions with the flip of a finger. This unique function puts an end to fumbling around with glasses and headsets forever. Effortlessly FlipUp in lowlight conditions and FlipDown when the sun is bright.

The frames are fabricated in Titanium for incredible strength while weighing mere ounces. The manufacturing tolerances are extremely strict, rivaling those of the aerospace industry. Most importantly, all Scheyden Precision Eyewear offers 100% UVA and UVB protection for your most valuable resource - your eyes. Lenses are available in High Contrast Bronze and Neutral Gray.

Dual Rx options enable pilots to lighten their load to one eyeglass frame for all cockpit vision requirements.

All Scheyden Eyewear comes packaged in a luxurious Bubinga Rosewood case which

can be custom engraved with your name, tail number and/or company logo.

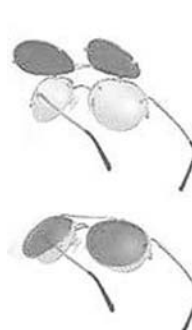
Scheyden Precision Eyewear offers a Lifetime Warranty on their frames and has the best lens replacement warranty in the eyewear industry.

Demand Precision. Demand Scheyden.

| Scheyden Style | Frame Color | Part No. | Price |
|----------------|-------------|----------|-------|
| Avalon | Titanium | 13-01524 | . |
| Avalon | Neutral | 13-04268 | . |
| El Capitan | Titanium | 13-01574 | . |
| El Capitan | Neutral | 13-04266 | . |
| Sonoma | Gun Metal | 13-01521 | . |
| Sonoma | Titanium | 13-01558 | . |
| Sonoma | Neutral | 13-04270 | . |

SCHEYDEN Fixed Gear Sunglasses (non flip up). Titanium Frame sunglasses with classic, timeless styling and incredibly crisp Mineral Glass lenses are available in the same styles at \$199.00 ea. Call for part numbers.

SCHEYDEN DUAL RX FLIP-UPS



Scheyden Dual Rx frames combine the ability to instantly adapt to changing light conditions while always keeping your prescription lenses in place. These frames are supplied with a lens template which is all your local optician needs to fabricate your prescription lenses. All frames are Titanium.

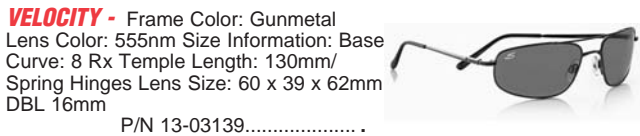
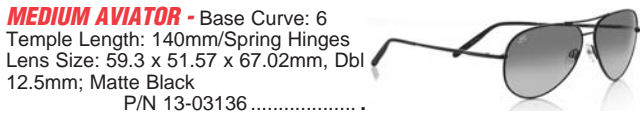
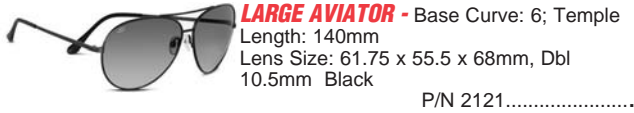
- Rx EL Captain Bronze.....P/N 13-04271
- Rx EL Captain Neutral GrayP/N 13-04272
- Rx Avalon BronzeP/N 13-04273
- Rx Avalon Neutral GrayP/N 13-04274
- Rx Sonoma BronzeP/N 13-04275
- Rx Sonoma Neutral GrayP/N 13-04276



SUNGLASSES

SERENGETI AVIATOR SUNGLASSES

Serengeti Aviators protect your vision while eliminating glare and sharpening details better than other sunglasses. Cloud boundaries are more easily delineated and oncoming traffic is more visible. Unique photochromic spectral controls improve your ability to see in marginal VFR and IFR conditions. In bright sunlight, you'll see the instruments better and ghost images will be eliminated from the cockpit. Wear them late in the day or at sunset to preserve your night vision.

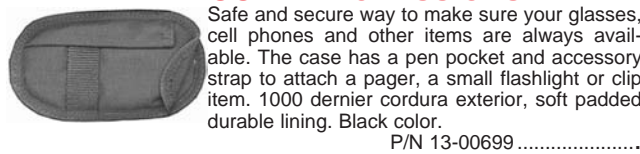


AMERICAN OPTICAL SUNGLASSES

Performance-tested sunglasses with classic aviator styling. The Original Pilot Sunglass® has been a favorite of US military pilots for more than 40 years. Engineered to rigid military specifications and issued to millions of US soldiers, sailors, marines and airmen since 1958. The rugged and sturdy structure and high quality finishing of the steel alloy frame coupled with distortion free, toughened and polished True Color® glass lens have made the AO Flight Gear® Collection the standard bearer of all fine military sunglasses.



BELT LOOP EYE GLASS CASE



OPTX 20/20 HYDROTAC STICK-ON READING LENSES

These stick-on lenses instantly turn any brand of sunglasses into sharp, clear reading glasses! They can be cut to the shape of any sunglass lens, and are removable & reusable; they adhere to the sunglass lenses by molecular attraction. Excellent for pilots using Ray Ban, Serengeti, Randolph and other aviator sun glasses, as well as outdoorsmen and anyone needing inexpensive corrected sunglasses. Available from 1.25 to 3.0 diopters in .25 diopter increments. Please specify magnification at time of order.

| Description | P/N | Price |
|-----------------|----------|-------|
| Optx 20/20 1.25 | 13-06301 | . |
| Optx 20/20 1.50 | 13-06302 | . |
| Optx 20/20 1.75 | 13-06303 | . |
| Optx 20/20 2.00 | 13-06304 | . |
| Optx 20/20 2.50 | 13-06306 | . |
| Optx 20/20 3.00 | 13-06308 | . |

LIVE EYEWEAR COCOONS SUNGLASSES

Cocoons were designed to fit over glasses; however our smaller styles make them extremely popular as solo sunglasses. Cocoons feature PolarTx® polarized lenses to eliminate harsh glare, allowing your eyes to remain focused on the task at hand. The optical grade lenses and side shields precisely regulate light transmission, reducing eye fatigue and strain. They block 100% of damaging UV A&B light, providing 40% more protection than conventional sunglasses. Cocoons offer a virtually unbreakable frame with soft touch finish, adjustable temples, lifetime warranty, 3 contemporary shapes and sizes, and are accessorized with floating neoprene case and lens cloth. Color: Black.

Sizing Guide: Measure the width (w) and height (h) of your prescription eyewear to determine which Cocoons sunglasses will fit best.

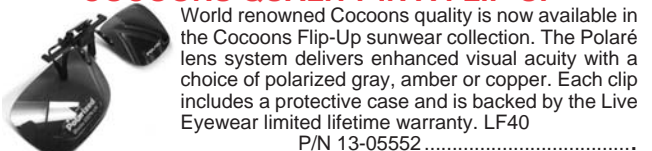


eyewear or as conventional sunglasses. After wearing Cocoons for a short period of time, your eyes will begin to relax. The polarized UV400 front and side lenses treat incoming light, eliminating distracting glare and allowing you to focus on the task at hand. The patented frames protect your eyes from all angles, blocking sunlight, UV, glare, wind, rain and airborne debris. C427C
Features: • Polarized UV400 • Scratch Resistant • Flex2fit® Temples • Soft Touch Finish • 360° of UV Protection • Ultra Lightweight • Case and Cloth • Lifetime Warranty
P/N 13-05550.....



section of frame that separates the front and side lenses. Vistana's patented designs use continuous full wrap lenses that eliminate the section frame between the front and side lenses, creating a more open and uninterrupted view. Encourage your customer a traditional over prescription sunglass to the evolutionary Vistana design and they will immediately notice the difference in both performance and style. W412G
Features: • Polarized UV400 • Scratch Resistant • Flex2fit® Temples • Dynamic Base Technology • Ultra Lightweight • Case and Cloth • Lifetime Warranty
P/N 13-05551.....

COCOONS QUALITY IN A FLIP-UP




FLIGHT JACKETS - FLYING GOGGLES

Classic. Authentic. Quality. Established in 1959 as a defense contractor for the US Government, Alpha Industries remains one of the largest manufacturers of cold weather outerwear. For over 35 years, Alpha Industries has continuously supplied the US Government and military forces throughout the world. Alpha is now recognized as the original and leading manufacturer of authentic military-inspired outerwear. Some jackets are made in the USA and some are imported.


TO ORDER FLIGHT JACKETS: Choose jacket style and color desired and order by basic part number shown. Complete the part number with size by adding -1 (Small), -2 (Medium), -3(Large), -4 (X Large), or -5 (XX Large).

MA-1 INTERMEDIATE FLIGHT JACKET

 The most popular flying jacket in the world, supplied by Alpha Industries to the U.S. Military for over 40 years. 100% nylon flight satin outer shell with nylon flight lining and polyester batting interlining for warmth. Front closure storm flap. Knit collar, waistband and cuffs. Combination utility pocket on sleeve. Pilot's MA-1 reverses to high visibility Indian Orange for use in emergencies. Colors: Black, Navy, Sage Replica Gray, Titanium, Stratos.


- Black P/N 13-00544
- Navy P/N 13-00546
- Sage P/N 13-00547
- Silver P/N 13-00549

LEATHER MA-1 FLIGHT JACKET

 Premium cowhide leather winter-weight flying jacket styled as the classic MA-1. Quilted lining with polyester interlining. Snap closure front flap pockets and inside pocket. Antiquated brass zippers and snaps. Leather zip pull, embossed logo. Wool ribbed waistband, cuffs and collar. Colors: Black and Brown


- Black P/N 13-00552
- Brown P/N 13-00553

MA-1 FLIGHT JACKET

 Only a company with over 40 years of manufacturing mil spec clothing for the most demanding of clients can claim to reproduce the originals with absolute authenticity. Each Alpha Replica Series product is exact the last detail, using original or accurately reproduced components and fabrications to replicate the real thing.

- Large P/N 13-05579-1
- XX-Large P/N 13-05579

LEATHER B-3 SHERPA FLYING JACKET

 Traditionally the right stuff for pilots from the very first days of military aviation, the sheepskin flyer jacket remains a rugged supremely warm item of apparel. Made from the finest sheepskin hides with full sherpa lining throughout, this classic style is popular with both men and women. Genuine cowhide leather accents and re-inforcements on seams. Dual collar adjusters and side buckle straps. Front slash pockets. Antiquated brass front zipper. Color: Brown

- P/N 13-00554-3

AIR FORCE WHITE SCARF W/USAF EMBLEM -

POLY COPY OF OLD ISSUE AF SCARF
P/N 13-03611

G.I. OD WOOL SCARF ISSUE - 100% WOOL ISSUE 52" LONG WOVEN IN TUBE SHAPE. ISSUE FOR AMRY AND MARINES.


- P/N 13-03610

NYLON FLYER KIT BAG

Carries almost as much as a duffel bag. Made of cordura waterproof nylon, with zipper and snap closure. Storm flap cover over zipper. size 21.5" x 21" x 10" wgt 2.0# Has double nylon web handle.

- P/N 13-03612

BARMITTS FOR YOUR TRIKE

 Extend your flying season and enjoy it more with these barmitts. The sides zip open to fit around the bar. The cozy insulation and wind-proof exterior keep your hands comfortable in the coldest wind. Sized to fit over your gloves.


- Bar Mitts Pair - Red P/N NW002R
- Bar Mitts Pair - White P/N NW002W
- Bar Mitts Pair - Reflective Green P/N NW002G



NOMEX AVIATOR'S SUMMER FLYING GLOVES


| Size | Part No. | Price | Size | Part No. | Price |
|-------------------|----------|-------|-------------------|----------|-------|
| Sage Green | | | Desert Tan | | |
| 8 | 13-02055 | . | 7 | 13-03621 | . |
| 9 | 13-02056 | . | 8 | 13-03622 | . |
| 10 | 13-02057 | . | 9 | 13-03623 | . |
| 11 | 13-02058 | . | 10 | 13-03624 | . |
| | | | 11 | 13-03625 | . |

CWU - 45/P FLIGHT JACKET

 A nylon version of the U.S. Air Force current issue flight jacket. 100% nylon flight satin outer shell. Fully lined with quilted flight nylon and polyester fill. Water repellent. Knit cuffs and wristband. Storm flap. Two fully-lined cargo pockets and combination utility pocket on sleeve. Removable Velcro logo patch. Colors: Black, Navy, Sage Replica Gray, Titanium, Stratos.

- Black P/N 13-00559
- Navy Blue P/N 13-00569
- Ink Blue P/N 13-05585
- Airforce Green P/N 13-00572
- Gun Metal Grey P/N 13-00576

LEATHER CWU-45/P FLIGHT JACKET

 Premium cowhide leather winter-weight flying jacket styled as the classic U.S. Air Force 45/P. Quilted lining with polyester interlining. Velcro closure front flap cargo pockets and inside pocket with snap fastener. Antiquated brass front zipper. Leather zip pull. Wool ribbed waistband and cuffs. Colors: Black and Brown

- Black P/N 13-00555
- Brown P/N 13-00556




MARK 4 SILVER CROSS GOGGLES

All leather face mask, colour matched head bands, Split lenses, bright polished and chrome plated frames, Sliding Nose Bridge Adjustment.

- P/N 13-06000
- Replacement Lenses for Silver Cross Goggles**
- Clear, set of 2 P/N 13-06100
- Smoke, Set of 2 P/N 13-06200

WORLD WAR II RAF FLYING GOGGLES

 A faithful Replica incorporating dark brown soft leather face mask stitched to the RAF blue painted solid brass frames. The traditional Split Lenses

- P/N 13-05860




VINTAGE AVIATOR GOGGLES

Soft Brown or Black Leather face Mask, Hand Stitched to silver or black painted solid brass frames. Screw adjustment on nose bridge.

- P/N 13-06310

HAND SEWN EPAULETS

 These tapered, hand sewn epaulets are produced by the finest tailors using the highest quality material. Available with Gold or Silver Stripes.

| Stripe | Color | GOLD Stripe | | Silver Stripe | |
|--------|-----------|-------------|-------|---------------|-------|
| | | Part No. | Price | Part No. | Price |
| 1 | Navy Blue | 13-06568 | . | 13-06576 | . |
| 1 | Black | 13-06569 | . | 13-06577 | . |
| 2 | Navy Blue | 13-06570 | . | 13-06578 | . |
| 2 | Black | 13-06571 | . | 13-06579 | . |
| 3 | Navy Blue | 13-06572 | . | 13-06580 | . |
| 3 | Black | 13-06573 | . | 13-06581 | . |
| 4 | Navy Blue | 13-06574 | . | 13-06582 | . |
| 4 | Black | 13-06575 | . | 13-06583 | . |

PS

APPAREL

Aircraft Spruce is pleased to be an official distributor for EAA merchandise. Order these EAA caps, shirts, and jackets direct from Aircraft Spruce and support the Experimental Aircraft Association.



EAA TWILL CAPS

This unstructured cap is made of 100% cotton twill with an adjustable self-fabric tuck in back strap.

Off White/NavyP/N 13-04749
Navy/Off WhiteP/N 13-04750



EAA POCKET T-SHIRTS

EAA logo above pocket. 100% Cotton. Limited quantities and sizes.

| Color | Size | PN | Price |
|-------|--------|----------|-------|
| Gray | Med. | 13-04751 | . |
| Navy | Med. | 13-04752 | . |
| Gray | Large. | 13-04758 | . |
| Gray | X-LRG | 13-04759 | . |
| Gray | 2XLG | 13-04761 | . |
| Navy | Large | 13-04763 | . |
| Navy | XL | 13-04789 | . |
| Navy | 2XLG | 13-04764 | . |



EAA GOLF SHIRTS

Port Authority, 100% cotton pique, knit golf shirt in ivory and navy.

| Color | Size | PN | Price |
|-------|--------|----------|-------|
| Ivory | Small | 13-04753 | . |
| Navy | Small | 13-04754 | . |
| Ivory | Medium | 13-04765 | . |
| Ivory | Large | 13-04766 | . |
| Ivory | X-LG | 13-04767 | . |
| Ivory | 2XLG | 13-04768 | . |
| Navy | Medium | 13-04769 | . |
| Navy | 2XLG | 13-04764 | . |
| Navy | Large | 13-04770 | . |
| Navy | XLG | 13-04771 | . |
| Navy | 2XLG | 13-04772 | . |



EAA CREWNECK SWEATSHIRTS

Sueded finish, crewneck sweatshirt in navy.

| Color | Size | PN | Price |
|-------|--------|----------|-------|
| Navy | Small | 13-04755 | . |
| Navy | Medium | 13-04773 | . |
| Navy | Large | 13-04774 | . |
| Navy | XLG | 13-04775 | . |
| Navy | 2XL | 13-04776 | . |



EAA MICROFIBER JACKET

Water repellent, two tone, micro fiber jacket in navy/sand.

| Color | Size | PN | Price |
|-------|--------|----------|-------|
| Navy | Small | 13-04756 | . |
| Navy | Medium | 13-04777 | . |
| Navy | Large | 13-04778 | . |
| Navy | XLG | 13-04779 | . |
| Navy | 2XL | 13-04780 | . |



EAA NYLON JACKETS

Water repellent, fleece lined, two tone nylon jacket in navy/putty.

| Color | Size | PN | Price |
|----------------|--------|----------|-------|
| Navy/Off White | Small | 13-04781 | . |
| Navy/Off White | Medium | 13-04782 | . |
| Navy/Off White | Large | 13-04783 | . |
| Navy/Off White | XLG | 13-04784 | . |
| Navy/Off White | 2XL | 13-04785 | . |

WHY WOMEN PREFER AIRPLANES T-SHIRT



You may have seen the "Why Men Prefer Airplanes" T-shirt; well turn-about is fair play! From the front, this 100% preshrunk cotton T looks like just another mild-mannered Powder Puff Pilot product. But from the back, it tells the world ten reasons why airplanes are better than men. It's available in white with fuchsia trim, in M (4-6), L (8-10), XL (12-14), and XXL (16-18)

| Description | Part Number | Price |
|------------------|-------------|-------|
| Med. T-Shirt | 13-06345 | . |
| Large T-Shirt | 13-06462 | . |
| X-Large T-Shirt | 13-06463 | . |
| XX-Large T-Shirt | 13-06464 | . |

CHILDREN'S JACKETS



CHILDRENS MA-1 JACKETS WITH PATCHES

- This is a well made reproduction of the famous MA-1 green nylon quilted. Same patches as our childrens bomber jacket.

| Description | Size | Part No. | Price |
|-------------|------|----------|-------|
| MA1 Toddler | 2 | 13-06443 | . |
| MA1 Toddler | 3 | 13-06442 | . |
| MA1 Toddler | 4 | 13-06444 | . |
| MA1 Youth | 8 | 13-06437 | . |
| MA1 Youth | 1012 | 13-06436 | . |
| MA1 Youth | 1416 | 13-06440 | . |
| MA1 Boys | 4/5 | 13-06439 | . |
| MA1 Boys | 6 | 13-06438 | . |
| MA1 Boys | 7 | 13-06441 | . |



YOUTH BOMBER JACKETS

- These are a Flightline original. They're a reproduction of a classic bomber, complete with simulated fleece collar. They are sturdily made with many special touches that make it unique, such as an airplane zipper pull, authentic aviation patches & colorful graphic map liner.

| Description | Size | Part Number | Price |
|----------------|------|-------------|-------|
| Bomber Toddler | 2 | 13-06432 | . |
| Bomber Toddler | 3 | 13-06428 | . |
| Bomber Toddler | 4 | 13-06433 | . |
| Bomber Youth | 1012 | 13-06431 | . |
| Bomber Youth | 1416 | 13-06434 | . |
| Bomber Youth | 08 | 13-06427 | . |
| Bomber Boys | 4/5 | 13-06429 | . |
| Bomber Boys | 6 | 13-06430 | . |
| Bomber Boys | 7 | 13-06435 | . |



CHILDRENS MA-1 JACKETS WITH PATCHES AND A HOOD

- This is a well made reproduction of the famous MA-1 green nylon quilted childrens jackets with patches and a hood. Same as our childrens bomber jacket but with faux fur trimmed hood and a velcro closure at top.

| Description | Size | Part Number | Price |
|-------------|--------|-------------|-------|
| MA1 Toddler | Small | 13-06447 | . |
| MA1 Toddler | Medium | 13-06446 | . |
| MA1 Toddler | Large | 13-06445 | . |
| MA1 Youth | Small | 13-06448 | . |
| MA1 Youth | Medium | 13-06453 | . |
| MA1 Youth | Large | 13-06452 | . |
| MA1 Boy | Small | 13-06454 | . |
| MA1 Boy | Medium | 13-06451 | . |
| MA1 Boy | Large | 13-06449 | . |

PS

RED CANOE APPAREL

RED CANOE CAPS

The classic and unparalleled fit is the cornerstone of every Red Canoe cap. Perfect vintage colours and appliqué techniques make each design a potential heirloom (as long as one of your friends doesn't 'borrow it indefinitely' - we recommend buying two!). 100% brushed cotton with fully adjustable velcro closure.



AMERICAN AIRLINES 50 CAP - From a melting pot of fledgling carriers in the early 1930's American Airlines has become a global leader in Air Transportation. Our AA Vintage Reissue Licensed Products feature the historic icons, colours and logo application techniques like layered cut felt. SIZE: One Size COLOUR: Navy PN 13-05343.....



BELL HELICOPTER - Larry Bell jump-started his company's foray into helicopters when he hired Arthur M. Young, a talented inventor, to provide expertise for helicopter research and development. It was the foundation for what Bell hoped would be a broader economic base for his company that wasn't dependent on government contracts. Bell Aircraft Corporation had originally only produced airplanes, including the famous Bell X-1. The Bell Model 47 became the first helicopter rated by a civil aviation authority in the world and would become a civilian and military success. SIZE: One Size COLOUR: Burnt Yellow PN 13-05344.....



CESSNA CHEVRON CAP - When Clyde Cessna taught himself to fly in 1911 it was the start of a unique relationship between man and machine. To thousands of air men and women today the name "Cessna" has come to symbolize flying itself. Our CESSNA Vintage Reissue Licensed Products are a salute to this legendary icon of aviation. SIZE: One Size COLOUR: Stone PN 13-05345.....



CESSNA PLANE CAP - When Clyde Cessna taught himself to fly in 1911 it was the start of a unique relationship between man and machine. To thousands of air men and women today the name "Cessna" has come to symbolize flying itself. Our CESSNA Vintage Reissue Licensed Products are a salute to this legendary icon of aviation. SIZE: One Size COLOUR: Heritage Red PN 13-05346.....



STEARMAN C CAP - The Boeing Stearman model 75 series aircraft were built between 1936 and 1945 as military trainers. 8500 of these classic, lusty biplane warriors were produced with around 2000 still flying today. After WWII hundreds of Stearmans were sold as surplus for between \$200 and \$500 each. The stearman remains an enduring icon of US aviation heritage. SIZE: One Size COLOUR: Navy PN 13-05347.....



US AIR SERVICE - As a pilot you have joined the ranks of those less bound by conventional limits on time, distance and personal freedom. The US Air Service logo signifies this and reminds us that with this 'gift of flight' comes a responsibility to serve others should an emergency we can help with call us to duty. SIZE: One Size COLOUR: Tan PN 13-05348.....



UNITED STATES ROUNDEL - As a pilot you have joined the ranks of those less bound by conventional limits on time, distance and personal freedom. The US Air Service logo signifies this and reminds us that with this 'gift of flight' comes a responsibility to serve others should an emergency we can help with call us to duty. SIZE: One Size COLOUR: Navy PN 13-05349..... Burnt Yellow PN 13-05350.....



CESSNA FULL ZIP JACKET
CESSNA Vintage Reissue Licensed Products are a salute to this legendary icon of aviation. COLOR: Washed Blue.

| Size | Part No. | Price |
|----------|----------|-------|
| Small | 13-05338 | . |
| Medium | 13-05339 | . |
| Large | 13-05340 | . |
| X-Large | 13-05341 | . |
| XX-Large | 13-05342 | . |

RED CANOE T-SHIRTS

These 100% "Ungeneric" Cotton T-shirts are specially made to your fit, colour and quality specifications. All shirts are washed after printing - eliminating shrinkage and adding vintage appeal. Some customers save the shirts for special occasions so they'll last a lifetime! We recommend acquiring spares!



AMERICAN AIRLINES 50 - AA Vintage Reissue Licensed Products feature the historic icons, colours and logo application techniques like layered cut felt. Color: Washed Blue.

| Size | Part No. | Price | Size | Part No. | Price |
|--------|----------|-------|----------|----------|-------|
| Small | 13-05281 | . | X-Large | 13-05284 | . |
| Medium | 13-05282 | . | XX-Large | 13-05285 | . |
| Large | 13-05283 | . | | | |



BELL HELICOPTER - Bell Aircraft Corporation had originally only produced airplanes, including the famous Bell X-1. The Bell Model 47 became the first helicopter rated by a civil aviation authority in the world and would become a civilian and military success. Color: Washed Blue

| Size | Part No. | Price | Size | Part No. | Price |
|--------|----------|-------|----------|----------|-------|
| Small | 13-05286 | . | X-Large | 13-05289 | . |
| Medium | 13-05287 | . | XX-Large | 13-05290 | . |
| Large | 13-05288 | . | | | |



CESSNA CHEVRON - CESSNA Vintage Reissue Licensed Products are a salute to this legendary icon of aviation. Color: Washed Blue.

| Size | Part No. | Price | Size | Part No. | Price |
|--------|----------|-------|----------|----------|-------|
| Small | 13-05296 | . | X-Large | 13-05299 | . |
| Medium | 13-05297 | . | XX-Large | 13-05301 | . |
| Large | 13-05298 | . | | | |



CESSNA PLANE - CESSNA Vintage Reissue Licensed Products are a salute to this legendary icon of aviation. Color: Heritage Red.

| Size | Part No. | Price | Size | Part No. | Price |
|--------|----------|-------|----------|----------|-------|
| Small | 13-05302 | . | X-Large | 13-05305 | . |
| Medium | 13-05303 | . | XX-Large | 13-05306 | . |
| Large | 13-05304 | . | | | |



STEARMAN C - After WWII hundreds of Stearmans were sold as surplus for between \$200 and \$500 each. The stearman remains an enduring icon of US aviation heritage. Color Washed Blue.

| Size | Part No. | Price | Size | Part No. | Price |
|--------|----------|-------|----------|----------|-------|
| Small | 13-05307 | . | X-Large | 13-05310 | . |
| Medium | 13-05308 | . | XX-Large | 13-05311 | . |
| Large | 13-05309 | . | | | |



US AIR SERVICE - The US Air Service logo signifies this and reminds us that with this 'gift of flight' comes a responsibility to serve others should an emergency we can help with call us to duty. Color: Washed Blue.

| Size | Part No. | Price | Size | Part No. | Price |
|--------|----------|-------|----------|----------|-------|
| Small | 13-05317 | . | X-Large | 13-05320 | . |
| Medium | 13-05318 | . | XX-Large | 13-05322 | . |
| Large | 13-05319 | . | | | |



US ROUNDEL - Our USR caps and T shirts feature a version of a US Roundel circa pre WWII. Color: Burnt Yellow.

| Size | Part No. | Price | Size | Part No. | Price |
|--------|----------|-------|----------|----------|-------|
| Small | 13-05325 | . | X-Large | 13-05335 | . |
| Medium | 13-05330 | . | XX-Large | 13-05337 | . |
| Large | 13-05332 | . | | | |

FOR MORE RED CANOE APPAREL AND ACCESSORIES, PLEASE VISIT OUR WEBSITE AT:

www.aircraftspruce.com



TRINTEC AVIATION GIFTS

TRINTEC WALL CLOCKS & THERMOMETERS



These 6.5"x 6.5" aviator wall clocks and thermometers are accurate oversized reproductions of typical aircraft instruments. The final touch to your office or study decor. The clocks feature an accurate quartz movement and the thermometer reads air temp. in both Fahrenheit and Centigrade. All operate on AA batteries (not included).

- Directional Gyro Wall Clock (pictured) P/N 13-00529
- Artificial Horizon Wall Clock P/N 13-00531
- VOR Wall Clock..... P/N 13-09064
- Airspeed Indicator Thermometer..... P/N 13-32130
- Altimeter/Airspeed Thermometer P/N 13-02198



TRINTEC DESK ALARM CLOCKS

These Desk model alarm clocks measure 3.5"x 3.5" and are a unique addition to any office or den. They feature an accurate quartz movement and are excellent reproductions of typical aircraft instruments. A great gift for any pilot of aviation enthusiast.

- Altimeter Desk Model Alarm Clock..... P/N 13-09070
- Directional Gyro Desk Alarm Clock..... P/N 13-09075
- Horizon Desk Model Alarm Clock P/N 13-09085
- VOR Desk Model Alarm Clock..... P/N 13-09080

TRINTEC ALARM CLOCK/DESK PEN SETS

Alarm clock: 3.5"x3.5" – Pen set base: 2-1/8" x 7.25"

ALTIMETER
P/N 13-02091



DIRECTIONAL GYRO
P/N 13-02092



VOR
P/N 13-02094



HORIZON
P/N 13-02093



DISPATCH WALL CLOCKS

Two separate hour hands can be set independently. The 12 hour hand indicates local time. The (red) 24 hour hand can be set to indicate local 24 hour time, Zulu, GMT or UTC time.



Dual Time 12/24 Black
P/N 13-02098



Dual Time 12/24 White
P/N 13-02099



Dual Time 12/24 Wht Inner
P/N 13-02101



Dual Time 12/24 Black Inner
P/N 13-02102

TRINTEC AVIATOR KEY CHAINS

Plastic frame: 1.5" x 1.5"



Altimeter
P/N 13-02103



Airspeed
P/N 13-02104



Directional Gyro
P/N 13-02105



VOR
P/N 13-02107



HSI
P/N 13-02108



HSI
P/N 13-02109



Horizon
P/N 13-02106



Horizon
P/N 13-02111



Rnd. Altimeter
P/N 13-04804



Airspeed Indicator
P/N 13-04805



Directional Gyro
P/N 13-04806



Horizon
P/N 13-04807

TRINTEC AVIATOR FRIDGE MAGNETS



Altimeter
13-02112



Airspeed
13-02113



Dir. Gyro
13-02114



Horizon
13-02115



VOR
13-02116



HSI
13-02117



Altimeter
13-04798



Airspeed
13-04799



Dir. Gyro
13-04801



Horizon
13-04802

PS

DELTA AIR LINES BOEING 777 JIGSAW PUZZLE



Both puzzle and box use textured linen paper. There are 513 pieces (bagged) and it measures 21.25" X 15" assembled. Superior quality with images that will make them highly collectible. The puzzles are manufactured with a low-dust process and from some of the thickest puzzle board in the industry. P/N 13-04056.....

TRINTEC AVIATION GIFTS

100TH ANNIVERSARY OF FLIGHT COLLECTION

On December 17, 1903, Orville Wright flew for only twelve seconds. But in those brief moments, he and his brother Wilbur accomplished what man had dreamed of for centuries.

CLOCKS - These 10" diameter wall Clocks and Thermometers feature images capturing the First Flight in History and are equipped with a durable plastic frame and lens. The Accurate US made quartz clock movement requires one (1) AA size battery (not included).



P/N 13-02143



P/N 13-02144



P/N 13-02145



P/N 13-02146



P/N 13-02147



COASTER SET - This Coaster Set features four vibrant images depicting scenes of the First Flight in history. The coasters are made of tough and scratch resistant acrylic and have non-slip rubber feet that will help to protect the surface of your furniture.

P/N 13-02148



MOUSE PADS - These 9"x7.5" Mouse Pads feature high resolution images capturing the First Flight in History and are equipped with a black no-slip base.

P/N 13-02149.....
P/N 13-02151.....

P/N 13-02149 P/N 13-02151



TRINTEC 10" AIRCRAFT WALL CLOCKS

10" diameter wall clock Popular aircraft designs by Labusch Skywear Designs. Quartz Clock Movement. Requires one AA size battery.

ALL CLOCKS

| Model | Part No. | Model | Part No. |
|------------------------|----------|------------------------------------|----------|
| Vulcan | 13-02154 | FW190 Focke-Wulf/ BF109 Messer. | 13-02152 |
| F-16 Thunderbird | 13-02155 | P-51 Mustang | 13-02169 |
| Halifax | 13-02158 | SR71 Blackbird | 13-02157 |
| deHavilland Beaver | 13-02159 | Douglas DC-3 | 13-02170 |
| F-4 Phantom | 13-02160 | F-14 Tomcat | 13-02171 |
| F4U Corsair | 13-02161 | F6F Hellcat | 13-02172 |
| F-16 Falcon | 13-02164 | CF105 Arrow | 13-02173 |
| BF109 Messerschmitt | 13-02165 | P-40 Warhawk | 13-02174 |
| B-17 Flying Fortress | 13-02166 | Mosquito | 13-02176 |
| A-10 Thunderbolt | 13-02167 | Corsair | 13-02177 |
| J-3 Piper Club | 13-02168 | Blue Angels | 13-02178 |
| Lancaster | 13-02153 | Strike Eagle | 13-02179 |
| F15E Strike Eagle | 13-04850 | Spitfire | 13-02180 |
| B29/X10 | 13-04852 | English Electric Lightning | 13-04851 |
| N. Amer. Harvard | 13-04854 | F18 Hornet | 13-04853 |
| deHavilland Otter | 13-04856 | Norseman | 13-04855 |
| B-25 Mitchell | 13-04858 | B-24 Liberator | 13-04857 |
| | | Spitfire | 13-04859 |

TRINTEC COASTER SETS



P/N 13-02133



P/N 13-02134



P/N 13-04871

TRINTEC MOUSE PADS



P/N 13-02127



P/N 13-02129



P/N 13-02131



P/N 13-02132



P/N 13-02128



P/N 13-02130

FIRST IN FLIGHT (LICENSE PLATES)



These plates were issued by the state of North Carolina and are no longer available. "First in Flight" license plates illustrate the Wright Brothers first flight in North Carolina.

P/N 13-03203.....



TRINTEC AVIATION GIFTS



TRINTEC 14" AIRCRAFT WALL CLOCKS

14" diameter Wall Clock popular aircraft designs. Quartz Clock Movement. Requires one AA size battery. These 14" clocks are .

| Model | Part No. | Model | Part No. |
|---------------|----------|---------------------|----------|
| J-3 Piper Cub | 13-04819 | deHaviland Beaver | 13-04820 |
| Lancaster | 13-04821 | Norseman | 13-04822 |
| Stearman | 13-04823 | otter | 13-04824 |
| Spitfire | 13-04825 | First Flight(shown) | 13-04826 |



TRINTEC ZULU TIME CLOCKS

Zulu Time Clock allow you to independently set a 12 hour time scale as well as a 24 hour time scale.

| Description | Part No. | Price |
|---|----------|-------|
| Zulu Time 24 Hour wall clock 14" frame, white face | 13-04860 | . |
| Zulu Time wall clock, 14" frame, black face | 13-04861 | . |
| Zulu Time wall clock, 14" frame, white face | 13-04862 | . |
| Zulu Time wall clock, 14" frame, white face, black trim | 13-04863 | . |
| Zulu Time wall clock, 14" frame, black face, white trim | 13-04864 | . |
| Zulu Time wall clock, 10" plastic frame, black face | 13-04865 | . |
| Zulu Time wall clock, 10" plastic frame, white face | 13-04866 | . |
| Zulu Time wall clock, 10" frame, white face, black trim | 13-04867 | . |
| Zulu Time wall clock, 10" frame, black face, white trim | 13-04868 | . |

WORLD TIME CLOCK



P/N 13-05706

14" Diameter Metal Frame with Antique Brass Finish. Whether you need to know the time on the other side of the country or the other side of the World, this is the clock for you. This unique wall clock features a map of the world with the 24 major time zones that rotates all day along with the Earth. The clock's hour and minute hands point to the outer time scale providing your local time while the inner time scale lets you know the time almost anywhere in the World.

14" World Clock.....P/N 13-05706.....



P/N 13-04870

10" Diameter Black Plastic Frame with Clear Plastic Lens. Its like having 24 clocks in one. Whether you need to know the time on the other side of the country or the other side of the World, this is the clock for you. This unique wall clock features a map of the world with the 24 major time zones that rotates all day along with the Earth. The Inner Time Scale also shows Night & Day 10" Diameter Frame with Lens cover, Depth: 2"

TRINTEC AVIATOR WALL CONSOLE

Two of our popular Wall Clocks mounted together on a display panel. Panel is made of High Impact Polystyrene | 7.5" x 15" |. Displays time and indoor temperature |.

| | | |
|--|--------------|-------|
| Directional Gyro Wall Clock/Airspeed Thermometer | P/N 13-04816 | ..... |
| Horizon Wall Clock/Airspeed Thermometer | P/N 13-04817 | ..... |
| VOR Wall Clock/Airspeed Thermometer | P/N 13-04818 | ..... |



TRINTEC ZULU TIME CLOCKS

Zulu Time Clock allow you to independently set a 12 hour time scale as well as a 24 hour time scale.

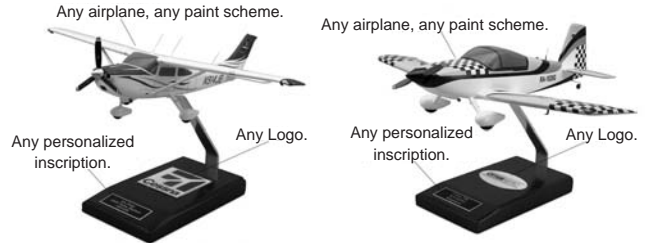
P/N 13-04872

TRINTEC CESSNA PRODUCTS



| Description | Part No. | Price |
|---|----------|-------|
| Cessna Altimeter Wall Clock | 13-04827 | . |
| Cessna Altimeter Alarm Clock | 13-04828 | . |
| Cessna Altimeter Desk Pen Set | 13-04829 | . |
| Cessna Classic Instrument Coaster Set | 13-04830 | . |
| Cessna Round Acrylic Coaster Set | 13-04831 | . |
| Skyhawk 172 Mousepad | 13-04832 | . |
| Skylane TC 182 Mousepad | 13-04833 | . |
| Cessna Citation CJ3 Mousepad | 13-04834 | . |
| Cessna Citation X Mousepad | 13-04835 | . |
| Cessna Citation Sovereign Mousepad | 13-04836 | . |
| Cessna 26" Propeller Clock | 13-04837 | . |
| Citation Sovereign T-Shirt - Black (L) | 13-04839 | . |
| Citation Sovereign T-Shirt - Black (XL) | 13-04838 | . |
| Citation X T-Shirt - Black (L) | 13-04840 | . |
| Citation X T-Shirt - Black (XL) | 13-04841 | . |
| Citation CJ3 T-Shirt - Black (L) | 13-04842 | . |
| Citation CJ3 T-Shirt - Black (XL) | 13-04843 | . |
| Cessna Skyhawk T-Shirt - Black (L) | 13-04844 | . |
| Cessna Skyhawk T-Shirt - Black (XL) | 13-04845 | . |
| Cessna Skylane TC T-Shirt - Black (L) | 13-04846 | . |
| Cessna T-Shirt Raised Logo - Black (L) | 13-04848 | . |
| Cessna T-Shirt Raised Logo - Black (XL) | 13-04849 | . |

CUSTOM AIRCRAFT MODELS



Recreate your airplane into a beautifully detailed desktop replica. Our premium custom made models are built to your exact specifications – no detail will be spared. You can have ANY aircraft recreated into a museum quality desktop model with your paint scheme, logos, registration number or any other details and markings. Complete your model with a fully customized stand including your choice of logo and a personalized inscription plaque. We offer over 3,000 different models – both military and civilian. Our desktop models are a maximum of 17" in either wingspan or length. Please allow approximately 6-8 weeks for delivery. 100% satisfaction guaranteed. When ordering please provide: aircraft specifications, propeller description, aircraft colors, and registration information. You will also need to specify the logo and inscription plate text.

P/N 13-06837

TRINTEC BEER MUGS



| Description | Part No. | Price |
|------------------------------|----------|-------|
| Bad Attitude Beer Mug | 13-04815 | . |
| Watch Your Attitude Beer Mug | 13-02124 | . |
| Do It Inverted Beer Mug | 13-02125 | . |
| Mile High Beer Mug | 13-02126 | . |

PS

WARBIRD WALL CLOCKS

WARBIRD WALL CLOCKS

These large 14" all metal collector wall clocks are produced using a revolutionary new technology that permanently imbeds the image right onto the surface of the metal dial. A perfect blend of that nostalgic 40's style look with today's high quality graphic standards. For added authenticity, the clock face is set into an aluminum riveted case with dome polished crystal. 1yr warranty. (Requires 1 AA battery, not included.) ALL CLOCKS



PT-17 Kaydet
P/N 13-02576



B-17 Flying Fortress
P/N 13-02577



P-51 Mustang
P/N 13-02578



C-47 Skytrain
P/N 13-02579



F-4 Phantom
P/N 13-02580



AH-64 Apache
P/N 13-02581



FA-18 Hornet
P/N 13-02582



307 Stratoliner
P/N 13-02583



707 Jetliner
P/N 13-02584



747 Jetliner
P/N 13-02585



DC-10 Jetliner
P/N 13-02586



777 Jetliner
P/N 13-02587



P-38 Lightning
P/N 13-02590



Beautiful View
P/N 13-02591



PBY Catalina
P/N 13-02592



Memphis Belle
P/N 13-02593



Flying Fortress
P/N 13-02595



P-40 Warhawk
P/N 13-02596



Ready To Ride
P/N 13-02597



Bombs Away Baby
P/N 13-02598



B-29 Bomber
P/N 13-02599



Eye Candy
P/N 13-02601



Come Home Soon
P/N 13-02602



P-38 Gold
P/N 13-02604



Wings for Victory
P/N 13-02605



F-14 Tomcat
P/N 13-02606



P-51 8th
P/N 13-02607



F4U Corsair
P/N 13-02608



B-24 Liberator
P/N 13-02609



P-38 Lightning
P/N 13-02611



Uncle Sam
P/N 13-02612



Rosie the Riveter
P/N 13-02613



Semper Fidelis
P/N 13-02614



Stearman
P/N 13-02615



Black Widow
P/N 13-02618



B-17 Flying
P/N 13-02619



B-25 Mitchell
P/N 13-02621



B-29 Super Fortress
P/N 13-02622



C-47 Skytrain
P/N 13-02623



P-51 Mustang
P/N 13-02624



SBD Dauntless
P/N 13-02626



SNJ-5
P/N 13-02627



F-86 Sabre Jet
P/N 13-02628



U.S. Army
P/N 13-02631



U.S. Navy
P/N 13-02632



U.S. Air Force
P/N 13-02633



U.S. Marines
P/N 13-02634



Spitfire MK
P/N 13-02636



Mosquito MK II
P/N 13-02638



Junkers Ju 88A-4
P/N 13-02641



Me 262A-2a
P/N 13-02642



Me 109
P/N 13-02643



Ju87B-2 Stuka
P/N 13-02644



Zero A6M
P/N 13-02646



Fokker Dr1
P/N 13-02647



Bristol F2B
P/N 13-02639



PILOT LICENSE PLAQUES

PILOT PLAQUES

Looking for truly unique awards that document and display your noteworthy aviation accomplishments – or those of someone you know? Whether it is a gift for a pilot to proudly display his/her achievements or a service award to recognize an air traffic controller, these plaques are the perfect choice. To place your order, simply select your plaque below and provide us the pertinent customizing data. We'll process your request with care and contact you with any questions. In approximately two weeks your order will arrive.



Model: ME-W8-2 Size: 8" x 10"
P/N 13-06143



Model: NEVL-2 Size: 8" x 10"
P/N 13-06148



Model: DPLT028L-2 Size: 8" x 10"
P/N 13-06152



Model: FP810 Size: 8" x 10"
P/N 13-06156



Model: ME-W8-3 Size: 8" x 10"
P/N 13-06144



Model: NEVL-3 Size: 8" x 10"
P/N 13-06149



Model: DPLT028L-3 Size: 8" x 10"
P/N 13-06153



Model: ML912-3 Size: 9" x 12"
P/N 13-06157



Model: CRM8-2 Size: 8" x 10"
P/N 13-06146



Model: CH810-2 Size: 8" x 10"
P/N 13-06150



Model: FT4860M-2 Size: 8" x 10"
P/N 13-06154



Model: AV-B07 Size: 7" x 9"
P/N 13-06158



Model: CRM8-3 Size: 8" x 10"
P/N 13-06147



Model: CH810-3 Size: 8" x 10"
P/N 13-06151



Model: FT4860M-3 Size: 8" x 10"
P/N 13-06155

PILOT LICENSE WALL PLAQUES

5 x 7 Standard



5 x 7 Elliptical



7 x 9 Standard



New Format



7 x 10 Floating

These are custom Pilot License Wall Plaques made out of fine wood and can be hung on your home or office wall. Show others that you are a proud licensed pilot.

To order: Make a clear photo copy of front and back of license. Sign a blank sheet of paper. After selecting the size of your wall plaque, please select what type of metal: silver or gold.

| Description | Part Number | Price |
|--|-------------|-------|
| 5 X 7 SOLID WALNUT - LICENSE WALL PLAQUE | 13-06046 | . |
| 5 X 7 DELUXE ELLIPTICAL SOLID WALNUT LICENSE WALL PLAQUE | 13-06047 | . |
| 7 X 9 SOLID WALNUT - LICENSE WALL PLAQUE | 13-06048 | . |
| 7 X 9 DELUXE FLOATING - LICENSE WALL PLAQUE | 13-06049 | . |

PS

COCKPIT COOLERS - LICENSE PLATE FRAMES

COCKPIT COOLERS

Heat getting you down? Have you been wishing there were a way to efficiently and quickly cool your airplane's cabin? If you answered "yes" to either of those questions, then you need the Cockpit Cooler to make your trips comfortable!



MODEL AP - 100 14V/28V

For the cooling process, the unit creates ice-chilled air, followed by evaporated water, drawn through a saturated media filter. The high-volume, high-velocity air is drawn in through and around the ice. As the ice melts, it absorbs heat and creates chilled water. The chilled water evaporates and absorbs heat further. The cool air is circulated in the cabin by the high-volume blower at 250 cfm.

- * The model is small. It cools with a high-volume blower at 250 cfm.
- * 7.5" by 16.5" by 18.5" and is a mere 9.5lbs
- * Provides plenty of cool time for most general aviation aircraft at taxi, takeoff and landing.
- * In arid climates, there was a measured drop of nearly 18 degrees inside the cabin.
- * Being so small, there is still plenty of cargo space and useful load.

MODEL AP - 200 14V/28V

The model AP 200 utilizes the same ice chilled refrigerated air conditioning system as used in many commercial buildings, only on a micro scale. Stored coolant pumps through a high efficiency heat exchanger. A high-volume blower moves air throughout the cabin. Condensation of moisture from cabin air on the exchanger coils is retained in the unit reservoir. This unit reduces moisture levels since it relies on refrigerated air conditioning instead of evaporative cooling.

- * The model cools with a high-volume blower at 250 cfm for a comfortable dry chilled flow.
- * 7.5" by 16.5" by 18.5" and is a mere 10.2lbs
- * Provides even more cool air time than Model 100 due to its more efficient use of air conditioning
- * A larger reservoir may be purchased to increase cooling time by several hours.
- * Being so small, there is still plenty of cargo space and useful load.

| Description | Part No. | Price |
|---------------------------|------------|-------|
| COCKPIT COOLER AP-100 14V | 13-05784 | . |
| COCKPIT COOLER AP-100 28V | 13-05784-1 | . |
| COCKPIT COOLER AP-200 14V | 13-05785 | . |
| COCKPIT COOLER AP-200 28V | 13-05785-1 | . |

POL-AIR B310 PORTABLE AIR CHILLER SYSTEM



Four years of research by Pol-Air has resulted in the patented proprietary turbine pump for the B310 and is the heart of the new technology. This pump is powered by an ultra-efficient high speed DC brushless motor and can produce up to 3.5 inches of water pressure at 14.3 CFM in the 12vDC units, and 4.5 inches of water pressure at 20.5 CFM in the 24vDC units. This pressure delivers cool dry airflow through 1.25" diameter featherweight EPE hoses

to the front edge of passenger seats or directly under your shirt, making microenvironmental cooling possible for up to four people.

Why you get 70° F (or cooler) dry air with half the humidity of outside air? We draw air through ice alone (no water). When you draw air through ice you lower humidity. When you blow air through water, like a swamp cooler, you increase humidity. This is not a swamp cooler. Water is eliminated from the system.

As humid air passes through ice, water vapor will condense and plate out on the ice and drips out of the system through the drain with the liquid ice melt. Thus the air produced has usually half (or less) of the humidity of the ambient air. Instinctively, you know this, as the driest place on earth is Antarctica. Water vapor there can only exist as ice crystals in the air. Humidity is usually 0.5% to 1.5%!

- 12V P/N 13-05074
- 24V P/N 13-05075

LICENSE PLATE FRAMES AND LICENSE PLATES



High quality metal frame. Chrome with blue & white enamel.
P/N 13-06227



High quality metal frame. Chrome with blue & white enamel.
P/N 13-06228



High quality metal frame. Chrome with blue & white enamel.
P/N 13-06229



High quality metal frame. Chrome with blue & white enamel.
P/N 13-06231



High quality metal frame. Chrome with white & blue enamel.
P/N 13-06232



High quality molded on Black plastic frame with white lettering.
P/N 13-06233



High quality stamped aluminum plate white and blue enamel
P/N 13-06235



FLY design. High quality stamped aluminum plate white and black enamel
P/N 13-06236



FUEL GAUGES - BIRD DETERENTS

DIRECT FUEL LEVEL INDICATORS

These Direct Fuel Level Indicators are quality made of acrylic PVC tube with an aluminum scale. They are available calibrated to individual tanks or uncalibrated for custom calibration to home built tanks. These Indicators allow an accurate check of on board fuel level indicators and eliminate the guess work.



| Description | Part No. | Price |
|--|----------|-------|
| Fuel Level Indicator C-150/C-152 + | 12-21200 | . |
| Fuel Level Indicator C-150 LONG 19 | 12-21205 | . |
| Fuel Level Indicator C-170 / C-172 | 12-21210 | . |
| Fuel Level Indicator C-172 34G | 12-21215 | . |
| Fuel Level Indicator 1958+ C182 32 GAL | 12-21225 | . |
| Fuel Level Indicator C-182 42G | 12-21230 | . |
| Fuel Level Indicator C-210 45G | 12-21240 | . |
| Fuel Level Indicator PA-24 30G | 12-21245 | . |
| Fuel Level Indicator 7KCAB | 12-21250 | . |
| Fuel Level Indicator PA-28 | 12-21255 | . |
| Home Built Universal Fuel Level Indicator CK Rod | 12-21260 | . |

FUEL HAWK FUEL GAUGES

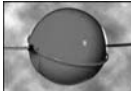


The Fuelhawk is just 11" long, clear lightweight and unbreakable. It's easy to use and gives an instant readout in gallons usable. No more guessing. These handy devices offer the answers to these very important questions: 1. How many gallons of

usable fuel are remaining in the tank? 2. How much fuel can be added without going over gross weight? 3. Are the aircraft fuel gauges working & accurate?

| Part No. | Application | Price |
|----------|---|-------|
| 13-00443 | Cessna 152 (standard 12 gal. tanks) | . |
| 13-00442 | Cessna 172 (standard 19 gal. tanks) | . |
| 13-01468 | New Cessna 172 Skyhawk (26.5 gal.) | . |
| 13-01469 | New Cessna 182 Skylane (43.5 gal.) | . |
| 13-00441 | Cessna 182LR (42 gal. Long range tanks) | . |
| 13-00439 | Universal for any aircraft, w/graph & calibration chart | . |
| 13-00949 | Universal XL Fuel Gauge (16" long) | . |

TANA WIRE MARKERS



Tana Wire Markers are large fiberglass balls which can be attached to power lines to warn aircraft of the location of the wires. They meet FAA specifications, feature easy installation and universal attachment, withstand elements for over 10 years, require no maintenance, do not slip, chafe, oscillate, or cause electrolysis or vibration. Stocked in 9", 12", and 24" sizes. Larger sizes available on request. Color: international orange. Stocked in Tana marker style JX.

| | | |
|------------------------|--------------|---|
| 12" diameter with Tape | P/N 13-00057 | . |
| 20" diameter with Tape | P/N 13-00058 | . |
| 24" diameter with Tape | P/N 13-00059 | . |
| 12" diameter w/o Tape | P/N 13-00054 | . |
| 20" diameter w/o Tape | P/N 13-00055 | . |
| 24" diameter w/o Tape | P/N 13-00056 | . |

WIRE MARKERS

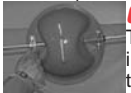


CSP-S STANDARD MOUNTING MARKER - The Standard power line Marker is made of ABS plastic & fits wires up to 1" using two neoprene bushings



CSP-EZS RECESSED MOUNTING AREA & CSP-EZC RECESSED MOUNTING AREA W/ CLAMP - The EZ line of Markers is made of ABS plastic & is new & improved with a larger recessed area around the four bolts making it easier to install with linemen gloves. The EZ-S still uses

two neoprene bushings & fits wires up to 1". The CSP-EZC comes with an aluminum clamp with stainless steel bolts & fits wires up to 1". Both of these styles use 1" nuts.



CSP-SAR STANDARD MARKER WITH ARMOR ROD - This marker is equipped with two sets of armor rod set into a bracket & can be bolted to the inside or outside of the marker. All Markers can be made to fit larger diameter wires.

| Diam. | CSP-S | | CSP-EZS | | CSP-EZC | | CSP-SAR | |
|---------|----------|-------|----------|-------|----------|-------|----------|-------|
| | Part No. | Price | Part No. | Price | Part No. | Price | Part No. | Price |
| 9 inch | - | - | 13-06725 | . | 13-06741 | . | 13-06748 | . |
| 12 inch | - | - | 13-06727 | . | 13-06742 | . | 13-06749 | . |
| 20 inch | 13-06731 | . | 13-06728 | . | 13-06743 | . | 13-06750 | . |
| 24 inch | 13-06737 | . | 13-06729 | . | 13-06744 | . | 13-06751 | . |
| 30 inch | 13-06738 | . | - | - | 13-06745 | . | 13-06752 | . |
| 36 inch | 13-06739 | . | - | - | 13-06746 | . | 13-06753 | . |

FOLDING AIRCRAFT STEP STOOL



This sturdy step stool is made of oak veneer over hardwood and provides a spacious 11"x11" square standing area. The stool is 16" high and features non-skid strips on the standing area. The precision crafted stool opens and closes easily and measures only 2"D x 12"W x 19"L when folded for storage in baggage compartment or under the seat of your aircraft. Weighs only 4lbs. Lightweight, compact, and very strong, this stool is idea for use around general aviation aircraft. P/N -13-04281

SUPERLITE FOLDING HAND TRUCK



The Superlite Folding hand truck is great for use in general aviation aircraft, airline travel, office, sports, and more. It's push-of-a-button fold-up frame and aluminum construction allows for easy storage and transportation. The large 19"W x 12"D nose and elastic straps allow for moving heavy and bulky objects. Strong enough to handle 175 lbs. Fits easily in an aircraft baggage compartment or a car trunk. Extended dims: 42"x19"x19". Folds to 29.5"x19"x2". P/N 13-00893

BIRD DETERRENT BIRDXPPELLER PRO VOL.1



The BirdXPeller Pro uses actual species-specific distress cries and can be set for any or all of a variety of birds including pigeons, sparrows, starlings and gulls. Volume, time-off periods, and random calls can be varied to keep the birds away. The unit measures 10" x 3" x 10" and weighs 4 lbs. The directional speakers cover up to an acre in an oval pattern. The unit comes with an AC adapter cord but can run off a 12 volt DC battery if needed. NOTE: Vol.1 is only for pigeons, starlings, sparrows and gulls. P/N 13-00091

ARROWPROP DECORATOR PROP CLOCKS

Choose from:

Quartz Clock (Q)
Weather Station (W)

Weather station contains a thermometer, hygrometer, & barometer in 1 instrument.



Quartz Clock



Weather Station

PIPER CUB PROPELLERS



Laminated hardwood reproduction of the propeller used on the Piper Cub airplane. With a high gloss finish, red tips, and cub decals. Quartz Clock (Q) or Weather Station (W).

| | | | | | |
|--------------|------------|-------|--------------|------------|-------|
| ITEM | P/N | PRICE | ITEM | P/N | PRICE |
| 52" Prop w/Q | 13-32170-Q | ..... | 65" Prop w/Q | 13-32171-Q | ..... |
| 52" Prop w/W | 13-32170-W | ..... | 65" Prop w/W | 13-32171-W | ..... |

AIRCRAFT PROPELLER



Beautiful reproduction of an early day aircraft propeller like those used on the Piper Cub, Aeronca, Taylorcraft and others. Constructed of laminated hardwood with clear finish, red tips and simulated brass tipping on the propeller blades. Quartz Clock (Q) or Weather Station (W).

| | | | | | |
|--------------|------------|-------|--------------|------------|-------|
| 52" Prop w/Q | 13-32175-Q | ..... | 65" Prop w/Q | 13-32176-Q | ..... |
| 52" Prop w/W | 13-32175-W | ..... | 65" Prop w/W | 13-32176-W | ..... |

LINDBERG PROPELLER



This 50" propeller is a scaled reproduction of the propeller used by Colonel Lindbergh on his Sperry Messenger airplane. With Quartz Clock (Q) or Weather Station (W). Available in clear (C) or beautifully stained (S) finish.

| | | | |
|--------------|-------|-------------|-------|
| 50" Prop w/Q | ..... | 13-32180-CQ | ..... |
| 50" Prop w/Q | ..... | 13-32180-SQ | ..... |
| 50" Prop w/W | ..... | 13-32180-CW | ..... |
| 50" Prop w/W | ..... | 13-32180-SW | ..... |

REPLICA PROPELLER LETTER OPENER



Own a bit of aviation history with our unique letter opener. A mini replica of the Hamilton Standard steel propeller used on Charles Lindberghs "Spirit of St. Louis". 9" long, it has a chromed hand polished handle, is cast to highest quality metal standards with authentic Hamilton Standard decals on the blade. Shipped in elegant gift box P/N 9925

PEDAL PLANES - SCOOTERS

R V SPORT – PEDAL PLANE KIT



The RV-Sport is a miniature homebuilt airplane which is a great learning experience for parents and children and when completed is a unique pedal powered toy for kids. It was engineered with the builder and the youngster in mind. The simple construction will exercise your skills in basic woodworking, sheet metal, fitting and gluing plastic, finish painting, and detailing. Your completed RV-Sport will be a rugged, realistic toy that is sure to be a hit with every kid on the block. The RV-Sport is built using basic shop tools, and is the ideal "mini-homebuilt" for homebuilders and pilots of all ages! Purchase just the plan set with assembly manual and information updates or the complete kit which includes these items plus hardware, plastic items, & finish decal set.

fitting and gluing plastic, finish painting, and detailing. Your completed RV-Sport will be a rugged, realistic toy that is sure to be a hit with every kid on the block. The RV-Sport is built using basic shop tools, and is the ideal "mini-homebuilt" for homebuilders and pilots of all ages! Purchase just the plan set with assembly manual and information updates or the complete kit which includes these items plus hardware, plastic items, & finish decal set.

Complete Plans Set P/N 13-30715



F4U-1 CORSAIR JR. PEDAL PLANE KIT FOR KIDS

The F4U-1 Corsair Jr. is a miniature homebuilt airplane which is a great learning experience for parents and children and when completed is a unique pedal

powered toy for kids. The Corsair Jr. is built using basic shop tools and is sure to be the hit with every kid on the block. The simple construction will exercise your skills in basic woodworking, sheet metal, fitting & gluing plastic, finish painting, & detailing. The F4U-1 Corsair Jr. is available in following kits:

- Plans and Patterns only P/N 13-30730
- Plastic Kit only P/N 13-30735
- Hardware, landing gear, steering, folding with hinges, fasteners
P/N 13-30740
- Complete Construction Kit P/N 13-30745

Note: The plastic Kit Only is highly recommended when you order the plans due to the great amount of detail required to achieve the real F4U look. The plane can be built without the Plastic Kit but it will take longer.



HITCH COVERS



| Description | Part No. | Price |
|---------------------------------|----------|-------|
| Remove Before Flight Cover | 13-03545 | . |
| AJO Black Oval 2" Hitch Cover | 13-04004 | . |
| B25 Black Oval 2" Hitch Cover | 13-03530 | . |
| T6 Black Oval 2" Hitch Cover | 13-03531 | . |
| P17 Black Oval 2" Hitch Cover | 13-03532 | . |
| B17 Black Oval 2" Hitch Cover | 13-03533 | . |
| PA-18 Black Oval 2" Hitch Cover | 13-03534 | . |
| L19 Black Oval 2" Hitch Cover | 13-03535 | . |
| B24 Black Oval 2" Hitch Cover | 13-03536 | . |
| P25 Black Oval 2" Hitch Cover | 13-03537 | . |
| T28 Black Oval 2" Hitch Cover | 13-03538 | . |
| L29 Black Oval 2" Hitch Cover | 13-03539 | . |
| T34 Black Oval 2" Hitch Cover | 13-03540 | . |
| L39 Black Oval 2" Hitch Cover | 13-03541 | . |
| P51 Black Oval 2" Hitch Cover | 13-03542 | . |
| OH-6A Black Oval 2" Hitch Cover | 13-03543 | . |
| Remove for River Hitch Cover | 13-03544 | . |
| Mohawk 2" Hitch Cover Black | 13-03546 | . |



YOUR (N) NUMBER - TRAILER HITCH COVER

Call for Quote and provide us with your "N" number. 2" Oval Hitch Cover.
P/N 13-04737 **CALL FOR QUOTE**



T-3 2 INCH RECEIVER LOCK

Receiver locks prevent your hitch cover, or step hitch from being stolen.

P/N 13-03529.....

GO-PED LIGHTWEIGHT MOTORIZED SCOOTER



The patented Go-Ped design combines a strong chromoly frame with a lightweight folding handle system to achieve maximum strength along with portability. The sturdy frame has an electrostatic powder coat finish. Go-Ped weighs only 20lbs but can support up to 400lbs. Powered by a precision 2-stroke engine that quietly propels itself at speeds of up to 20 mph, the Go-Ped has the ability to conquer steep hills. Its tires are fabricated of a very resilient natural rubber which will never go flat. The Go-Ped averages well over 100

MPG on pre-mixed unleaded gas. Due to a very low center of gravity, riding the Go-Ped is easier than riding bicycle. To start your Go-Ped just step on and push or pull forward. The Liquidmatic Go-Ped is ideal for the crowd that appreciates or needs a unique ultra-smooth hydraulic automatic transmission. The Liquidmatic is available in Yellow with Purple accents. The Go-Ped folds as quickly and as easily an umbrella for storage and fits in the optional carry bag, which doubles as a cargo carrying backpack. With a space displacement of only 2.5 cubic feet, the Go-Ped can be easily stored in your car, boat, motorhome or airplane. Features:
* Engine Model: GPL290 * Engine Description: Single Cylinder, Two Stroke, Air Cooled * Engine Displacement: 29cc * Engine Power: 2.5 HP * Engine Ignition: Electronic * Engine Cutoff: Handlebar Kill Switch * Carburetion: Walbro * Transmission: Direct Drive * Fuel Gas: & 2 Cycle oil @ 40:1 * Fuel Capacity: 1 Liter * Fuel Economy: 100 mpg * Max Speed 20 mpg * Dimensions: L-34" W-13" H-42", Folded L-34" W-13" H-14" * Handlebar: 6061-T6 aircraft aluminum * Frame Aircraft quality: 4130 Chromyl frame * Fork Patented: cantilevered aircraft quality 4130 Chromyl fork * Dry Weight 20 lbs * Max Load: 400 lbs * Wheel Type: 6" Solid Go-Active™ Rubber replaceable tire * Rims Mach: 12 reinforced high impact polymer * Folding Effortless folding feature for easy storage and carrying * Suggested Useage: City / Cruising

- Go-Ped (Sport Model) Blue..... P/N 13-08380
- Go-Ped (Sport Model) Red P/N 13-08381
- Go-Ped Bag P/N 13-08390

PRO PILOT LANYARD KIT



* Lanyard: The all black heavy duty detachable nylon lanyard is 20 inches in length from the top of the lanyard to the bottom of the J-hook. The detachable portion is short in length (approximately 2 ½ inches)

* Flashlight: The black and silver Garrity Lithium L.E.D. is the brightest, whitest single light available. It features an L.E.D. light. It provides years of intermittent light or more than 23 hours of continuous light. The Diode lasts 100,000 hours. It has an

on-off switch or simply press down on the center of the "on-off switch" for intermittent lighting. 2 lithium button-cell batteries are included. The flashlight attaches to the J-hook.

* Badge clip/ universal grabber: The alligator-type badge clip has a black strap (snaps open and closed) permanently fixed to it that swivels. Connected to the strap is an optional black universal grabber (included) for badges without a slot hole, withstanding up to 5 pounds of vertical force and more than 5 pounds of horizontal force.

* Earplugs: The Howard Leights NRR (Noise Reduction Rate) is 33 decibels. Highest rated disposable ear plugs on the market Tie it to the top portion of the lanyard to always have instant access to the earplugs.

P/N 13-06336.....

PROPELLER CEILING FANS



This propeller ceiling fan is fitted with a custom made propeller especially crafted to work as a nostalgic and functional unit...they sound great too. The three speed fan with a light, will run in both forward and reverse and comes in gloss white with a white glass globe. The propeller is available in two shapes, the simple standard as well as in a scimitar shape (my favorite), both are dark stained and finished in a gloss urethane. The fan motor unit is a complete package inclusive of the typical four paddle blades. Includes simple instructions on how to mount and balance the custom hand made propeller in place of the four paddle blades.

- Standard P/N 13-04048.....
- Round Tip P/N 13-04049.....

PS

CD-ROMS - SOFTWARE



"121.5" EMERGENCY DVD/VHS

Real life emergencies, actual ATC recordings! Hosted by TV personality and flight instructor MayCay Beeler, this unforgettable DVD features the actual ATC recordings of pilot and ground communications in real emergencies, brought to life with stunning animation and graphics. Listen, learn, and live.

"121.5" DVD P/N 13-02854
 "121.5" VHS P/N 13-02855



2009 PRO-FLIGHT LIBRARY CD

ASA provides the aviation community with the most accurate and reliable publications available. The 2009 Pro-Flight Library CD-ROM makes it even easier to access the world of aviation information with just the click of a mouse. This is the most comprehensive electronic aviation reference library available—all on a single CD-ROM—at a huge savings over the purchase of the individual books. The Pro-Flight Library CD lets aviators: * View the full text of all publications * Print text and graphics—from a single phrase to an entire publication * Find all newly-revised passages and view both the old and new text * Simultaneously search multiple publications * Instantly find any combination of words or phrases * Place electronic bookmarks for instant reference * Mark and save personalized notes—just as you would in a paper book
 System Requirements: Windows 2000, NT, XP, Vista (Home Premium 32bit).
 P/N 13-01077

2008 PREPWARE v.10

FAA Knowledge Exam prep software. Version 10 includes the new FAA Knowledge Exams released June 25, 2007 although the automatic update feature will keep customers current as new tests are released.

Private Pilot.....P/N 13-01078
 Instrument RatingP/N 13-01079
 Commercial Pilot.....P/N 13-01080
 Certified Flight InstructorP/N 13-01081
 Flight Engineer.....P/N 13-01082
 Airline Transport Pilot.....P/N 13-02565
 All 3 maintenance test.....P/N 13-01084

CD-POCKET

Durable vinyl pocket holds 2 CD-ROMs, 7 hole punched for binder. Set of 10.

P/N 13-62800

GPS TRAINING SOFTWARE FROM ASA



GPS Trainer Version 2 is a tutorial to help pilots master GPS from their desktop. For the renter confronted with one brand of GPS one day and another the next; for the instructor who teaches in multiple aircraft; for the aircraft owner who is trying to master the nuances of a favorite navigational tool; for the consumer wanting to search the options before making the buying decision; for fleet and Part 135 & 121 of operators

who are required to provide GPS instruction to their pilots. GPS Trainer makes time spent in the Aircraft more effective by providing the appropriate tools to learn the GPS receiver on the ground. • The most popular GPS units are included, pilot scan learn the Bendix/King KLN 89B by AlliedSignal, Garmin GNS530, GPSMap 430, 295 or Apollo GX50/60 all on a single CD • Manufacturers' simulators and operating manuals included • FAA GPS reference materials included • Tutorial runs on both PC & Macintosh systems.
 P/N 13-01074

ASA Interactive Demo CD (includes OnTop, IP Trainer, PrepWare, GPS Trainer, Flight Library, & CX-2
 P/N 13-01631

MY KIT AIRPLANE SOFTWARE CD

Written for XP and VISTA



This is a complete new program written with Microsoft Visual Studio. A Real Windows Program! Fully tested in XP and VISTA! Does require XP to have SP2 installed.

Consists of several modules for individual functions. These modules include the Main Menu, Project Entry, Primary Project Selection, Construction Information Entry, Expense Entry, Flight Information Entry, Maintenance Information Entry, and Weight & Balance Tool. Also included are forms for entering Advisor and Category Information. The unique Suppliers Information form contains fields for just about any information you wish to keep track of. There is also a very complete FAA page that contains all the FAA information necessary for you to build, certify, and get your FAA Airworthiness Certificate for your Experimental or Light Sport Aircraft. In addition there is a very comprehensive file of information on Light Sport Aircraft and their construction and operation.
 P/N 13-04694

MECHANIC'S TOOLBOX CD



Software for the mechanic to help make your job easier! Also includes the Engineering Manual Companion, Part number cross-references Torque Wrench Extension Calculator Continental and Lycoming engine troubleshooting, Battery Tester, Slick magneto, Aircraft bolts, screws and rivets.
 P/N 13-03463



AIRCRAFT LOGS ONLINE PILOT LOGBOOK

AircraftLogs allows you to safeguard, organize, and simplify your maintenance logs, expense records and flight records. You will have secure and instant access to your records anywhere you have an Internet connection. You can also provide secure access to other pilots, your employees, your maintenance providers and others you authorize. A revolutionary solution for managing flight logs, maintenance records and financial information is just a few clicks away. You have secure and instant access to your records from any Internet connection. Provide secure access to "other pilots, employees or maintenance providers. Finally, there's a solution to managing aircraft that fits the needs of private aircraft owners. Note: Annual subscriptions include 2 years of logbook transcription

| Description | Part No. | Price |
|--|----------|-------|
| Logbook only - Monthly | 13-06133 | . |
| Logbook only - Annual | 13-06134 | . |
| Piston Single Management pkg - Monthly | 13-06135 | . |
| Piston Single Management pkg - Annual | 13-06136 | . |
| Piston Twin Management pkg - Monthly | 13-06137 | . |
| Piston Twin Management pkg - Annual | 13-06138 | . |



THE NAVIGATION CD-ROM

The Navigation CD ROM teaches you VOR Navigation, NDB Navigation, HSI & RMI, GPS Navigation, & Airspace. You'll be prepared for action in the cockpit. Animation, sounds, quizzes and interactivity allow you to visualize navigation concepts while using simulations of actual aircraft equipment.

To make learning easy, each tutorial features an easy-to-use, point-and-click environment. If you can click a mouse, you can use these tutorials. No computer experience necessary. During each tutorial, your prompted where to click, when to proceed and what information to provide during quizzes. If you need more time learning a concept, it is easy as reviewing the section at hand. This CD-ROM features clearly written lessons, logical progression, quizzes, interactive equipment simulation, colorful graphics and animation. Navigation CD-ROM includes: • 5 interactive Multimedia Tutorials • 10 Hours of Narrated Instruction • 37 Instructional sections • 250 Original Graphics & Animations • 12 quizzes
 P/N 13-00892

VOR/NDB SIMULATOR V2.0

Enables you to practice real time VOR & NDB navigation on your computer! You don't have to worry about altitude control, radio communication, airspace, traffic or other major task as you would in real flight. Aircraft are expensive to operate and they make poor classrooms. With VOR/NDB Simulator, you're able to

learn navigation techniques on your computer, in an inexpensive non distracting environment. The screen consists of several components: An airplane flying across the screen, VOR and NDBs, navigation and flight instruments and controls that enable you to specify aircraft direction, airspeed, wind component and other options. Your objective is to set the navigation instruments accordingly, and then turn the aircraft as needed to intercept and track VOR radials and NDB bearings. You can practice position finding, interception and tracking skills such as DME arcs & holding. Best of all you can create custom navigation scenarios by dragging the VORs, NDBs & airplane around the screen wherever you wish. Its all point & click!
 P/N 13-01437

GETTING AROUND ON THE GROUND

Teaches types of airport markings, signage and lighting. Goes beyond simple technical knowledge by outlining hazards, safety tips & procedures that will help keep you aware, knowledgeable & safe on the ground. Features:
 • Full sound narration to make learning easy. Graphics

that show the airport environment from ground view • Skills for preventing runway incursions • Complete descriptions and visuals of airport markings, signs, and lighting • Methods of incorporating knowledge of markings, signs, and lighting in your flight operations • Ground procedures • Safety "Quick Tips" that you can use immediately • Case Studies of real-world runway incursion incidents and accidents • Printable documents from NASA and the FAA. Contains: • 3 hrs of narrated instruction • 15 instructional sections • 125 original 3D graphics & animations • 40 quiz questions • 17 "Quick Tips"
 P/N 13-01438

FLIGHT OF VOYAGER CD (DICK RUTAN)



This is a recount of the horrific, horrendous, heroic & humorous moments of the Voyager project through the eyes of the pilot Dick Rutan. On Dec. 14, 1986 Voyager took off from Edwards AFB in California and 9 days later landed at the Edwards, completing the first ever non-stop, unrefueled world flight. This 3-CD set (3.5 hrs) includes a mini journal map of the flight, historic photos, fun facts, & more.
 P/N 13-01163

COMPUTER SOFTWARE



PANEL PLANNER INSTRUMENT PANEL DESIGN SOFTWARE

Panel Planner software gives you the power to design and build instrument panels in record time. Simply drag full-color, photo-realistic instruments, avionics, and cockpit controls into place on an aircraft panel template or photograph. Panel Planner tracks total cost, total weight, and peak current, generates an equipment list, and even prints actual-size hole-cutting templates and color mock-ups. Panel Planner is easy to install and use with its continuous context-sensitive help to guide you every step of the way. The updatable database includes equipment from King, Narco, Sigma-Tek, David Clark, P.S. Engineering, Insight, Garmin, IFR, II Morrow, UMA, Mitchell, Trimble, Arnav, S-Tek, Century, Vision Microsystems, Avidyne, Digify, Skyforce, and many more; PLUS switches, lights, control cables, vents, circuit breakers, trim indicators, etc. Create labels, color-coded annunciators, or placards.

PANEL PLANNER PRO (2.9 VERSION)

Our largest update yet! Over 120 megabytes of updated instruments and panels. Panel Planner Pro is designed for the aircraft owner and the homebuilder. Panel Planner gives you the power to design and build instrument panels in record time. Simply drag full-color, photo-realistic instruments, avionics, and cockpit controls into place on an aircraft panel template or scanned photograph. Panel Planner tracks total cost, total weight, and peak current, generates an equipment list, and even prints actual-size hole-cutting templates and color mock-ups with your desktop printer. Panel Planner Pro for Windows..... P/N 13-44415.....
Panel Planner Pro for Macintosh..... P/N 13-06210.....



JEPPESEN FLITESTAR FLIGHT PLANNING SOFTWARE

The current version of FliteStar calculates the optimum altitude based on total distance, winds aloft and your aircraft's performance. Experiment with different temperatures, power settings & altitudes and see their effects on performance. Comes with many popular aircraft already installed, including light piston, turbo-prop and jet aircraft. Do "what if" simulations, calculate weight & balance with graphic feedback. The only flight planner with the accuracy of a Jeppesen NavData database. You get every navigational chart at your fingertips. Zoom from continent-wide overviews down to half mile details. Roam across charts with a mouse, select way points by pointing and clicking. View victor airways, VORs, NDBs, intersections, airports, and frequencies. Enter winds for each flight leg, or retrieve them over your modem from Jeppesen. Do weight and balance, speeds, performance, and fuel burn with graphic feedback. Exclusive flight engineer module lets you do "what if" aircraft performance analysis. Optional subscriptions database updates from Jeppesen Sanderson. Change your route by "stretching" it to any other waypoints on the chart. Create user waypoints on the fly by just pointing at the area of the chart and holding Atl key. Find distance and radial from any point on chart to another point by simply pointing at each point on chart. Compute airway and MEAs between VORs for any route manually or automatically. Find common airways between any VOR and/or intersection. Enter winds for each flight leg, or retrieve them over your modem from Jeppesen.

JEPP FLTSTAR VFR N AM WINDOWS..... P/N 68273
JEPP FLITESTAR IFR N AMERICA..... P/N 6120
JEPP FLITSTAR VFR EUR WIND CD..... P/N 69383
JEPP FLTSTR IFR/VFR EUR WINDOW..... P/N 6006
JEPP FLTSTAR IFR/VFR WORLDWIDE..... P/N 65703
JEPP FLTSTR IFT/VFR AMER. WIND..... P/N 65704

COMM 1 VFR/IFR RADIO SIMULATOR

The closest thing to talking on the radio in the cockpit. Comm1 has over 6 linear hours of interactive communication training - but you can practice for days & weeks. Learn where to locate frequencies quickly. By mastering radio management skills with Comm1, you'll always be one step ahead of the next radio call. Comm1's instructionally-sound curriculum takes you through progressively more complex airspace so that you can feel confident in any environment. Being prepared with what to say, when, and in what order, is half the battle when mastering radio communication skills. Practice selecting and saying the correct radio announcements & responses in all types of flight settings. With Audio pilot adapter, pilots can link their computer to an aviation headset to create a virtual cockpit. (9V battery)

Comm1 - VFR Radio Simulator..... P/N 13-32221
Comm1 - IFR Radio Simulator..... P/N 13-00093
Comm1 - Clearances on request..... P/N 13-00741
Headset with Boom M/C..... P/N 13-33331
Plug & Play Combo VFR (Comm1 & Headset)..... P/N 13-34441
Audio Pilot Adapter..... P/N 13-03249



MAX TRESCOTT'S G1000 CD-ROM COURSE

There is a revolution sweeping through general aviation. All new aircraft ship with advanced glass cockpits and pilots are faced with the challenge of transitioning to these new systems. The most popular system is the Garmin G1000, and now you can master the system yourself with this new CD-ROM set produced by the author of the popular Max Trescott's G1000 Glass Cockpit Handbook. This course includes: More than six hours on two CD-ROM's, Large, full screen views of displays, Movie screen captures of operating knobs, Printable G1000 front panel displays, Tips from factory and Master CFI's, Narration by two CFI's for easy listening, Keyword searchable slides and transcripts, Optional quizzes to reinforce key points, Files that run on Windows, Macintosh and Linux. PN 13-05534

GARMIN G1000 GLASS COCKPIT BOOK - Learn about all Garmin G1000 features & differences Get the single source of information that educates pilots about all of the features and benefits of flying the Garmin G1000, and how features vary among aircraft manufacturers. Whether you fly a Beechcraft, Cessna, Columbia, Diamond, or Mooney, you'll learn which Garmin G1000 features apply to your particular aircraft. Or, if you're planning to buy a new Very Light Jet (VLJ) like the Cessna Mustang or Diamond D-Jet, this book will help you prepare while you wait for delivery. PN 13-05533



MAX TRESCOTT CD-ROM COURSE

Makes it easy to learn all of the details of flying with WAAS. Designed for the Garmin 430W, 530W, 480, G900X and G1000, the course leads you step-by-step through flying these approaches. Videos demonstrate the flying of actual approaches, and software simulators let you practice loading and flying these approaches. The course is taught by Master CFIs Max Trescott and Susan Parson, who say it covers the "gotchas" that can trick even experienced GPS pilots. PN 13-05067



KITLOG PRO SOFTWARE

KitLog Pro is an organizational tool that allows the builder of any type of aircraft to create, archive, maintain, and display the entire building process. Whether your experimental aircraft is a plans-built EAA bi-plane, a Van's RV, a Glastar, or even a Lancair IV-P, KitLog Pro is the most efficient way to ensure that you meet the requirements of a builder's log for the certification of your homebuilt aircraft.

Features: • Complete Builder's log to satisfy FAA requirements
Detailed Expense Log • Test Flight Log • Maintenance Log • Weight & Balance Calculator PN 13-03705

MULTIMEDIA SOFTWARE FLITESCHOOL



In terms of speed, graphics, clarity, and learning value, FliteSchool from Jeppesen Software is unequaled in its class. Much more than a series of "flash cards" that help you memorize the answers to FAA exams, FliteSchool provides programmed learning modules and Hypertext referencing that leads through a series of associated references to learn more, faster! Flite School's Dynamic Cybernetic Learning enhances your training by analyzing your responses and leading you to new subject areas. You'll find studying with FliteSchool to be more interesting and more effective than other software programs and many video tapes. Material is organized into 20 categories and monitored by topic. The software takes you step-by-step through each subject area and returns to areas where you need more work. When you've mastered enough material to pass the FAA exam, you receive a graduation certificate for your instructor to sign off.

Private Pilot..... P/N 13-100507
Instrument..... P/N 13-100519

CHARTCASE ELECTRONIC SOFTWARE



When connected to the internet, Chartcase provides access to FlightPrep, the multifunction graphical flight planning engine with approach charts and on-course overlays of TFRUs, SUAUs, and Nexrad weather shown in a single pass high speed web image. Chart Case brings new functionality and complete paperless cockpit data to general aviation pilots at a fraction of the cost of various products that would be needed to match Chart Case. Off-line, Chart Case has complete FAA instrument approach charts in PDF (printable) format for the entire United States. They are accessed using Chartcase's graphical search engine. The charts are updated every 56 days via CD-ROM.

ChartCase W/ Subscription..... P/N 13-04351

Minimum Sys. Requirements: •486/66 MHz PC processor • 4x speed CD-ROM drive •16MB RAM •Sound Blaster-compatible sound card •6MB hard drive space • Mic & speakers (or headset) • 800x600 resolution display w/ 256 colors • Windows 95™

PS

AVIATION SOFTWARE

VFLITE WEIGHT & BALANCE VISUAL



With our easy to use system, pilots can learn to quickly calculate the weight and balance of their favorite aircraft and save configurations for later use. The system allows pilots to visualize the loading condition from a unique profile view, arm, and moment charts. The intuitive software uses easy input boxes to select exact weights, and includes weight and balance references and training tutorial. Perfect for all pilots from student to seasoned professional. The unique "My Presets" feature allows you to store weights for passengers, baggage, and favorite fuel levels. Once they're stored, simply drag them from the list and drop them on the seats or fuel slider. Will a spreadsheet do that?

Expandable! Purchase additional aircraft modules for all of the aircraft that you fly! Contact us if you do not see your aircraft. This is it! The easiest to use weight and balance application available. The program comes with a free weight and balance tutorial to help you master the fundamentals. This tutorial makes it easy to use the program. Simply enter the aircraft data using intuitive input buttons or typed text, and the program provides: Total Weight, Moment View, Arm View, and Aircraft Profile View. If the aircraft is out of limits simply click on the fields to change the weights. Unlike other programs, there are no complicated instructions or data points to build. The chart of aircraft arm or moment is graphically displayed.

SEE www.aircraftspruce.com for a list of supported aircraft.

P/N 11-04767.....

GARMIN G1000 TRAINING: IFR PROCEDURES



The Jeppesen Garmin G1000 - IFR Procedures training is a new and advanced, extensive computer-based training program developed with input from Garmin that teaches the skills required to master the operation and confidently fly the G1000 in IFR conditions. Learn how to pull up and fly instrument procedures, load and activate approaches including RNAV and GPS approaches, new WAAS-enabled approaches such as LNAV, LNAV/VNAV, and LPV approaches, departures and arrivals, as well as performing course reversals, holding patterns, and executing missed approaches. The Jeppesen scenario-based, guided simulation system provides complete and comprehensive training allowing the pilot to become proficient in all advanced functions and tasks required for IFR flight and greatly facilitates the transition to flying the Technically Advance Aircraft and the Garmin glass cockpit. Garmin G1000 Training IFR Procedures.....P/N 13-06279
Garmin G1000 PDF & MFD Basics.....P/N 13-05787
Garmin G1000 PDF & MFD Advanced.....P/N 13-05788

A PRIVATE PILOT'S DIGITAL AVIATION LIBRARY



The 'Private Pilot's Digital Aviation Library' is a CD-ROM with all the FAA publications related to the Private Pilot certificate. Great for Students and Pilots of all experience level. The CD includes the following FAA publications: • Pilot's Handbook of Aeronautical Knowledge, • Airplane Flying Handbook, • Aviation Weather & Weather Services, • Private Pilot Knowledge Test Guide, • Private Practical Test Standards, • Private Question Test Bank, • Rotorcraft Flying Handbook, • Plus Float, Skiplane supplements. P/N 13-05018.....

WEATHER STATEMENT GROUND SCHOOL



Weather Statement Groundschool is a CD-ROM-based course on METAR's and TAF's. Nearly 2 hours of stunning, interactive training is provided. This tutorial on METAR's and TAF's is unlike any other such training. It not only teaches the most basic aspects of METAR's and TAF's, but also provides training on components that most pilots are unaware of. Still, learning is made easy and fun, through full voice narration and easy-to-use controls. **Where this tutorial truly shines** Weather Statement Groundschool promotes learning through human interaction—not just rote memorization. A remarkable feature is the interactive weather controls, which enable the user to "control the weather." For example, the user can specify wind speed, gust factor, direction, and other variables, and can then view how the weather statement displays this information. Since weather codes are confusing to interpret, the user can click the "Speak-It" button to hear a verbal translation. This allows the user to correlate codes with a true, visual picture and understanding of the weather. This tutorial CD is perfect for all pilots, from students to rated pilots who wish to remain sharp and proficient. It's also ideal for airport personnel, dispatchers, and anyone else who needs to view aviation weather information. Specifications: Windows Vista, Windows XP, Windows 98, or Windows 95 32MB recommended CD-ROM drive 10MB hard drive space Video supporting 256-color mode (minimum) Sound card (not required, but recommended) P/N 13-05575.....

WINN BALANCE



This software was originally designed for the Ultralight / Experimental aircraft builder/designer to assist in weight and balance calculations, it also works well on conventional aircraft. It is Great everyday flight planning as well. It will run on Win95/98/Me/2000/XP. The program interface is designed so that the CG and weight of your aircraft is automatically calculated with a minimum of effort.

MAIN SCREEN - This main screen contains all calculation input and dynamically displays real-time results. Hint screens are also of valuable assistance on this screen.

HELP SCREEN - Help is never far away, This help screen gives you all the information you will need to perform an initial weight and balance. It describes the entire process of how to weigh your qaircraft and some of the formulas to help you along the way.

SECONDARY INFORMATION SCREEN - This screen stores all your aircraft's installed equipment which forms a portion of your empty weight. This information is retained until you remove each item. It serves as a reminder as to what exactly was installed in the aircraft at the time of weighing. P/N 13-05599.....

JEPPESEN AVIONICS KNOWLEDGE LIBRARY



Master you GPS unit with Jeppesen's interactive e-learning for Garmin® GPS systems and Lowrance® Handheld GPS Systems. Jeppesen's advanced, self-paced digital learning programs provide training on all operational aspects of you GPS unit. It's the easy, proven way to get confident with all that you GPS has to offer. Key Features include: • Scenario-based, guided simulation • Realistic Emulator • Detailed, narrated demonstrations. • O-screen help and feedback systems. Discover the best way to use the full power of your avionics system compared to heads-down, in cock-pit training

| Description | Part No. | Price |
|---|----------|-------|
| Garmin® 430/530 VFR & Core IFR Procedures | 13-05644 | . |
| Garmin® 430/530 Advanced IFR Procedures | 13-05645 | . |
| Garmin® 430/530 WAAS Procedures | 13-05646 | . |
| Lowrance® AIRMAP 2000C | 13-05647 | . |
| Lowrance® AIRMAP 500/1000C | 13-05648 | . |

ASA INSPECTION AUTHORIZATION PREPWARE



This software incorporates the material from the Inspection Authorization Test Prep by Dale Crane, and also includes a PDF of the Inspection Authorization Computer Testing Supplement (CT-8080-8D). All Inspection Authorization candidates must take and pass the FAA's IA Knowledge Exam. This IA Prepware provides all the information needed to pass the IA Knowledge test, and helps candidates become familiar with the privileges and limitations of this highest level of maintenance certification. Includes an overview of the Inspection Authorization certificate, insights into the function of an IA (the inspections, authorizations, and paperwork that accompany the privileges), and excerpts of the FAA documents IAs rely on in their work. Inspection Authorization Prepware has the same great features found in all Prepware titles. Numerous study, preparation, practice and evaluation tools are available to help applicants obtain a confident edge before taking the FAA Knowledge Exam. Prepware brings the accuracy and reliability of ASA's industry-leading Test Prep books to your PC or Macintosh computer.

The software includes more than 400 example FAA questions and answer choices, supported with comprehensive explanations. The same reference material applicants will have access to during the actual test is included as a PDF (the "CT-8080-8D"). This way applicants can become familiar with these documents and learn how to glean the information they need to answer the questions, from such FAA publications as the Airworthiness Directives, Advisory Circulars, Type Certificate Data Sheets, FAA Order 8130.21D, and FAA Form 8130-3. System Requirements: Internet connection is required for product registration and updates.

IBM compatible PC with Pentium-class processor, Windows 2000, XP with Service Pack 2, or Vista. 128 MB RAM minimum for Windows 2000 and XP (512 MB for Vista). 150 MB available hard drive space, 1024 x 768 SVGA compatible display, CD-ROM drive, mouse or other compatible pointing device.

Macintosh computer with PowerPC G3, G4, G5, or Intel-Mac processor, OS X Tiger (10.4 or higher), 128 MB Ram minimum, 150 MB available hard drive space, 1024 x 768 SVGA compatible display, CD-ROM drive, mouse or other compatible pointing device.

For both Windows and Macintosh, Adobe Acrobat Reader is required.

P/N 13-06663.....

PS

ASA IFR SIMULATORS

IP TRAINER VERSION 7.0 IFR Procedures Course



IP Trainer is the only IFR simulator with a foundation of artificial intelligence in the form of a virtual instrument flight instructor (CFII), the only interactive courseware designed exclusively for instrument students, and the only program that can compare its knowledge of the Instrument Practical Test Standards

against a student's real-time flight simulation performance. Most importantly, while you're using IP Trainer to build a solid foundation of instrument skills, you'll also be saving money. IP Trainer users consistently attain their Instrument Rating with less dual time and with less expense than students who rely on traditional methods alone, saving an average of \$1,000 in their total training costs for the rating. With a built-in CFII, spoken ATC guidance, the comprehensive Instrument Flying textbook by Trevor Thom, and a full complement of IFR lessons, IP Trainer is the single best way to bring instrument training home.

- IP Trainer version 7.0.....P/N 13-50100
- IP Trainer V7.0 bundled w/ On Top™P/N 13-00656
- ASA Interactive Demo CDP/N 13-01631
- Demo On top/IP Trainer, prepware, GPS Trainer, Flight Library & CX-2

ON TOP™ IFR PROFICIENCY SIMULATOR



Inside On Top you'll find five of the most popular aircraft ever built. There's a Cessna C172, C182 and C182RG, and Piper's Warrior and Arrow. Also included are the Lancair Columbia 300, the Mooney MSE, and Beechcraft's Bonanza V-35, Beechcraft Baron 58, and Beech's 1900D twin-turboprop. Each model utilizes precise flight dynamics algorithms, right down to the deadly asymmetrical thrust you'll experience should you lose an engine in the Baron. Now, you can test your skills

against the reality of single-engine IMC in a light twin, or a twin-engine turboprop. This and other aircraft setup parameters are available for all aircraft. Each aircraft panel is rendered with a next-generation graphics technology that makes every gauge, pointer, tick-mark and knob on your panel as true-to-life as a computer can create. Couple the "Photo-realistic" graphics effect with On Top's precise mimicry of real aircraft instrumentation and you're as immersed in your simulated flights as you are in your actual flights. There's realistic sound effects, like radio idents, marker beacons, gear and flap extension, and tire sounds. You'll find panoramic out-the-window views, accurate runway lighting and haze layering. You'll even see the rivets across your wings as you look right or left on a circling approach, all with enough realism to make you sweat. Full instrumentation, like programmable GPS, HSI, RMI, Moving Map and auto pilot is just half of it. In On Top, you decide what instruments you fly with, and you decide where they'll go. Some IFR sim makers decide years before you ever get your copy what kind of equipment you'll fly with and where it will go in your panel, but in On Top you can change it every time. On Top's Real-World Weather is as variable as tomorrow's weather. Define winds aloft and then surface winds, then dial in degree of swing and speed of gusts. Create turbulence, cloud bases and visibility with as much variability as you can handle, so you'll never know if you'll have to fly the missed approach until you get to the bottom of the funnel. And best of all, make your virtual conditions stable, deteriorating, improving or randomly changing, over any given time frame. In the real world, getting your procedures down pat with a methodical and practiced scan is just the beginning, and there's always more to learn.

- On Top™ version 9.5.....P/N 13-06175.....
- On Top™ V. 9.5 bundled w/IP TrainerP/N 13-00656.....

THE COMPLETE G1000 COURSE FROM ASA



The Complete G1000 Course will help you transition from steam-gauge "round dials" to the Technically Advanced Aircraft (TAA) glass cockpit environment. This interactive software allows you to practice becoming proficient in operating the G1000 from the safety and privacy of your home or office computer.

The intuitive software interface makes this as easy to use as reading a book. Computer learning tools in the form of cockpit representations and demonstrations of the tasks combine with a Part 141 and and FITS-compliant G1000 course, which is given by Skyline Aeronautics and in forums around the country. In this way the software teaches you how to safely and efficiently use the G1000 without running up the Hobbs!

- P/N 13-04346

ASA INSTRUMENT REFRESHER SIMULATOR



Instrument Refresher is specifically designed for instrument-rated pilots to get some dual on the maneuvers required to maintain currency. Everything necessary to be fully prepared for your next Instrument Proficiency Check (IPC) is here. Build confidence in your instrument skills and get over the refresher hurdle with the guidance of our qualified and knowledgeable virtual CFII. Intercept / track NAVAIDS, holding procedures and approaches are all supported with interactive lessons. Use Instrument Refresher to stay fresh on the 6-month instrument currency requirements!

- PN 13-04264

HARDWARE OPTIONS FOR ON TOP AND IP TRAINER



FLIGHT SIM YOKE USB - Top of the line yoke features 15 button functions, throttle, prop, mixture controls, X&Y trims, gear and flap switches. Requires USB computer connection and Windows 98®. Prop and mixture controls work only with Fly and FlightSim 2000 software.

- P/N 13-00737



CH PRO RUDDER PEDALS USB - Features forward/backward slide motion for real simulation flying. Also works well as gas and brake controls for racing simulators. These 3 axes pedals are ideal with the 5 axes USB Flight Sim yoke. P/N 13-00738

- Kit #1 - Yoke and Rudder Pedals P/N 13-06766
- Kit #2 - Yoke, Rudder Pedals, & Throttle Quadrant, & Microflight Simulator Software (PN 13-04958) P/N 13-06765

CH THROTTLE QUADRANT USB - TWIN ENGINE. Fully programmable and featuring six physical detent axis' and up to 350 buttons. Throttle Quadrant USB takes you from the computer to the cockpit. Features: 6 Axis 12 Buttons (24 Button functions w/Control Manager Software (included), 6 Physical Detents, Fully Programmable with CH Control manager, Compatible with Windows 98, Windows ME, Windows 2000 & Windows XP. Compatible with all Windows based Games.

- P/N 13-03377



VRTR400 CONSOLE SIMULATOR

The VR Aircraft VRTR400 Console Simulator offers the ultimate in realism, flexibility, mobility, reliability, and cost effective flight training! This high quality

instrument panel simulation system represents what you would find in a real single engine aircraft. The VRTR700 is as real as it gets! With today's rapidly escalating operating costs, you can keep flying without burning a drop of fuel, or worrying about the weather. With a small 42" x 18" footprint, the VRTR400 Console simulator will fit in very compact areas, on a desk or small table. Built to rugged specifications, VR simulators will give years of trouble free service. VR simulators are built tough enough to let big kids and non-pilots fly it HARD! Not supplied: PC Computer system capable of operating Microsoft flight simulator 2004 or FSX. Suggest 2.2ghz or higher 2Mb ram Video card(s) capable of having three video outputs. Microsoft flight simulator program Rudder pedals (USB) VRTR400 Standard Radios..... P/N 13-06760..... VRTR400-G Dual Screen Glass(G1000)... P/N 13-06761.....



MICROSOFT FLIGHT SIMULATOR AS A TRAINING AID

Microsoft® Flight Simulator has inspired many thousands of young "gamers" to pursue flight training in real life and has provided certificated pilots with countless hours of entertainment.

And even though there is an awareness that PC-based simulations—and Microsoft Flight Simulator in particular—are helpful as aids in flight training and pilot proficiency, for many it is still unclear how best to benefit from the experience of virtual flying. P/N 13-04937.....



MICROSOFT FLIGHT SIMULATOR X DELUXE EDITION

"Flight Simulator X" is the culmination of nearly 25 years of the landmark "Flight Simulator" franchise and the most significant addition to date. The 10th addition to the highly successful "Flight Simulator" franchise, this newest addition will immerse players in a beautifully rich and realistic world, offering a completely new and innovative gaming experience with dozens of new aircrafts to choose from, including the AirCreations Kiss Ultralight and Maule M7-260C Orion with wheels and skis. Gamers of all ages, types and skills levels will experience firsthand what it's like to be an aviator traveling the globe either alone or online with others. FEATURES: Immersive World., Mission-based Gameplay, New Aircraft, Connected World, Interactive Airports. DVD-ROM for the Microsoft® Windows® 98, Windows 2000, Windows Millennium Edition (Windows Me), Windows XP and Windows Vista™ operating systems P/N 13-04958.....

VTS MULTIMEDIA TRAINING SOFTWARE



VTS training tools are priced affordably to allow each student to own a personal copy of the software. Each aircrafts systems are covered in detail far surpassing the general information provided in Pilots Information Manual. For example, the electrical schematic is presented on-screen just as it appears in the information manual. But instead of just sitting there looking mysterious and intimidating, this virtual schematic comes to life with a click of the mouse. Controls and indicators from the cockpit are also available on-screen, creating an animated simulation of the entire system.

- Aircraft Systems - Skyhawk P/N 13-03387
- Aircraft Systems - Warrior P/N 13-03388
- Aircraft Systems Seminole P/N 13-03389

PS

FLIGHT SIMULATORS

CH VIDEO GAME JOYSTICKS

Your pulse quickens, your muscles tighten, adrenaline surges through your veins as you engage enemy aircraft in gut wrenching aerial combat. With CH Products simulation controllers, the realism of your next combat mission ascends to new heights.



FLIGHTSTICK PRO - Windows 98, ME, 2000, XP, XP 64bit, Vista • 3 axes and 12 buttons - X, Y, and Z axes for Aileron, Elevator, and Throttle control - 4 traditional push buttons - 1 eight direction POV HAT switch • Total of 80 programmable functions with Control Manager software (included) • Simple ambidextrous handle • Dual rotary trim wheels for precise adjustment of ailerons and elevators • Side Throttle wheel • Large sturdy base with 7 foot USB cable • Plug and Play driverless USB installation • Quality industrial components and construction • Two year limited warranty P/N 13-05613

COMBATSTICK 568 - Windows 98, ME, 2000, XP, XP 64bit, Vista • 3 axes and 18 buttons - X, Y, and Z axes for Aileron, Elevator, and Throttle control - 6 traditional push buttons - 1 four direction HAT switch - 1 eight direction POV HAT switch • Total of 128 programmable functions with Control Manager software (included) • Stylized F-16 handle • Dual rotary trim wheels for precise adjustment of ailerons and elevators • Side Throttle wheel • Large sturdy base with 7 foot USB cable • Plug and Play driverless USB installation • Quality industrial components and construction • Two year limited warranty P/N 13-05614.....



FLIGHTSTICK - Windows 98, ME, 2000, XP, XP 64bit, Vista • 3 axes and 24 buttons - X, Y, and Z axes for Aileron, Elevator, and Throttle control - 3 traditional push buttons - 1 mode switch button - 3 four direction HAT switches - 1 eight direction POV HAT switch • Total of 176 programmable functions with Control Manager software (included) • Three color mode indicator LEDs on base • Realistic F-16 handle • Dual rotary trim wheels for precise adjustment of ailerons and elevators • Side Throttle wheel • Large sturdy base with 7 foot USB cable • Plug and Play driverless USB installation • Quality industrial components and construction • Two year limited warranty. P/N 13-05615.....



PRO THROTTLE - Windows 98, ME, 2000, XP, XP 64bit, Vista • 3 axes and 24 buttons - X and Y axes on miniature joystick - Z axis on accurate throttle sliding motion - 3 traditional push buttons - 1 mode switch button - 3 four direction HAT switches - 1 eight direction POV HAT switch • Total of 176 programmable functions with Control Manager software (included) • Three color mode indicator LEDs on base • Ergonomic left hand HOTAS design • Large sturdy base with 7 foot USB cable • Plug and Play driverless USB installation • Quality industrial components and construction • Two year limited warranty P/N 13-05616.....



MULTI-FUNCTION PANEL - Fully Programmable Keyboard for Gamers Regain domination with the first revolutionary, fully programmable keyboard designed specifically for gamers! Expanding on the role of the traditional keyboard, the MFP allows the gamer to program individual keys to emulate any combination of the following: • Keystrokes • Joystick buttons • Mouse buttons • Joystick axis • Mouse axis Each wireless, programmable key is re-usable, inexhaustible and can be removed and re-positioned anywhere on the MFP tray enabling a completely new customizable layout for each of your gaming needs. System requirements: • Windows 98, ME, 2000, XP, XP 64bit • Control Manager 4.2 installed (included) • USB port
CH 400-602 Multi-Function Panel P/N 13-05617.....
CH 400-603 MFP key Sets 26-50..... P/N 13-05618.....
CH 400-604 MFP Key Tray P/N 13-05619.....

HOT COMBAT SIM WITH DUAL SCREEN DISPLAYS



- Includes freight anywhere in the 48 Contiguous United States. **Chassis:** HotSeat Flight SIM - a powder coated, steel tubular frame **Monitor:** 22" and 28" HD LCD Monitors **Gaming System:** Intel Quad Core Processor with 2.4 Mgs each, NVIDIA 512mb graphics card, 4 gigs ram, DVD Drive. **Sound System:** 6 Speaker -Hot Seat Dolby 5.1 surround sound with subwoofer under the seat. **Gaming Controllers:** Logitech wireless keyboard and mouse. **Included Software:** Microsoft FS X, Deluxe Edition pre-installed P/N 13-06394.....

ALSO AVAILABLE:

HotSeat Heli Sim..... P/N 13-06393.....
HotSeat Pilot Pro..... P/N 13-06392.....

Visit our website or call for complete details on these additional models.

CH ECLIPSE YOKE



The new CH Eclipse !! Built with the same high end components you find in our industrial products, the CH Eclipse brings value added functions to complete all your favorite sims.

Features

- * Fully programmable fingertip paddles, ideal for flight and racing sims
- * Programmable trim / scroll wheels with center push function
- * Two backlit push buttons and a third traditional push button
- * Two 8-way hat with rocker switch and trigger on both sides of handle
- * Configurable POV hat for either left or right hand use
- * Colored handles for throttle / prop / fuel mixture
- * Three color LED selector dial giving you a total of 240 programmable functions with CH Control Manager software
- * Six analog 10 bit axes for aileron, elevator, throttle, propeller pitch, fuel and rudder
- * New and improved industrial grade material / components; indestructible robust plastic, free floating shaft and clamp extenders for the thinnest of desks P/N 13-06127

AUDIPILOT HEADSET ADAPTER



Wouldn't it be great to eliminate ambient room noises when you flight-sim? With AudioPilot you can! AudioPilot links your computer sound card to your aviation headset—and puts you in the virtual cockpit. It's easy to use—just plug AudioPilot between your headset and the computer and take off! Immerse yourself in the experience and enjoy flight-simming the way it's meant to be. • Feeds computer sound into headset

with high fidelity • Connects mic for high-quality verbal communication • Compact, sturdy and convenient • Plug & play—no software to install AudioPilot is the perfect companion to your flight-sim setup— and the perfect gift for any armchair pilot. Order yours today!

VCT HEADSET ADPT BATTERY ONLY P/N 13-04177

VCT HEADSET ADPT W/9V PLUG..... P/N 13-04178

VCT HELI AUDIO PILOT P/N 13-04179

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Practice Makes Perfect. The very latest, HotSeat FLIGHT SIM® where you'll fly in a way you've never experienced. Flying on our available PC, you are as close to the real cockpit as possible. With it's 6-speaker Dolby Digital® 5.1 Surround Sound, the sound moves with your view. Fully capable for pilot training and upgrade training. Includes our custom LCD stand. You supply the flight controls, monitor and PC, or we can supply it for you. **Available colors:** Red, Blue, Yellow, Black. Custom colors available upon request.



FLIGHT SIM ENTRY LEVEL - Includes freight anywhere in the 48 Contiguous United States. **Chassis:** HotSeat Flight SIM **Monitor:** Not included. **Gaming System:** Not included. **Sound System:** Hot Seat Dolby 5.1 surround sound with subwoofer under the seat. **Gaming Controllers:** Not included. **Included Accessories:** Flight Sim extended gaming console for flight controls and flight stacks, pedal mounts, cup holder, integrated power strip. **Included Software:** Not included. P/N 13-05279.....



FLIGHT SIM, EXTREME PC BUNDLE FLIGHT READY W/27" HD READY MONITOR - Includes freight anywhere in the 48 Contiguous United States. **Chassis:** HotSeat Flight SIM **Monitor:** 27" Widescreen HD LCD display and stand. **Gaming System:** NEW! Intel Quad Core 2.2 ghz , Nvidia 512mb, 4 gigs DDR2 RAM. HotSeat Extreme PC **Sound System:** Dolby 5.1 surround sound with subwoofer under the seat. **Gaming Controllers:** C&H Yoke & Pedals, Logitech Wireless Keyboard and Mouse. **Included Accessories:** Flight Sim extended gaming console for flight controls and flight stacks, pedal mounts, cup holder, integrated power strip. **Included Software:** Microsoft Flight Sim X P/N 13-05280.....



HOTSEAT FLIGHT SIM EXTREME - Includes freight anywhere in the 48 Contiguous United States. HotSeat Flight SIM - a powder coated, steel tubular frame **Chassis:** HotSeat Flight SIM - a powder coated, steel tubular frame **Monitor:** 28" Widescreen HD LCD display and stand. **Gaming System:** Intel Quad Core Processor with 2.4 Mgs each, NVIDIA 512mb graphics card, 4 gigs ram, DVD Drive. **Sound System:** 6 Speaker -Dolby 5.1 surround sound with subwoofer under the seat.

Gaming Controllers: Logitech wireless keyboard and mouse. **Included Software:** Microsoft FS X, Deluxe Edition pre-installed P/N 13-06391.....

PS

JEPPESEN AIRWAY SERVICES

JEPPESEN ENROUTE LOW & TERMINAL CHARTS

| Geographic Coverage | Part No. | First Year Total | # of 2"Binders Required Order Separately |
|--|----------|------------------|--|
| Full USA All 48 Continuous States | USA05 | . | 7 |
| East AL, CT, DE, DC, FL, GA, IL, IN, KY, MA, MD, ME, MI, MS, NC, NH, NJ, NY, OH, PA, RI, SC, TN, VT, WI, WV | USB05 | . | 4 |
| East & Central AL, AR, CT, DE, DC, FL, GA, IA, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, NC, ND, NE, NH, NJ, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, WV | USC05 | . | 6 |
| Central AR, IA, IL, IN, KS, LA, MI, MN, MO, ND, NE, OK, SD, TX, WI | USD05 | . | 3 |
| Central & West AR, AZ, CA, CO, IA, ID, IL, IN, KS, LA, MI, MN, MO, MT, ND, NE, NM, NV, OK, OR, SD, TX, UT, WA, WI, WY | USE05 | . | 4 |
| West AZ, CA, CO, ID, MT, NM, NV, OR, UT, WA, WY | USF05 | . | 2 |
| Southwest AZ, CA, CO, NM, NV, UT | USK05 | . | 1 |
| Northwest ID, MT, OR, WA, WY | USL05 | . | 1 |
| North Central CO, IA, KS, MN, MO, MT, ND, NE, SD, WY | USN05 | . | 2 |
| Great Lakes IL, IN, KY, MI, OH, WI | USP05 | . | 2 |
| Northeast CT, DE, DC, MA, MD, ME, NH, NJ, NY, PA, RI, VA, VT, WV | USR05 | . | 2 |
| Southeast AL, FL, GA, MS, NC, SC, TN | USS05 | . | 2 |
| South Central AR, LA, NM, OK, TX | UST05 | . | 1 |
| N. Cntl. & Gt. Lakes CO, IA, IL, IN, KS, KY, MI, MN, MO, MT, ND, NE, OH, SD, WI, WY | USU05 | . | 3 |
| S. & S. Central AL, AR, FL, GA, LA, MS, NC, NM, OK, SC, TN, TX | USW05 | . | 2 |
| California CA | CAL05 | . | 1 |
| Florida FL | FLA05 | . | 1 |
| Texas TX | TEX05 | . | 1 |
| Gulf of Mexico Gulf of Mexico (Helicopter Service), Instrument approaches within 200nm of the coast at airports with weather reporting capability. Also includes Gulf of Mexico Area chart. | USY05 | . | 1 |

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Northwest, J-NW: Washington, Oregon, Idaho
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 Southwest, J-SW:..... Nevada, Utah, Arizona, New Mexico, Colorado
 California, J-CA: California
 Alaska, J-AK:..... Alaska

CENTRAL AREA

Central, J-CN:..... Colorado, Nebraska, Kansas, Missouri
 North Central, J-NC:..... Minnesota, Iowa, Wisconsin
 Great Lakes, J-GL:..... Wisconsin, Illinois
 East Central, J-EC:..... Indiana, Ohio
 South Central, J-SC: Oklahoma, Arkansas, Louisiana
 Texas, J-TX: Texas
 Michigan, J-MI: Michigan

EASTERN AREA

Northeast, J-NE:..... Maine, Massachusetts, Connecticut,
 New Hampshire, Rhode Island, Vermont
 East, J-EA: New York, Pennsylvania, New Jersey
 Mid-Atlantic, J-MA: ... Virginia, Maryland, Delaware, West Virginia, D.C.
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 Florida, J-FL: Florida

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| Northwest | 13-22760 | . |
| East | 13-22765 | . |
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Transparent Pockets are ideal for holding trip charts, flight plans, aircraft checklists, etc. Index tabs & spiral binding make it easy to access the chart you want.
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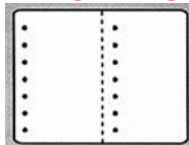
Transparent durable vinyl pocket holds two enroute charts. 7-hole punched for binder.
P/N 8063



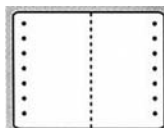
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MULTI PURPOSE PRINTER PAPER FOR JEPPESEN BINDERS



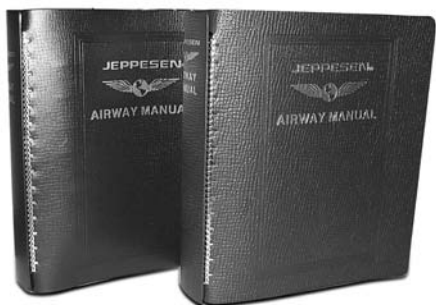
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PS

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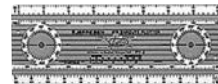
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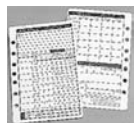
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Each pkg Contains: • Charttabs (set of 3) • Approach chart protectors (set of 10) • NavLog/Flight Plan Forms (set of 50) • Multi-tabs (set of 13) • Pilot Notes (set of 25 lined)
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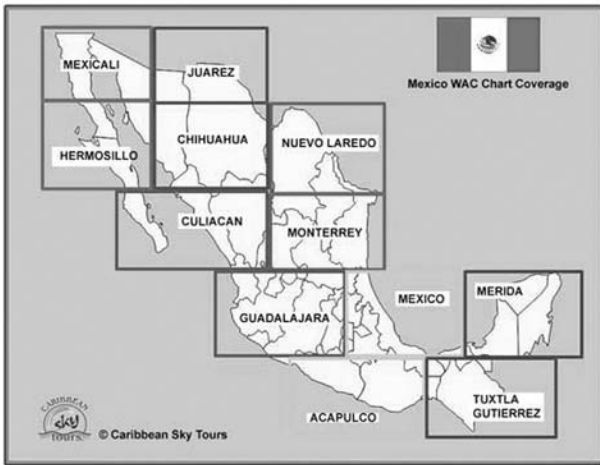


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MEXICO VFR WAC CHARTS



Published by INEGI - Mexico's National Institute of Statistics, Information & Geography. These World Aeronautical Charts (WAC) were released in 2008 and contain topographical, airport and navaid information. Mexico is divided into 12 regions and 2 regions are printed on each chart for a total of 6 individual charts. Updated every 4 years. SCALE 1:1,000,000. Note that aircraft landing in Mexico that departed from Central America, South America or the Caribbean are subject to special AOE requirements and can only use the Cozumel and Tapachula airports as AOE's. Detailed airport information and fuel availability can be found in the Pilot's Guide.

| Description | Part No. | Price |
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Flight Case Map - US 5th Edition

This is the map that actually started it all and launched our business in 1988. The Aviators' Quick Reference Map has become standard equipment in the flight bags of thousands of professional pilots all over the world and is standard issue to the pilots of several major airlines.

Colorful and accurate, these maps clearly depict state boundaries, time zones, major cities and towns, rivers, lakes, mountain ranges, national parks and points of interest. Also listed are major airports and VOR's (with frequencies for easy identification). Hundreds of interesting state by state facts and figures are listed on the back side. Two finishes: laminated or tearproof. The laminated version has a write-on/wipe-off surface. Either is durable enough to with stand years of use. A great aid for making more interesting PA's. When folded, laminated map measures 10.5" x 16" and tearproof is 8" x 10.75". Both fit perfectly in a flight case. Scale 1"= 90 miles.

Flight Case Map Laminated U.S. P/N 13-05677
 Flight Case Map Tearproof U.S. P/N 13-05678
 Flight Case Map Canada/Alaska P/N 13-05687

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Due to popular demand, we have come up with an extra large version of our popular Aviators' Quick Reference Map and made it wall-size. Perfect for use at home, office, hangar, briefing room, etc.

This map depicts state boundaries, time zones, major cities and towns, rivers, lakes, mountain ranges, national parks and other points of interest. Also listed are major airports and VOR's (with frequencies for easy identification).

It is ideal for flight planning or "pinning" your favorite destinations. Measures 33" x 23" or 52" x 36" and is laminated so that you can write on it and just wipe it off. Makes for an attractive wall mount anywhere! Shipped to you rolled with no creases. Scale: 1"= 55 miles.
 Wall Map U.S. Expanded P/N 13-05688
 Wall Map U.S. Map Standard P/N 13-05689

SKYCLOPEDIA OF THE US



As a passenger, did you ever hear another pilot make an exceptionally interesting PA and wonder where he or she picked up such interesting trivia? Well here's their secret.....the Skylopedia of the USA.

A perfect companion to our Aviator's Quick Reference Maps is the Skylopedia, written by veteran airline pilot Milt

Jines. Jines used his many years of line flying and personal traveling experience to put together a comprehensive collection of sights commonly seen from the air into one convenient spiral-bound book.

Contains literally thousands of listings of geological, historical and statistical points of interest in a state-by-state format.

Now it's your turn to make better PA's and entertain your passengers with this interesting information! Contains 359 information-packed pages. Measures 8 1/2" x 11" x 3/4"..... PN 13-05692



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The same map as the US Flight Case Map, without the folds and a 1 inch border added with latitudes and longitudes. Heavy map paper and laminate. Full map size: 33 1/2" x 23"

PN 13-05690

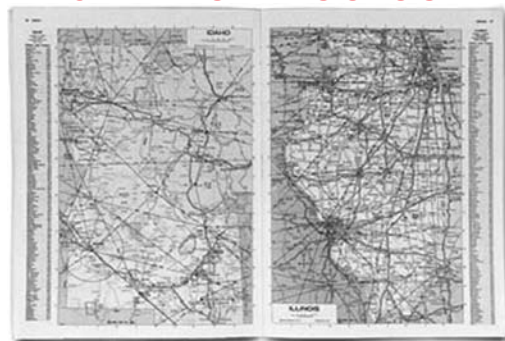
AVIATOR'S QUICK REFERENCE FLIGHT CASE MAP - EUROPE



Designed exactly with the same detail and colors as our U.S. Map, this Aviator's Quick Reference Map of Europe clearly depicts national boundaries, time zones, major cities and towns, rivers, lakes, mountain ranges, national parks as well as other points of interest. Listed are major airports as well as VOR's with names, frequencies and identifier codes. The tear-proof flight case-size maps measure 32.5" x 25" when unfolded and only 8" x 11" when folded. For mounting on a wall, we have a wall-sized laminated version that has a write-on/wipe-off surface and measures 35" x 27.5". Scale: 1" = 80 miles.

PN 13-05679

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Two versions of the map are offered: folded and a wall map. They are both packed with useful information on cities, parks, highways, and other points of interest from California to Maine.

The folded flight map is printed on durable tear-proof paper and fits perfectly in a seat pocket or briefcase, making it a great gift for the "Frequent Flyer"! The wall map is shipped to you rolled, has no folds and has a write-on/wipe-off surface. Flight Map measures

8 1/2" x 11" when folded and the Wall Map is 34" wide x 23" high.

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MAPS – CHARTS

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This slide chart gives pilots easy-to-understand explanations of weather systems including highs, lows, cold fronts, & warm fronts. The chart shows various weather symbols and provides a guide to become very familiar with aviation weather maps. Laminated for long life. Includes instruction booklet & study guide. Size: 8.5" x 11".
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ICE ADVICE™ provides the pilot a handy reference for avoiding, detecting and escaping icing conditions...one of the top concerns of general aviation instruments pilots. This chart, when employed with the icing risk chart on the front side, can help the pilot decide an altitude change that will lower the icing risk. ICE ADVICE™ is laminated in a durable 10 mil, satin matte finish, and is 8.0" x 5.5"
P/N 13-04220.....



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The Scenic Flight Maps give you many different routes for sightseeing to the major landmarks, famous places in Los Angeles and Orange County or San Diego area. The multiple color graphs and route pointers are really easy to read and follow. The map is laminated to keep from daily tears and protects from liquid spill. On the back side, it shows

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These Quick Refresher Charts provide a wealth of useful information that every pilot seems to forget over time. Available to "refresh" the pilot on IFR procedures & regulations, Weather info, VFR procedures & regulations, mountain flying, passenger info (the right seat), flying to Canada, and flying to the Bahamas. These charts are laminated for long life & fit right in your flight bag.

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Quick Refresher Weather..... P/N 13-40416.....
Quick Refresher IFR..... P/N 13-40516.....
Quick Refresher Mtn. Flying..... P/N 13-00422.....
Quick Refresher The Right Seat..... P/N 13-00423.....
Quick Refresher Flying to the Bahamas..... P/N 13-00426.....

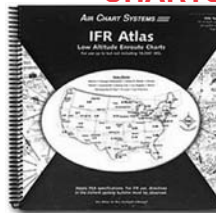
CANADA FLIGHT SUPPLEMENT IFR CHART



The Canada Flight Supplement is a joint civil/military publication. It contains information on Canadian and North Atlantic aerodromes and is used as a reference for the planning and safe conduct of air operations. Features: •General: Tables, legends and associated information pertinent to interpretation of the supplement. •Aerodrome Directory: Data and sketches for Canadian aerodromes and heliports and selected aerodromes in the North Atlantic. •Planning: Information for flight planning, characteristics of airspace, chart updating,

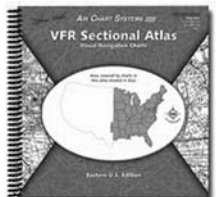
flight restrictions, IFR routes, airway intersections and chart distributors. •Radio Navigation and Communications: Data for radio navigation aids and communication facilities. •Military: Flight procedures and data, including sections on procedures for flight in the USA, North Atlantic and Alaska, air/ground communications and military training routes/areas. •Emergency: Emergency procedures. •The Canada Flight Supplement, measuring 5 1/4 by 8 1/4 inches, is available in English or a bilingual format. Data for the province of Quebec and the National Capital Region are presented in French in the bilingual edition.
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IFR charts for the 48 contiguous states presented in one 11"x 11" spiral-bound volume. Charts are easier to locate when you need them, and easier to read in their large presentation. Meets FAA/IFR requirements. Included all 13 NOS are charts shown in full size, every frequency servicing every IFR airport, all VORs plotted in position on flight plan chart, Military training routes, planning charts showing major airways, airports, and topographical features for visual or checking. Includes a coupon to receive 1yr of 56-day updates from the publisher at no extra cost.
48 States..... P/N 8339.....

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Full-scale, Full-color reproductions of FAA/NACO Sectional Charts. No more hassle of finding charts or worrying about FAA ramp checks. Atlas format with convenient page numbering system eliminates the aggravation of folding and unfolding charts in the cockpit. With Air Chart's exclusive update service, you'll always have current, updated VFR Charts. (see E-Z Updater on reverse) Aeronautical data on Sectional Charts includes all NAV/Comm frequencies, controlled airspace, airport identifiers and restricted areas. Only \$99 per year including update service! Eastern U.S. Atlas covers area east of the 97th meridian. Coverage extends westward to include area around Dallas, TX. Eastern VFR atlas.

EASTERN..... P/N 13-02478.....
WESTERN..... P/N 13-03170.....
EAST/WEST..... P/N 13-04382.....

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Aviations first full-color chart atlas contains WAC scale charts for the 48 contiguous US states. In addition, all 30 class B Airspace and 130 Class C Airspace are reproduced from Sectional Scale charts. With Air Chart's exclusive NOTAM update service, you'll have current and legal VFR charts for the whole country. Easy to use key chart and page numbering makes navigation within the Atlas simple. You'd have to spend over \$400 to get all the charts contained in the

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V SPEEDERS PILOT CARDS



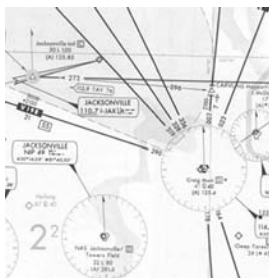
Set of 5. Provide a quick reference for aircraft data such as useful load, fuel capacity, and all V speeds. These are durable write-on cards. (2"x3.5") which are excellent for instructors and students. Prepare a card for each aircraft you fly and keep them in your pocket.
P/N 13-00463.....

IFR FLIGHT FILE



This handy chart planner and organizer holds NOS or Jeppesen approach plates, SIDs and STARs, and airport diagrams. Features easy to load static-hold chart protectors, and fits yoke clips & keyboards. Contains a wealth of important reference information relating to IFR departure, enroute, approach, and alternates.
P/N 13-55016.....

IFR AREA CHARTS - U.S.



United States Government Flight Information Publication IFR Area Charts - U.S. Area consisting part of: * A-1 Minneapolis/St. Paul * Detroit * St. Louis * Atlanta * Jacksonville * Miami * Washington * A-2 San Francisco * Los Angeles * Phoenix * Denver * Kansas City * Dallas/Fort Worth * Chicago/Milwaukee
P/N 13-00773.....

VISUAL NAVIGATION CHARTS

FAA SECTIONAL CHARTS



Sectional aeronautical charts are designed for visual navigation of slow to medium speed aircraft. The topographic information featured consists of the relief and a judicious selection of visual checkpoints used for flight under visual flight rules. The checkpoints include populated places, drainage patterns, roads, railroads, and other distinctive landmarks. The aeronautical info on Sectional Charts includes visual and radio aids to navigation, airports, controlled airspace, restricted areas, obstructions, & related data. (Scale 1"=6.86 nm/ 1:500,000. 60"x20" folded to 5"x10") Revised semi-annually, except most Alaskan charts are revised annually.

Sectional Charts P/N 8403
Set of 37 charts (w/o AK & HI) P/N 8557

NOTE: When ordering charts, complete part no. with first 3 letters of chart title. Ex.: Seattle sectional is P/N 8403SEA.

For Subscription service: Add -SUB (example: 8403SEA-SUB) and a new chart will be shipped & billed to you automatically at every revision until you cancel the subscription. Subscription chart orders require credit card no. on file.

Sectional & VFR Terminal Charts for conterminous United States, Hawaii, Puerto Rico and Virgin Islands

| | | | | | | |
|-------------|---------------|-------------|-------------------|------------------|--------------|----------------|
| Seattle | Klamath Falls | Denver | Dallas/Fort Worth | Brownsville | Seward | McGrath |
| Great Falls | Cheyenne | Wichita | Memphis | Miami | Juneau | Anchorage |
| Billings | Omaha | St. Louis | Atlanta | Hawaii | Ketchikan | Salt Lake City |
| Twin Cities | Chicago | Cincinnati | El Paso | Kodiak | Cape Lisburn | Kansas City |
| Green Bay | Detroit | Washington | San Antonio | Dutch Harbor | Point Barrow | Charlotte |
| Lake Huron | New York | Los Angeles | Houston | Aleutian Islands | Fairbanks | Cold Bay |
| Montreal | San Francisco | Phoenix | New Orleans | Western | Dawson | |
| Halifax | Las Vegas | Albuquerque | Jacksonville | Whitehorse | Bethel | |



CHART MASTER

Chart Master is Aircraft Spruce's online chart selection program designed to tell you exactly which aviation charts you will need for the route you intend to fly. Just plug in the 3 letter airport identifiers for your departure and destination airports, and Chart Master will provide you with a list of all of the charts needed for your route. Select VFR (sectional, terminal, WAC, AFD, or IFR (Low altitude enroute) or both and order any or all of the charts listed by Chart Master. This program is available on line at www.aircraftspruce.com.

FAA VFR TERMINAL AREA CHARTS

Terminal Area Charts depict the airspace designated as Class B Airspace. The information found on these charts, while similar to that found on Sectional Charts, is shown in much more detail because of the larger scale. These charts should be used by pilots intending to operate from airfield within or near a Terminal Control Area or an Airport Radar Service Area. Locations of Terminal Area Charts are indicated by a • on the Sectional Chart indexes. (Scale 1 inch = 3.43nm/1:250,000. 25 x 20 inches folded to 5 x 10 inches.) Revised semi-annually, except Puerto Rico/Virgin Islands is revised annually.

Terminal Area Charts P/N 8064
Set of 28 Terminal Charts P/N 8524

NOTE: When ordering charts, complete part number with first 3 letters of chart title. Ex: Los Angeles terminal chart is P/N 8064LOS.

For SUBSCRIPTION service: Add -SUB (example: 8064LOS-SUB) and a new chart will be shipped and billed to you automatically at every revision until you cancel the subscription. Subscription chart orders require credit card number on file.

CINCINNATI VFR TERMINAL AREA & FLYWAY CHART

P/N 13-21000

| | | | |
|------------|-------------|----------------|---------------|
| Atlanta | Detroit | Minneapolis | San Francisco |
| Boston | Honolulu | New Orleans | Seattle |
| Charlotte | Houston | New York | St. Louis |
| Chicago | Kansas City | Philadelphia | Orlando/Tampa |
| Cincinnati | Las Vegas | Phoenix | Washington |
| Cleveland | Los Angeles | Pittsburgh | Anchorage/ |
| Dallas | Memphis | Salt Lake City | Fairbanks |
| Denver | Miami | San Diego | |

AIRPORT / FACILITY DIRECTORY



The Airport/Facility directory is a pilot's manual which contains data on public and joint use airports, seaplane bases, heliports, VFR airport sketches, NAVAIDS, communications data, weather data sources, airspace, special notices, VFR waypoints and operational procedures. The seven volumes cover the conterminous United States, Puerto Rico, and the Virgin Islands. Includes data that cannot be readily depicted in graphic form; e.g., airport hours of operation, types of fuel available, runway data, lighting codes, etc.

| Area | Part No. |
|------------------|----------|
| Southwest U.S. | AFD-SW |
| Northwest U.S. | AFD-NW |
| So. Central U.S. | AFD-SC |
| No. Central U.S. | AFD-NC |

| Area | Part No. |
|-------------------|----------|
| East Central U.S. | AFD-EC |
| Southeast U.S. | AFD-SE |
| Northeast U.S. | AFD-NE |

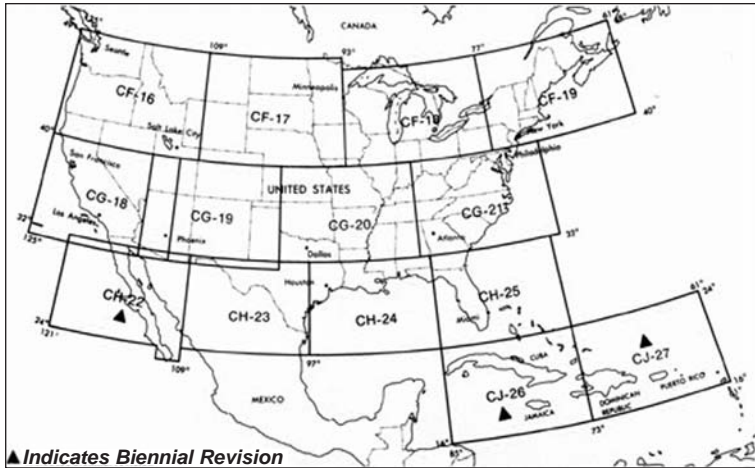
PS

LARGE-FORMAT CHART WALLET

This chart wallet helps pilots organize, hold, carry, and display 22 standard NOS charts conveniently. The black padded cover features the silver wings logo. There are ten double-sided, clear vinyl organizer pockets riveted to the cover. Along with the pockets in the front and back covers, these pages hold the charts so you can easily find them in a busy or turbulent cockpit environment. Measures 6.5"x 11.5" w/ 2.5" spine.

Large Book-Style Chart Wallet P/N 13-00412

VISUAL NAVIGATION CHARTS



WORLD AERONAUTICAL CHARTS

World Aeronautical Charts by NOS are designed to provide standard for the land areas of the world in a size and scale convenient for navigation by moderate-speed aircraft. Topographic information includes cities and towns, principle roads, railroads, distinctive landmarks, drainage, and relief. Aeronautical information includes visual and radio aids to navigation, airports, airways, restricted areas, obstructions, and other data considered pertinent. Scale 1:1,000,000 or 1" to 13.7 nautical miles, less detailed than Sectional & Terminal Area Charts, but useful for longer distance planning. Revised annually. 12 charts cover the US

WAC Charts P/N 8567 ea
Set of 12 U.S. WAC charts..... P/N 8805

NOTE: When ordering charts, complete part no. with chart number.

Example: WAC chart CF-17 is P/N 8567CF-17.

For SUBSCRIPTION service: Add -SUB (example: 8567CF-17-SUB) and a new WAC chart will be shipped and billed to you automatically at every revision until you cancel the subscription. Subscription chart orders require a credit card number on file.

▲ Indicates Biennial Revision
World Aeronautical Charts for the conterminous U.S., Mexico, & Caribbean Areas

OTHER VFR CHARTS:

- VFR-IFR Wall Planning Chart (U.S.) P/N 13-30703
- U.S. Gulf Coast VFR Chart P/N 13-30704
- Grand Canyon VFR Chart P/N 13-30706
- Baltimore-Washington Helicopter Route Chart..... P/N 13-30707
- Chicago Helicopter Route Chart..... P/N 13-30709
- Houston Helicopter Route Chart..... P/N 13-30711
- Los Angeles Helicopter Route Chart..... P/N 13-30712
- New York Helicopter Route Chart P/N 13-30713

World Aeronautical Charts for Alaska



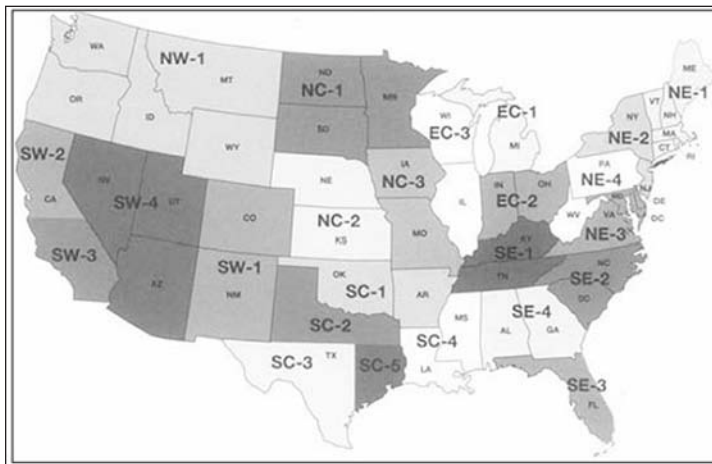
CHART MASTER

Chart Master is Aircraft Spruce's new online chart selection program designed to tell you exactly which aviation charts you will need for the route you intend to fly. Just plug in the 3 letter airport identifiers for your departure and destination airports, and Chart Master will provide you with a list of all of the charts needed for your route. Select VFR (sectional, terminal, WAC, AFD, or IFR (Low altitude enroute) or both and order any or all of the charts listed by Chart Master. This program is available online at www.aircraftspruce.com.

TERMINAL PROCEDURES COVERAGE OF THE CONTERMINOUS U.S.

Includes: • Instrument Approach Procedure (IAP) Charts • Departure Procedure (DP) Charts • Standard Terminal Arrival (STAR) Charts • Charted Visual Flight Procedures (CVFP) • Airport Diagrams
IAP Charts are designed to provide an IFR descent from the enroute environment to a point where a safe landing can be made. DP charts are Air Traffic Control (ATC)-coded departure procedures which have been established at certain airports to simplify clearance delivery procedures. STAR charts are ATC-coded IFR arrival routes established for certain airports to simplify clearance delivery procedures. CVFPs are an operational technique designed to move air traffic safely and expeditiously. In addition to conventional visual approach procedures, it has been necessary to specify routes/altitudes to enhance noise abatement at some locations. CVFPs have been developed to provide a pictorial display of these visual arrival routes. Airport Diagrams are specifically designed to assist in the movement of ground traffic at locations with complex runway/taxiway configurations and provide information for updating geodetic position navigational systems aboard aircraft.

Bound Volumes \$4.25
Loose Leaf Volumes..... \$4.25



| Description | Bound P/N | Loose Leaf P/N | Description | Bound P/N | Loose Leaf P/N |
|---------------------|-----------|----------------|----------------------|-----------|----------------|
| South Central Vol.1 | 13-01331 | 13-01364 | Southwest Vol. 4 | 13-00814 | 13-01546 |
| South Central Vol.2 | 13-01332 | 13-01365 | East Central Vol. 1 | 13-01341 | 13-01354 |
| South Central Vol.3 | 13-01333 | 13-00774 | East Central Vol. 2 | 13-01342 | 13-01355 |
| South Central Vol.4 | 13-01334 | 13-00105 | East Central Vol. 3 | 13-01343 | 13-01356 |
| South Central Vol.5 | 13-01545 | 13-02002 | North Central Vol. 1 | 13-01344 | 13-01357 |
| Southeast Vol. 1 | 13-01335 | 13-01366 | North Central Vol. 2 | 13-01345 | 13-01358 |
| Southeast Vol. 2 | 13-01336 | 13-01367 | North Central Vol. 3 | 13-01346 | 13-01359 |
| Southeast Vol. 3 | 13-01337 | 13-01368 | Northeast Vol. 1 | 13-01347 | 13-01360 |
| Southeast Vol. 4 | 13-01338 | 13-00106 | Northeast Vol. 2 | 13-01348 | 13-01361 |
| Southwest Vol. 1 | 13-01339 | 13-01369 | Northeast Vol. 3 | 13-01349 | 13-01362 |
| Southwest Vol. 2 | 13-01340 | 13-01370 | Northeast Vol. 4 | 13-02062 | 13-02063 |
| Southwest Vol. 3 | 13-01445 | 13-01446 | Northwest Vol. 1 | 13-01350 | 13-01363 |

CALIFORNIA AERONAUTICAL CHART

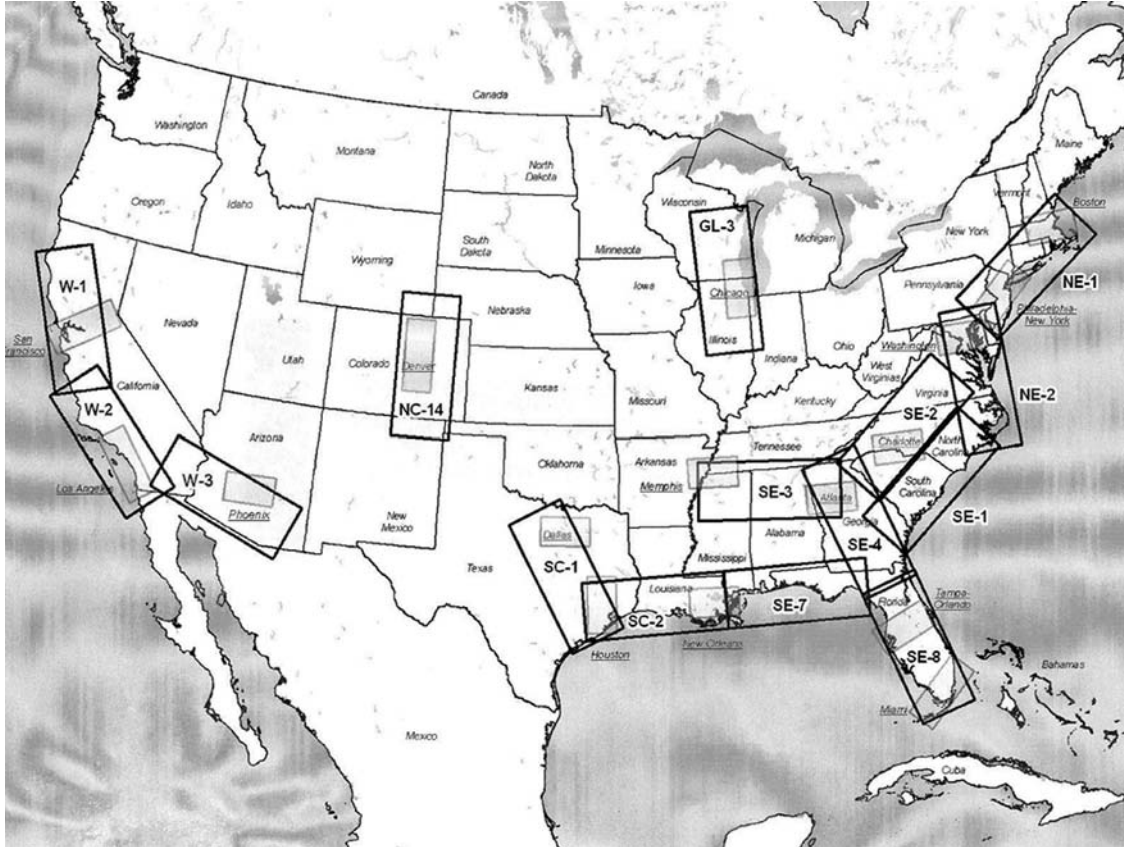
If you are planning a flight within the state of California, check out the 2002-2003 California Aeronautical Chart, which covers the entire state on one page and also include 5 sectional charts (Klamath Falls, San Francisco, Los Angeles, Phoenix and Las Vegas) The chart is designed for planning purposes, not for navigation.

P/N 13-30800.....

JEPPESEN VFR+GPS CHARTS

Jeppesen's new VFR+GPS Charts offer a fresh perspective on what a VFR chart should be with better use of color and contrast, coverage areas based on the way you fly, intuitive symbols for easier interpretation, and Space Shuttle radar data to more accurately depict terrain. Jeppesen VFR+GPS Charts are easier to use in the cockpit or at the kitchen table, they're designed to help you get more from your GPS, and they come from one of the most trusted names in aviation.

A VFR chart is only as good as your trust in the information provided and your ability to quickly interpret and act upon it. For students learning to fly, Jeppesen VFR+GPS Charts are easier to use and read, thanks to a more simplified layout. For instructors, they are easier to use as a teaching aid. And for all aviators, Jeppesen VFR+GPS Charts makes your VFR chart a more effective tool for flight planning, and you a more effective pilot, through enhancements like: Clear Airspace Boundaries—Easier recognition of controlled airspace with color-coding and clear labels to show airspace class and altitude segments. Streamlined Airport Symbolology—Jeppesen has updated familiar VFR chart symbolology, making it easier to understand. This is especially important when approaching a busy unfamiliar airspace. GPS Waypoints—Jeppesen has updated familiar VFR chart symbolology, making it easier to understand. This is especially important when approaching a busy unfamiliar airspace. JeppGuide® Airport Diagrams – With airport diagrams on the back, your VFR chart can be a useful guide from engine start-up to shut-down.



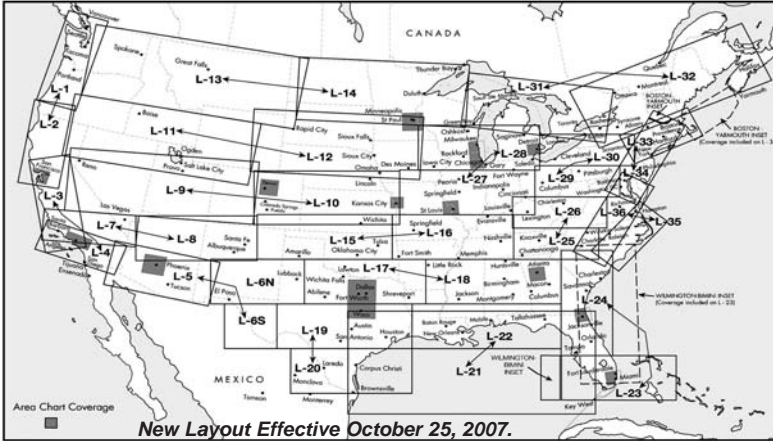
| Type | Description | Part No. | Price |
|---------|-----------------------------------|----------|-------|
| Enroute | GL-3, Chicago (CHI) | 13-06520 | . |
| Enroute | NC-14, Denver - Cheyene (DEN) | 13-06521 | . |
| Enroute | SC-1, Dallas - Houston (DAL) | 13-06522 | . |
| Enroute | SC-2, Houston - New Orleans (HOU) | 13-06523 | . |
| Enroute | SE-4, Georgia | 13-06524 | . |
| Enroute | SE-7, Northern Florida | 13-06525 | . |
| Enroute | SE-8, Southern Florida | 13-06526 | . |
| Enroute | NW-1, Northern California | 13-06527 | . |
| Enroute | W-2, Southern California | 13-06528 | . |
| Area | Atlanta (ALT) | 13-06536 | . |
| Area | Chicago (CHI) | 13-06537 | . |
| Area | Dallas - Ft. Worth (DAL) | 13-06538 | . |
| Area | Denver | 13-06539 | . |
| Area | Houston (HOU) | 13-06540 | . |
| Area | Los Angeles - San Diego (LA) | 13-06541 | . |

| Type | Description | Part No. | Price |
|---------|----------------------------------|----------|-------|
| Area | Miami (MIA) | 13-06542 | . |
| Area | New Orleans (NO) | 13-06543 | . |
| Area | San Francisco (SF) | 13-06544 | . |
| Area | Tampa - Orlando (TAM) | 13-06545 | . |
| Enroute | SE-1, South Carolina | 13-06529 | . |
| Enroute | SE-2, Charlotte (CHA) | 13-06530 | . |
| Area | Charlotte (CHA) | 13-06546 | . |
| Enroute | W-3, Phoenix | 13-06532 | . |
| Area | Phoenix (PHO) | 13-06547 | . |
| Enroute | NE-1, BOSTON (BOS) | 13-06533 | . |
| Enroute | NE-2, New York - Philadelphia | 13-06534 | . |
| Enroute | SE-3, Memphis (MEM) | 13-06535 | . |
| Area | Boston (BOS) | 13-06548 | . |
| Area | Memphis (MEM) | 13-06549 | . |
| Area | New York - Philadelphia (NY PHI) | 13-06550 | . |



INSTRUMENT NAVIGATION CHARTS

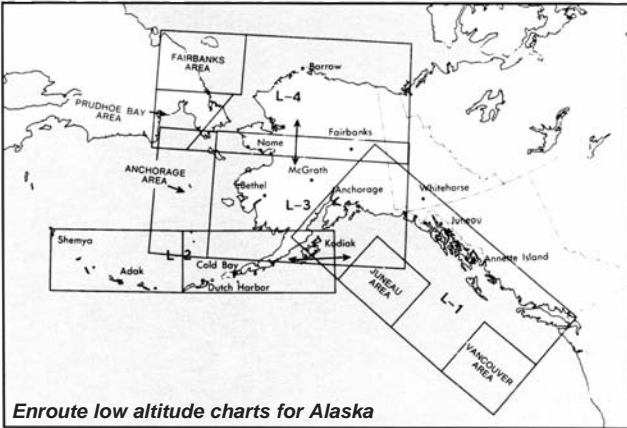
ENROUTE LOW ALTITUDE CHARTS



Enroute low altitude charts for conterminous U.S. (includes area charts)

Enroute Low Altitude charts (Conterminous U.S. and Alaska) provide aeronautical information for navigation under instrument flight rules below 18,000 feet MSL. Information includes: airways; limits of controlled airspace; position, identification, and frequencies of radio aids to navigation (Alaska 4-color series includes geographic coordinates); airports with terminal air/ground communications; minimum enroute and obstruction clearance altitudes; airway distances; reporting points; special use airspace areas; military training routes. Scales vary from 1 inch = 5nm to 1 inch = 20nm. 50 x 20 inches folded to 5 x 10 inches. Revised every 8 weeks. Area charts, which show congested terminal areas at a large scale, are included with subscriptions to any conterminous U.S. Set Low (Full set, East or West sets). Chart L-28 covers the Washington-Boston corridor at a scale similar to an Area Chart. Charts are revised every 8 weeks.

- Enroute Low Altitude Charts..... P/N 8070L..... *Jea.*
 Full Set (L1/2-L27/28 & Area Chart)
 Western U.S. Set (L1/2-L15/16 & Area Chart) P/N 13-30714
 Eastern U.S. Set (L11/12, L13/14, L17/18-L27/28 & Area Chart) P/N 13-30716
 Alaskan Set (Alaskan L1/2-Alaskan L3/4)..... P/N 13-30717
 Alaskan Set (Alaskan L1/2-Alaskan L3/4)..... P/N 13-30718
For individual charts please call 877-4-SPRUCE or visit our website at: www.aircraftspruce.com



Enroute low altitude charts for Alaska

IFR GULF OF MEXICO VERTICAL FLIGHT REFERENCE CHART (HELICOPTERS)

THIS Chart features: IFR GPS waypoint grid system for direct routing to and from offshore platforms; Oil lease block information; NAVAID data, Airport data; Chart scale of 1:500,000; Two-sided printing; Available folded (5" x 9") or flat (45" x 36").

Area of coverage: From latitude 26° 20' north to the U.S. Gulf Coast. From approximately longitude 87° 30' west to the Texas Coast.
 P/N 13-30721.....

NOTE: When ordering individual charts, complete part number with the chart number. Example: Enroute Low Altitude Chart L-10 is P/N 8070L-10. For SUBSCRIPTION service, add -SUB (example: 8070L-10-SUB) and a new chart will be shipped and billed to you automatically at every revision until you cancel the subscription. Subscription chart orders require a credit card number on file.



CHART MASTER

Chart Master is Aircraft Spruce's online chart selection program designed to tell you exactly which aviation charts you will need for the route you intend to fly. Just plug in the 3 letter airport identifiers for your departure and destination airports, and Chart Master will provide you with a list of all of the charts needed for your route. Select VFR (sectional, terminal, WAC, AFD, or IFR (Low altitude enroute) or both and order any or all of the charts listed by Chart Master. This program is available on line at www.aircraftspruce.com.

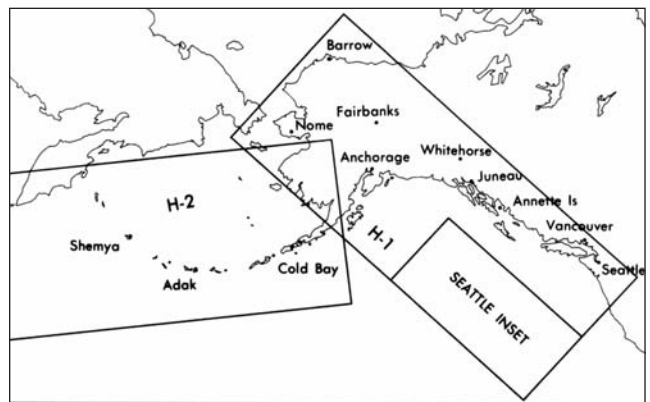
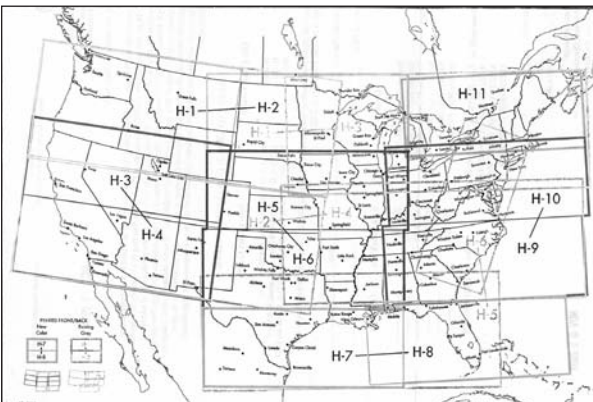
IFR ENROUTE HIGH ALTITUDE CHARTS

IFR Enroute High Altitude Charts (Conterminous U.S. and Alaska) are designed for navigation at or above 18,000 feet MSL. This four color chart series includes: Jet route structure; VHF radio aid to navigation (frequency, ID, channel, geographic coordinates); selected airports; reporting points. (Scales vary from 1" = 78nm to 1" = 30nm. 55 x 20" folded to 5 x 10".) Revised every 8 weeks.

NOTE: When ordering individual charts, complete part no. with the chart no. Ex: Enroute High Altitude Chart H1/2 is P/N 8075-H1/2.

Full Set (H1/H2, H3/H4, H5/6, H9/H10, H11), (H3/H4, H5/H6, H7/H8-very small area, H9/H10), (H3/H4-very small area, H5/H6, H7/H8, H9/H10, H11) P/N 8075-1

For SUBSCRIPTION service: Add -SUB (example: 8075-H1/2-SUB) and a new chart will be shipped and billed to you automatically at every revision until you cancel the subscription. Subscription chart orders require a credit card number on file.



CANADIAN AIA CHARTS

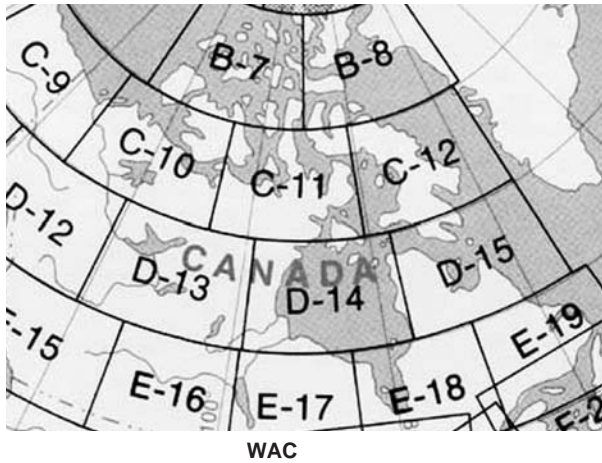
CANADIAN VNC (VFR) CHARTS

The VNC is used by VFR pilots on short to extended cross-country flight at medium altitudes and at low to medium airspeeds. These charts show aerodrome data, airspace information, radio aids to navigation, air/ground communications, and elevation with contour lines, tints and shaded relief.



| Item | Title | Part No. | Price | Item | Title | Part No. | Price |
|------|---------------------|----------|-------|------|---------------------|----------|-------|
| 5000 | VNC Toronto | 13-04425 | . | 5026 | VNC Inukjuak | 13-04487 | . |
| 5001 | VNC Sault Ste Marie | 13-04434 | . | 5027 | VNC Ungava | 13-04488 | . |
| 5002 | VNC Montreal | 13-04433 | . | 5028 | VNC Whitehorse | 13-04489 | . |
| 5003 | VNC Moncton | 13-04466 | . | 5029 | VNC Ft Simpson | 13-04490 | . |
| 5004 | VNC Vancouver | 13-04467 | . | 5030 | VNC Yellowknife | 13-04491 | . |
| 5005 | VNC Calgary | 13-04468 | . | 5031 | VNC Rankin | 13-04492 | . |
| 5006 | VNC Regina | 13-04469 | . | 5032 | VNC Coats Isl. | 13-04493 | . |
| 5007 | VNC Winnipeg | 13-04470 | . | 5033 | VNC Frobisher | 13-04494 | . |
| 5008 | VNC Thunder Bay | 13-04436 | . | 5034 | VNC Klondike | 13-04495 | . |
| 5009 | VNC Timmins | 13-04435 | . | 5035 | VNC Great Bear Lake | 13-04496 | . |
| 5010 | VNC Chicoutimi | 13-04471 | . | 5036 | VNC Bathurst Inlet | 13-04497 | . |
| 5011 | VNC Anticosti | 13-04472 | . | 5037 | VNC Baker Lake | 13-04498 | . |
| 5012 | VNC Gander | 13-04473 | . | 5038 | VNC Foxe Basin | 13-04499 | . |
| 5013 | VNC Kitimat | 13-04474 | . | 5039 | VNC Cumberland | 13-04501 | . |
| 5014 | VNC Prince George | 13-04475 | . | 5040 | VNC MacKenzie | 13-04502 | . |
| 5015 | VNC Edmonton | 13-04476 | . | 5041 | VNC Amundsen | 13-04503 | . |
| 5016 | VNC Flin Flon | 13-04477 | . | 5042 | VNC Cambridge | 13-04504 | . |
| 5017 | VNC Big Trout | 13-04478 | . | 5043 | VNC Boothia | 13-04505 | . |
| 5018 | VNC James Bay | 13-04479 | . | 5044 | VNC Baffin Bay | 13-04506 | . |
| 5019 | VNC Wabush | 13-04480 | . | 5045 | VNC Banks Island | 13-04507 | . |
| 5020 | VNC Goose Bay | 13-04481 | . | 5046 | VNC Resolute | 13-04508 | . |
| 5021 | VNC Atlin | 13-04482 | . | 5047 | VNC Devon Island | 13-04509 | . |
| 5022 | VNC Fort Nelson | 13-04483 | . | 5048 | VNC Hazen Strait | 13-04510 | . |
| 5023 | VNC Athabasca | 13-04484 | . | 5049 | VNC Ellesmere | 13-04511 | . |
| 5024 | VNC Wollaston | 13-04485 | . | 5050 | VNC Alert | 13-04512 | . |
| 5025 | VNC Hudson Bay | 13-04486 | . | 5099 | VNC Alaska Highway | 13-04516 | . |

CANADIAN WAC CHARTS



| Item | Title | Spruce PN | Price |
|--------|------------|-----------|-------|
| WACA5 | C-WAC A5 | 13-04517 | . |
| WACB7 | C-WAC B-7 | 13-04518 | . |
| WACB8 | C-WAC B-8 | 13-04519 | . |
| WACC9 | C-WAC C-9 | 13-04520 | . |
| WACC10 | C-WAC C-10 | 13-04521 | . |
| WACC11 | C-WAC C-11 | 13-04522 | . |
| WACD12 | C-WAC D-12 | 13-04524 | . |
| WACD14 | C-WAC D-14 | 13-04526 | . |
| WACD15 | C-WAC D-15 | 13-04527 | . |
| WACE17 | C-WAC E-17 | 13-04530 | . |
| WACE18 | C-WAC E-18 | 13-04531 | . |
| WACE19 | C-WAC E-19 | 13-04532 | . |

LOW ALTITUDE ENROUTE CHARTS



Enroute Low and High Altitude charts provide aeronautical information for instrument navigation in the low and high airway structure of the Canadian Domestic Airspace. The airspace over foreign territory and international waters in which Canada accepts responsibility for the provision of air traffic services, and other areas required for military use. The primary purpose of Enroute charts is to depict radio navigation data to provide rapid and precise location and identification of information requisite to radio instrument navigation.

| Item | Title | Spruce PN | Price |
|-------|------------------------------|-----------|-------|
| LE12 | LE12 Low Enroute Chart 1-2 | 13-04539 | . |
| LE34 | LE34 Low Enroute Chart 3-4 | 13-04541 | . |
| LE56 | LE56 Low Enroute Chart 5-6 | 13-04542 | . |
| LE78 | LE78 Low Enroute Chart 7-8 | 13-04543 | . |
| LE910 | LE910 Low Enroute Chart 9-10 | 13-04544 | . |



CANADA AIR PILOT

The Canada Air Pilot contains aeronautical information related to the conduct of the arrival or departure portion of flight instrument approach procedures, standard instrument departure procedures and noise abatement procedures.

PS

| Item | Title | Spruce PN | Price |
|------|-----------------------------------|-----------|-------|
| CAP1 | NWT Canada Air Pilot | 13-04553 | . |
| CAP2 | British Columbia Canada Air Pilot | 13-04554 | . |
| CAP3 | Prairies Canada Air Pilot | 13-04555 | . |
| CAP4 | Ontario Canada Air Pilot | 13-04556 | . |
| CAP5 | Quebec (English) Canada Air Pilot | 13-04557 | . |
| CAP6 | Quebec (French) Canada Air Pilot | 13-04558 | . |
| CAP7 | Atlantic Canada Air Pilot | 13-04559 | . |

JEPPESEN FLIGHT TRAINING



GFD PRIVATE PILOT MANUAL

Jeppesen's Guided Flight Discovery Private Pilot Manual is an integral component within the GFD Pilot Training System. The organization and colorful presentation of the text helps students learn quickly from the start. Discovery insets expand on important ideas and concepts in the text. The information ties in references from the world of aviation, including NTSB investigations and aviation history. Human Element insets introduce pilots to the human factors aspect of flight.

Private Pilot Manual P/N 13-17521
 Private Pilot Manual (w/ FAR/AIM text) P/N 13-17522



PRIVATE PILOT MANEUVERS MANUAL

Each maneuver is presented using colorful graphics, step-by-step procedure descriptions, helpful hints, PTS references and study exercises to help you visualize and understand each maneuver you will perform in the airplane. P/N 13-21770



PRIVATE PILOT SYLLABUS

Now spiral bound! Features a step-by-step description of course contents. Ideal for Part 141 flight training programs and may be adapted for Part 61 training. Includes: • Lesson objectives • Flight & ground time allocations for all lessons • Coordination of academic support materials with flight training • Enrollment notice & Graduation Certificate. P/N 13-04223

PRIVATE PILOT RECORD FOLDER



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A flight instructor's essential resource, the Aviation Instructor's Handbook details the fundamentals of instructing rules and techniques. A flight instructor's essential resource, this handbook details the fundamentals of instructing rules and techniques. It was rewritten in 1999 and is the successor to FAA AC60-14. P/N 13-06247

JEPPESEN INSTRUCTOR'S GUIDE CD



Includes all four instructor's guides: Private, Instrument/Commercial, Multi-Engine, and Flight Instructor and bonus materials consisting of lesson plan templates and instructor endorsements. Features: * Our philosophy of instruction * Covers the process of getting FAR Part 141 school approval * Provides pilot briefings to use in your student training * Answers and critiques for stage exams * Answer keys at the end-of-course exams P/N 13-06248

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Excellent visual aids for instructors & students. Designed for pilots as a quick reference aid. Features private & commercial maneuvers. Size: 6"x 3.25". P/N 13-01208



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Instrument/Commercial Manual P/N 13-21760
 Manual w/ FAR/AIM Text P/N 13-01217



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GFD PRIVATE/INSTRUMENT FLITESCHOOL SOFTWARE

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GFD Instrument FliteSchool P/N 13-100519
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 Commercial Pilot Airplane (single-engine land) .. P/N 13-01224
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FAA COMPUTER TESTING SUPPLEMENTS & AIRMEN KNOWLEDGE TEST QUESTIONS



Contains questions, answers, explanations, and references. Includes airplane and recreational pilot questions and is coordinated with Jeppesen Private Pilot Manual. Organized by topic, full-color charts, and unique sliding mask for self-testing. Instrument Rating and Flight Instructor

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JEPPESEN FLIGHT TRAINING



JEPPESEN - GFD PRIVATE PILOT VIDEO SERIES ON DVD

The Jeppesen GFD Integrated Ground School DVD Series is a great resource for students & instructors alike. The Private Pilot, Instrument/Commercial Flight Instructor, & Multi-Engine DVD's augment the written materials by providing visual reinforcement of topics. The state-of-the-art graphics, animation, and aerial photography help students grasp complex concepts. The GFD Private Pilot Integrated Ground School on three DVD is a great resource for students and instructors alike. These DVD's contain 10 hours of informative and entertaining video that augment the written materials by providing visual reinforcement on a variety of topics.

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Contains questions covering the airframe section of aviation technician training. Completely integrated with the A&P technician airframe textbook by chapter and subsection. 132 pages.

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JEPPESEN A&P TECHNICIAN POWERPLANT WORKBOOK

Contains questions covering the Powerplant section of aviation technician training. Completely integrated with the A&P Powerplant textbook by chapter and subsection. 268 pages.

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GFD INSTRUMENT/COMMERCIAL VIDEO SERIES ON DVD

The Jeppesen GFD Integrated Ground School DVD Series is a great resource for students & instructors alike. The Private Pilot, Instrument/Commercial Flight Instructor, & Multi-Engine DVD's augment the written materials by providing visual reinforcement of topics. The state-of-the-art graphics, animation, and aerial photography help students grasp complex concepts.

The GFD Instrument/Commercial Integrated Ground School on three DVD is a great resource for students and instructors alike. These DVD's contain 10 hours of informative and entertaining video that augment the written materials by providing visual reinforcement on a variety of topics. Each DVD series features a menu that gives you the option of choosing the lesson topic. The state-of-the-art graphics, animation, and aerial photography helps students master complex concepts such as the principles of instrument flight, instrument charts, meteorology, advanced systems and much more. This is a great supplement to GFD Instrument/commercial textbook.

P/N 13-02451.....

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Jeppesen Flight Instructor Kits, developed for both FAR Part 61 and FAR Part 141 training programs, are the most complete flight instructor training package available. The Deluxe 61/141 Flight Instructor Kit is developed for FAR Part 141 training programs. It contains the following materials:

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P/N 13-01189.....



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P/N 13-02453.....



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This book by Don Garrett is written in a direct, easy-to-understand style. Designed principally for A&P technician and Airway Science programs, it works equally well as a basic text for any course of study that requires a knowledge of aircraft systems. Starting with a background in electricity, the content brings the reader through complex systems and helps develop a high degree of understanding. 324 pages.

P/N 13-312685.....

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PRIVATE PILOT KITS



Guided Flight Discovery from Jeppesen provides the most complete training package available. Whether you are a chief flight instructor at a flight school or a student pilot working towards your first pilot's license, you can choose from a variety of integrated training materials. GFD has been developed for the finest flight schools, colleges and universities in the U.S. With Guided Flight Discovery, students will build a solid foundation of knowledge to take with them wherever they go. The GFD Pilot Training System puts schools and students on the leading edge of learning and builds better pilots. Call for a detailed list of kit components.

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Part 141 Kit.....P/N 13-02428

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| 13-02431 | Instrument/Commercial Part 141 Basic Kit | . |
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GFD INSTRUMENT/COMMERCIAL/MULTI-ENGINE STAGE EXAM BOOKLET - Includes Instrument/Commercial Stage and 12 blank exam answer forms. P/N 13-01171

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with a Commercial Certificate & Instrument Rating seeking a Flight Instructor Certificate. Suitable for the pilot seeking all 3 CFI ratings, or the basic certificated instructor seeking additional ratings. Kit Includes: •GFD Flight Instructor Manual •CFI Training Syllabus •Stage Exams •End-of-course Exams •File Folder Record •Enrollment Notices and Graduation Certificates •Private Maneuvers Manual •FAR/AIM •FAA Aviation Instructors handbook • CFI PTS Booklet • Kit bag.

CFI Kit Part 61.....P/N 13-01175.....
CFI Kit Part 141.....P/N 13-01176.....

GFD FLIGHT INSTRUCTOR MANUAL - Prepares CFI applicants for Flight Instructor-Airplane certificate, Instrument-Airplane and multi-Engine-Airplane Instructor ratings. This 560-page, full-color text includes over 1,000 photos and illustrations, workbook exercises, instructor endorsements and a comprehensive glossary and index are included. P/N 13-01178

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Private/Commercial Standard student kit..... P/N 13-01179.....

FAR/AIM 2009



* Includes FARs Parts 1, 2,3, 43, 61, 67, 71,73, 91, 97, 103, 105, 119, 133, 135, 136, 137, 141, 142, and applicable SFARs: NTSB 830, HMR175, TSR 1540, TSR 1544, TSR 1550, and TSR 1552 * Free TSR Part 1562 (Washington D.C. Operations) on Jeppesen.com * Includes all the AIM and Pilot/Controller Glossary with enhanced full-color graphics * Easy-to-read text on high-quality paper * Reference tabs help you easily locate regulations and AIM chapters * Jeppesen-recommended study lists direct you to the regulations pertinent to the certificate or rating you are working on * FAR exercises (with answers) provide real-world scenarios to enable you to understand the regulations for Private, Instrument, Commercial and Sport Pilot Exclusive AIM Supplement providing information on Jeppesen IFR Charts * Exclusive AIM Supplement providing information on Jeppesen IFR charts P/N 13-15450

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Guided Flight Discovery Multi-Engine Pilot Kit with Video - Designed to support Private & Commercial Pilots in adding a Multi-Engine Rating to their certificates. Kit consists of: • Multi-engine manual (w/work book questions) • Multi-engine video • Stage exams • End-of-course exams • Multi-engine syllabus record folder • Enrollment notices and graduation certificate. P/N 13-01776



MULTI-ENGINE PROGRAM - Covers multi-engine aerodynamics, systems & performance, engine-out operations and instrument flight through actual airborne and graphic sequences. Available with or without Jeppesen's Multi-Engine Manual. w/ Manual P/N 3195



GFD MULTI-ENGINE MANUAL - This text illustrates important aerodynamic concepts and complex systems using 375 full-color graphics. One of the strong points of the GFD series is that it maintains student interest through sometimes dry material by using sidebars to illuminate the text, presented as Discovery and Human Element insets. The Multi-Engine Manual builds on this practice with 2 new types of insets, one highlights flying careers and another that discusses in-flight situations that bring together critical points made in the text. Quotes also liven things up—the Multi-Engine Manual manages to take inspiration from sources as diverse as Anne Morrow Lindbergh & Monty Python. P/N 13-01644



MULTI-ENGINE SYLLABUS- A 36-page guide to both ground & flight training for the Multi-Engine Rating. Describes schedules, lesson objectives, content and completion standards for 2 stages of flight training & 2 stages of ground training. Required for FAR Part 141 flight schools. P/N 13-01173

AVIATION MAINTENANCE TRAINING KITS



Jeppesen's General Airframe & Powerplant training materials come in complete kit form. Comprehensive, developed by respected experts in the field, these kits give students the info they need to succeed in obtaining their Airframe and Powerplant license. Whether you're a veteran, building your own plane, or just learning, you can count on Jeppesen to help you get where you want to go. Jeppesen Maintenance products help you master the topic & realize success!

GENERAL A&P KIT INCLUDES - A&P Technician General textbook, workbook, and study guide • Acceptable methods, techniques and practices/aircraft alterations (AC43.13-1B/2A) •FAR handbook for aviation maintenance technicians • Student kit bag. P/N 13-01186



A&P TECHNICIAN GENERAL TEXTBOOK - The most current general aviation textbook available. Written to the new FAR part 147 standards. Expanded to include a complete section on electrical generators & motors, new hardware, and non-metallic components. Also includes current & comprehensive coverage on those items found in the previous version. Many new tables, charts and illustrations, including abrasives, corrosion removal & treatment, corrosion points, and helicopter weight & balance and others. General Textbook.....P/N 13-01187

General Study GuideP/N 13-01188

General WorkbookP/N 13-01189



AIRFRAME A&P KIT - Includes A&P Technician Airframe textbook, workbook & study guide and Student Kit bag.....P/N 13-01190



A&P TECHNICIAN AIRFRAME TEXTBOOK - The most up-to-date airframe textbook available. Written to meet FAR part 147 standards. Updated info includes rotorcrafts structures, winglets, T-tails, composites, expanded hydraulic and pneumatic system sections, landing gear safety devices and maintenance, nose wheel steering system, fire detection systems, electronic instruments, electronic systems monitoring displays, storm scope systems, and installation of communication and navigation equipment. More than 100 color illustrations, charts and diagrams.

Airframe TextbookP/N EA-ITP-A

Airframe Workbook.....P/N 13-01192



POWERPLANT A&P KIT - Includes A&P Technician Powerplant textbook, workbook & study guide. Exam package & Student Kit bag.....P/N 13-01193



A&P TECHNICIAN POWERPLANT TEXTBOOK - This is a major revision of our previous version, and is the most comprehensive aviation powerplant textbook available. It is written to meet, and even exceed, FAR part 147 standards. Includes over 120 color illustrations of engine cross-sections, turbine and reciprocating, instruments and control systems. Subject matter is arranged in a logical, practical order, with more emphasis on 'hands on' learning. 550 pages.

Powerplant textbookP/N 13-01194

Powerplant Study GuideP/N 13-01195

Powerplant workbookP/N 13-01196

JEPPESEN AVIATION VIDEOS/DVDS/BOOKS

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Weather, Emergencies, Air Safety



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AIRCRAFT ICING: Includes pre-flight planning considerations; operational considerations on the ground; flight effects on aerodynamics performance; conditions conducive to ice formation; and recognition/prevention of induction system icing.
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BASIC AVIATION PHYSIOLOGY: Covers avoiding/recognizing danger; vision in flight; spatial disorientation (vertigo); respiration and altitude; alcohol, drugs and performance.
P/N 3953

MOUNTAIN FLYING: Provides information and techniques for flying in the mountains and how to avoid the associated hazards.
P/N 13-22806

GPS/LORAN: Covers the operating principles of GPS & LORAN and discusses their benefits over conventional navigational equipment. Addresses filing a GPS or LORAN flight plan. Gives practical tips for using both systems.
P/N 13-22815

METAR/TAF: With implementation of METAR/TAF, the U.S. will utilize a common worldwide format for surface observations and forecasts. This video answers your questions and show you how to interpret current and forecast weather. Also includes 24-pg supplement providing comprehensive information on new formats (VHS).
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AERODYNAMIC PRINCIPLES (DVD) - Get a complete look at the forces that keep an aircraft flying and those that work counter to it. By studying the four forces of flight - lift, weight, thrust and drag - you will learn how each force affects flight.
P/N 13-06214



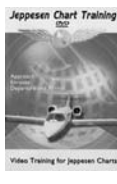
FITS FAA INDUSTRY TRAINING STANDARDS (DVD) - FAA Industry Training Standards (FITS) was designed by the FAA to better prepare pilots for the challenges of flying technically advanced aircraft. FITS teaches pilots to think and respond using real-flight scenarios.
PN 13-06215

JEPPESEN GARMIN G1000 TRAINING CORE & VFR PROCEDURES



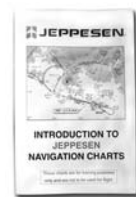
Teaches the skills required to master the operation and confidently fly the G1000. Includes a multi-mode methodology that includes a "Demo Mode" demonstrating the selected topic using narration, text, and animated graphics. A "Training Mode" that guides you through the required steps to accomplish the task, and a "Solo Mode" enabling the assessment of the user's performance. Over 60 topics taught in eight categories emulating the phases of flight including Abnormal and Emergency Operations, the use of the GFC700 autopilot, and Quick Tips. The program begins with the Start-Up category (product orientation) followed by typical Pre-Takeoff operations. It then progresses to Departure, Enroute, Arrival, Autopilot Operations and Emergency Procedures. An additional category called Quick Tips contains timesaving techniques to improve operational efficiency and product knowledge.
Garmin G1000 PDF&MFD Basic..... P/N 13-05787

G1000 Garmin PFD&MF Advanced P/N 13-05788



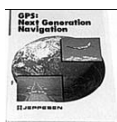
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Supplement your aviation knowledge with Jeppesen's FlightTime Videos and DVDs training topics. Each subject gives you a more detailed look at important aviation topics. This exciting training tool will enhance your knowledge of Approach Charts, Enroute Charts and Arrival/Departure Charts. All are included on one convenient DVD! Interactive quizzes are also included to reinforce important concepts. Material is suitable for students and experienced pilots alike.
P/N 3076



JEPPESEN INTRODUCTION TO NAVIGATION CHARTS

The chart training guide is published as a service for pilots training with Jeppesen charts. It is intended for reference only and includes some of the most commonly used symbolism. This guide is revised regularly; however some variance may exist between this guide and current chart services. These may be the result of one or more of the following; chart issuance dates, timely application of changes received from governing agencies, and/or the method of representing such information. The chart training guide has been designed as a supplementary training material and is not intended for navigation.
P/N 13-06253



GLOBAL POSITIONING SYSTEM

The Next Generation of Navigation - Provides the latest information available on GPS' rapidly changing technology, tools, rules, and procedures. You'll learn how to use GPS in VFR and IFR operations, and see how three different GPS approaches are flown. This fast-paced, 30 minute video includes 16-page GPS Reference Guide summarizing key requirements for GPS flight. (VHS)
P/N 13-22815

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Renew your CFI certificate at home - on YOUR schedule - using this Jeppesen comprehensive and flexible FAA-approved program in a 16-hour format. You will receive eight specially produced, high quality videos and eight chapters of comprehensive text material. Our flexible enrollment allows you to enroll as close as 30 days prior to your expiration date. And Jeppesen can now issue your temporary CFI certificate directly to you. What could be more convenient!
P/N 13-04898



JEPPESEN GFD DVD SERIES

The jeppesen GFD DVD Series is a great resource for students and instructors alike. These DVD's contain many hours of informative and entertaining video that augment the written materials by providing visual reinforcement on a variety of topics. The state-of-the-art graphics, animation, and aerial photography help students grasp complex concepts.

- Private Pilot DVD Series P/N 13-02449
- Inst./ Commercial DVD Series P/N 13-02451
- Flight Instructor DVD Series P/N 13-02452
- MULTI-ENGINE DVD SERIES P/N 13-02453

JEPPESEN MANUALS

JEPPESEN PILOT TRAINING

- Private Pilot Syllabus P/N 13-04223
- Private Pilot Airplane/Helicopter FAA Exam Package P/N 13-02415
- Private Pilot FAA Practical Test Study Guide P/N 13-01258
- Instrument/Commercial Record Folder P/N 13-01207
- Flight Instructor Syllabus P/N 13-02053
- Multi-Engine Practical Test Standards P/N 13-01225
- Schweizer Helicopter Manual P/N 13-02034

JEPPESEN MAINTENANCE TRAINING



- FAR Handbook for Aviation Maintenance Techs P/N13-31417-6
- Standard Aviation Maintenance Handbook P/N 13-19225
- Aircraft Systems and Components Book P/N 13-312685



ASA FLIGHT TRAINING

TESTPREP SERIES 2009 BOOKS



These books are a pilot's best bet. Included with every FAA question are the answers, explanations, subject codes and references, as well as explanations for incorrect answers. All of the questions in the particular FAA test question database are included here and have been arranged into chapters based on subject matter. Topical study, in which similar material is covered under a common subject heading, promotes better understanding, aids recall, and thus provides a more efficient study guide.

- Private/Recreational Pilot P/N 13-00984
- Instrument Rating P/N 13-00974
- Commercial Pilot P/N 13-01298
- Airline Transport Pilot P/N 13-01301
- Certified Flight Instructor P/N 13-32311

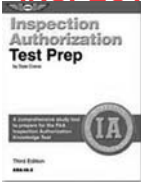
COMPUTER TESTING SUPPLEMENTS



Also known as the test figures books, these are the same books issued during FAA Knowledge Exams at the computerized testing centers. They come bundled with our test preps, but they are also available individually. Maps are reproduced with full color, exactly as printed by the FAA.

- Private & Recreational Pilot .. P/N 13-01828
- Instrument Rating P/N 13-01829
- Commercial Pilot P/N 13-01830
- Aviation Maintenance Technician/ Parachute Rigger Flight & Ground Instructor P/N 13-01296
- Flight Engineer #ASA-CT-8080-6A\ P/N 13-01293
- Airline Transport Pilot/Aircraft Dispatcher ... P/N 13-01295
- Inspection Authorization P/N 13-02262

INSPECTION AUTHORIZATION TEST PREP



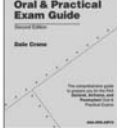
This book is an important reference source for all Aviation Maintenance Technicians (AMTs) seeking to add Inspection Authorization to his or her qualifications, as well as AMT schools preparing students for this test. All Inspection Authorization candidates must take and pass the FAA's IA Knowledge Test. The IA Test Prep provides readers with all the information needed to pass the IA Knowledge Test and helps candidates become familiar with the privileges and limitations of the highest level of maintenance certification. This book provides more than 350 sample questions, all of which are based on history and experience with the IA testing process. Example FAA questions and answer choices are supported with explanations, and FAA references from which the questions are derived are identified for students who wish to study them further. The IA Test Prep conveniently compiles the reference materials necessary to prepare for the IA Knowledge Exam into one volume, for an organized study program that AMT schools, instructors, and individuals alike can use to streamline their studies. P/N 13-01297

CERTIFIED FLIGHT INSTRUCTOR DVD COURSE-VIRTUAL TEST PREP



More than 10 hrs of high-quality DVD presentation meets all FAA Part 61 home study requirements. All the information needed to ace the FOI, CFI, BGI and AGI exams through exciting in-flight video and dynamic instructional aids and interactive quizzes. Includes 2004 Test Prep book and Computer Testing Supplement. A bonus DVD, Flight Review is included which covers the required specifics for a Biennial Flight Review. P/N 13-01081

ORAL & PRACTICAL EXAM GUIDE



This book prepares the AMT for the general, airframe, and powerplant exams with information on the certification process, typical projects and required skill levels, practical knowledge requirements in a question and answer format, and reference materials for further study. P/N 13-50165

AIR TRAFFIC CONTROL TESTPREP STUDY GUIDE



Prepares reader for the Air Traffic Control test, and includes questions, answers, explanations, application procedures, employment and training information, and test-taking strategies. P/N 13-02263

FAST TRACK TEST GUIDES 2009

BOOKS FOR AVIATION MAINTENANCE

To prepare students for the FAA knowledge exams required for A&P certification, each guide contains exact FAA questions with answers, explanations and references in the "Fast-Track" format to promote increased learning comprehension and retention. Prepared by industry expert Dale Crane, the Fast-Tracks also include a helpful guide to the Practical & Oral Tests.

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- Airframe (200 pages)..... P/N 13-32321
- Power Plant (200 pgs)..... P/N 13-32322

THE PILOT'S MANUAL SERIES



FLIGHT SCHOOL THIRD EDITION - covers all the tasks from the FAA Practical Test Standards for the Private and Commercial certificates. The textual descriptions are supported with full-color illustrations and photographs. Prepares readers for the student pilot milestones: first solo, cross-country flying, instrument flight, and night flying. Comprehensive airplane checkout review in the appendix which readers can use to prepare for transitioning to a new airplane type, insurance applications, or the Flight Review (BFR) ground lesson. P/N 13-00982

PRIVATE & COMMERCIAL - Prepares the reader for the Private and Commercial FAA Knowledge exams, covering all of the aerodynamic knowledge required by both certificates. A flight and ground training syllabus is available. P/N 13-00978



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Excellent learning and teaching aids for instructors and students, these handbooks comply with current practical test standards and regulations. Fold-out pages allow each maneuver to be complete on a 1-page spread, so the reader absorbs all the visual/textual information at once. Covers Private, Commercial and Flight Instructor maneuvers.

- For High-Wing aircraft P/N 13-02289
- For Low-Wing aircraft P/N 13-02290
- For Katana aircraft P/N 13-02291

THE PILOT'S MANUAL SYLLABUS SERIES



These syllabi meet all Part 141 requirements and supplement The Pilot's Manual Series textbooks: "Flight Training," "Private & Commercial," & "Instrument Flying." The syllabi have been reviewed by the FAA, present a fresh approach, and offer the most integrated, comprehensive, simple flight and ground training programs available. Flight lessons are presented side-by-side with their coordinating ground lessons for a completely integrated program. Each syllabus comes with appropriate Stage Exams.

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From the Ground Up offers them a comprehensive package of aeronautical information in one extensive and award-winning form. Often referred to as the "Bible" for ground school flight training—and required reading for student pilots in many countries—From the Ground Up delves deeply into the full range of aviation topics incl.: Theory of Flight, Engines, Airports and Airspace, Regulations, Navigation, Weather, Communications, Airmanship, Human Factors, and Air Safety. P/N 13-02266

ASA ADVANCED AVIONICS HANDBOOK



This handbook is designed as a technical reference for pilots who operate aircraft with advanced avionics systems. Whether flying a conventional aircraft that features a global positioning system (GPS) navigation receiver or a new aircraft with the latest integrated "glass cockpit" advanced avionics system, you should find this handbook helpful in getting started. The arrival of new technology to general aviation aircraft has generated noticeable changes in three areas: information, automation, and options. P/N 13-06670

ASA RISK MANAGEMENT HANDBOOK



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ASA FLIGHT TRAINING

THE COMPLETE PILOT SERIES

Bob Gardner's series of textbooks has been in publication since 1985 and is continually updated and expanded. Mr. Gardner writes in a conversational manner that is readable, comprehensive, and more importantly, will lead the reader to a greater understanding of the material. All his books are reinforced by the caliber of personal experience that integrates "technique" and "procedures" with mastery.



THE COMPLETE MULTI-ENGINE PILOT (3RD EDITION) - The best textbook available for learning multi-engine flying! Learn the fundamentals of flying multi-engine aircraft and aerodynamic laws that govern multi-engine flight under Bob Gardner's experienced and energetic tutoring.

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Many students prepare for the Commercial certificate and Instrument rating simultaneously, as a method to train efficiently, cut expenses, and expedite the process. This book combines these two phases in flight training to produce the most effective program towards completion. Review questions follow each chapter.

P/N 13-01714



THE COMPLETE PRIVATE PILOT (10th EDITION)

- For anyone interested in pursuing a Private Pilot or Recreational Pilot certificate, this book prepares the student with a thorough conceptual and practical understanding of the flying fundamentals. Several chapters refer to aeronautical charts, and a full-color example of a sectional chart is provided for use with exercises throughout the text.

P/N 3356

THE COMPLETE PRIVATE PILOT SYLLABUS (3RD EDITION) -

A comprehensive guide that stresses the importance of integrated flight training -- providing both flight and ground training for more complete preparedness. It is written to satisfy both Part 141 and Part 61 requirements. 126 pages.

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These exam guides are written to help prepare applicants for their oral exams with FAA examiners. Using a question and answer format, each guide takes the questions most likely to be asked by examiners and provides easy to follow responses. Pilots will find these guides indispensable tools in both planning for what to expect and mastering the subject matter. Instructors rate these as excellent preparation for students, as well as preps for Instrument Proficiency Checks (IPCs), aircraft transitions, and as general refresher material.

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| Cessna 152 | 13-01054 | Piper Tomahawk .. | 13-01058 |
| Robinson R22.. | 13-01464 | Diam.Katana DA20 | 13-01466 |

STUDENT KITS

Complete, comprehensive packages for pilot training. Flexibility will always be the best feature of ASA Student Kits. If a school or training program needs to swap out the fiberboard flight computer in The Complete Private Kit for our aluminum E6-B, that's okay! If everything in The Aviator Commercial Kit is just right for your school's curriculum, but you're using the commercial syllabus you created, that's alright, too. Your ASA Distributor can create a Personalized Aviation Custom Kit for you that leaves out our Syllabus, but still guarantees easy ordering, easy shipping, and easy delivery.



THE COMPLETE PRIVATE PILOT

- PPT-9, The Complete Private Pilot, by Bob Gardner, a comprehensive textbook
- PPT-S, The Complete Private Pilot Syllabus, for both ground and flight school
- SFR-P2, Student Flight Record for Private Pilots, to track progress
- VFM-HI, Visualized Flight Maneuvers for High-Wing Aircraft, a comprehensive maneuvers guide (VFM for Low-Wing is available by special request)
- SP-30, Standard Pilot Logbook in black
- CP-RLX, the Ultimate Rotating Plotter
- E6B-P, fiberboard flight computer
- OEG-P, Private Oral Exam Guide, by Michael Hayes, for checkride preparedness
- 8081-14AS, Practical Test Standards for Private Pilot Single-Engine Land, so pilots know what to expect on the checkride
- BAG-AT, black attaché bag

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- SFR-I2, Student Flight Record for Instrument students
- OEG-I4, Instrument Oral Exam Guide, by Michael Hayes
- 8081-4B, Practical Test Standards for Instrument Rating
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THE KATANA PRIVATE PILOT KIT

ASA has teamed up with Diamond Aircraft to produce an efficient training kit to prepare candidates for their Private Pilot Certificate. Based on Bob Gardner's The Complete Private Pilot and The Complete Private Pilot Syllabus, the kit also includes a Student Flight Record Folder, Visualized Flight Maneuvers Handbook, the Diamond Katana DA-20 Pilot's Operating Handbook, Pilot Log, Fixed Azimuth Plotter, and E6-B Paper Flight Computer...all to fit neatly into the Katana Flight Attaché.

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P/N 13-03127

ASA PART 141 STUDENT PILOT KIT

Includes everything they'll need, packaged in the ASA Pilot Briefcase. The Pilot's Manual: Flight School and The Pilot's Manual: Ground School, \ ASA FAR/AIM and Private Pilot Test Prep books are also included. The Practical Test Standards, and the Private Oral Exam Guide. An aluminum E6-B flight computer and Ultimate Rotating Plotter are included for flight planning, a Standard Pilot Logbook, also ASA Short Fuel Tester to help with preflights.

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FAA STUDENT PILOT GUIDE

The Student Pilot Guide lays out (for prospective student pilots and those already engaged in flight training) in "how to" fashion, the general procedures for obtaining FAA student pilot, sport pilot, recreational pilot, and private pilot certificates.

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VFR Edition..... P/N 13-04089

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| Flight Instructor Airplane (Single engine land & sea)..... | 13-32314 |
| Flight Instructor Airplane (Multi-engine land & sea)..... | 13-02288 |
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ASA has built a reputation for providing the aviation community with the most accurate and reliable FAR/AIM products available. The 2009 FAR/AIM book continues this tradition, containing complete and up-to-date information from Titles 14 and 49 of the Code of Federal Regulations (14 and 49 CFR) pertinent to General Aviation, Sport Pilots and Flight Instructors, combined with the Aeronautical Information Manual (AIM) (includes Change 1, effective 7/31/2008), and a free email subscription service for you to receive updated information as it is released by the FAA.

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GUIDE TO THE FLIGHT REVIEW

BY JACKIE SPANITZ - Complete preparation for taking or issuing a Flight Review. Most commonly asked questions with answers regarding the Flight Review, appropriate references for further study, relevant advisory Circulars, and a checklist. All information is useful to both Flight Review candidates & issuing CFIs. The new fifth edition reflects important updates.

P/N 13-00973.....

ASA AIRLINE

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Author Ron McElroy provides an abundance of exercises in the areas of mental math, approach plates, regulations and procedures, weather, systems and aerodynamics, and cockpit situations to analyze and resolve. Soft cover, illustrated, glossary and index included, 6" x 9", 144 pgs

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AMT Graphics Textbook Images CD-ROM contains all the illustrations and figures from the Aviation Maintenance Technician Series of textbooks by Dale Crane, for instructors' use in the classroom. The new PowerPoint® slides make it easy for instructors to create their own custom multi-media presentations to teach the principles the students are reading in the texts. P/N 13-06660

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PILOT TRAINING COURSES



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COMMERCIAL PILOT COURSE - Becoming a Commercial Pilot is the first step in taking flying from a hobby to a career. Getting paid to fly gives a great sense of accomplishment. Completing your training with the Commercial Pilot Course will prepare you for all ground aspects of Commercial Pilot Training. 46 lessons will guide you through a structured learning environment that includes individual lessons, automatic reading assignments and integrated written exam preparation. In the last module of the course you'll be prepared for the oral portion of your checkride. In addition to the learning environment, you'll also have a complete Digital Library where you have a large assortment of training handbooks and advisory circulars complete with a FAR/AIM. Complete Pilot Training is what this course is all about. * 46 fully narrated lessons * Custom animations for you to use as part of the lessons * Quizzes and Stage Exams * FAA Knowledge Test Preparation * Checkride Preparation * Every book you'll need in our Digital Library * Advisory Circulars, Practical Test Standards and the Test Supplement Booklet * A complete course for the Commercial Pilot Student on a Single DVD-ROM P/N 13-05766.....



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USING THE GARMIN 530/430 - Learning using MS Aviation's 530/430 course makes it a snap. They've created a full course for VFR and IFR. They've also included reference material like the Pilot's manual, Syllabus, Quick reference and even the Garmin 530 simulator. All on a single CD-Rom. You'll watch over the shoulder of an experienced flight instructor as he shows you not only what buttons to press but the ideas and strategies behind them. They break down the GPS into simple to understand blocks of material so you can learn better, faster and get to really flying the GNS 530/430 as quickly as possible. You can even follow along button by button using the included 530 simulator. Just like all of our products this course is complete, using state of the art technology and preparing you for the real world of flight. P/N 13-05769.....



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FLASH ANIMATIONS FOR PILOTS AND CFIS - Tired of trying to be an artist but still want to create easy to understand illustrations of things like Engines, Weather, Airspace? What if you could make them interactive too. Maybe you want to show how a constant speed propeller works, or how to visualize holding entries. The package allows you to see thumbnail images of all of the 60 plus animations in a clean user interface. You just pick a main topic like Systems and mouse over all of the choices. A thumbnail appears to show you what the animation looks like. Click on the title and the animation loads complete with instructions on how to use it. You can resize the animations to anything you want. So it's ideal for teaching a ground school with the animation playing full screen or in a window with your presentation running with it. Pilots will find the animations engaging and will help them understand how things really work by seeing them work! The Virtual E6B and Virtual Plotter allow Flight Instructors to project these on a wall with the aid of a presentation projector (not included) to show students how to use them in real time. Ground schools will never be the same when you add our animations to your content! Those include: * ADF - How to use it * DME - Principle of Operation * VOR - Principle of Operation * Holding Patterns * GPS - Principle of Operation * Pitot Static System - Complete with System Failures * Heading Indicator * Attitude Indicator - 3D fully interactive * Turn Indicator - 3D P/N 13-05772.....

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VFR PILOT REVIEW SYSTEM - For any pilot who already has a Private Pilot Certificate. This software is designed specifically for pilots who already have their certificates and need to review important concepts. Whether you are preparing for a biennial flight review, don't fly too often, or haven't flown in a while; this software is just what you need. **Includes:** • 12 question and answer databanks that cover all of the areas you need to continue learning and prepare for a Flight Review. • A comprehensive, easy-to-navigate Aviation ReferenceLibrary. • Online Updates for all question and answer databanks and for the entire library. • Online courses delivered inside the learning environment! • All required chart files are included. P/N 13-06075.....



IFR PILOT REVIEW SYSTEM - This software is designed specifically for pilots who already have their instrument rating and need to continue learning and review important concepts. **Includes:** • 2 very comprehensive question and answer databanks. • A comprehensive, easy-to-navigate Aviation Library • Online Updates for all question and answer databanks and for the entire library. • Online courses delivered inside the learning environment! • Online courses delivered inside the learning environment! P/N 13-06243.....



INSTRUMENT PILOT STUDY SYSTEM - For any pilot studying for his or her Instrument Rating. This software has all of the tools you will need to learn what you need to know for your Instrument Rating flight test and FAA Knowledge Test (airplane only). **Includes:** • The FAA Knowledge Test database. • 9 additional question and answer databanks designed by Powerful Learning. • A comprehensive, easy-to-navigate Aviation ReferenceLibrary. • Online Updates for all question and answer databanks and for the entire library. • Additional learning tools such as an Electronic Flashcard Mode will make learning easy and help you pass your written test and oral with flying colors! P/N 13-06076.....

ASA FLIGHT TRAINING

ASA'S PRIVATE PILOT VIRTUAL TEST PREP



Brings the classroom to any home TV or computer Blu-ray player. Watch the Blu-ray disk material to learn the subjects, then use the included ASA Prepware Software to work through the questions, for a comprehensive aviation ground school. Graduation certificate and instructor endorsement (sign-off) available from ASA for no additional cost upon completion of the course.

Package also includes a bonus disk with over 2 hours of interviews, insights, and inspiration from some of the industry's leaders in aviation education, including Tom Horne, Barry Schiff, Bob Gardner, Paul Hamilton, Laurel Lippert, Steve Casner, Dorothy Schick, and Bruce Williams. These experienced aviators and notable subject experts also discuss their hard-learned lessons throughout the course, providing a very entertaining perspective and rare opportunity to watch and listen to these consummate aviators share their knowledge, wealth of experience and invaluable wisdom.

ASA VTP Ground School Widescreen P/N 13-06051
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Instructors, flight, and ground schools can add professionalism, organization, and clarity to the classroom with these PowerPoint® slideshows and animated graphics. The slides are categorized and labeled to make them easy to identify for the course and lesson instructors want to use. The graphics can be viewed as a slideshow presentation, or instructors can use individual slides in their own presentation. Over 3,500 slides are included from the Private (with brand-new slides included from the new Widescreen/Blu-ray editions of the Private DVDs), Instrument, Commercial, CFI, and Flight Instructor Refresher Clinic Virtual Test Prep courses, covering all these subjects: * Aerodynamics * Systems * Flight instruments * Regulations * Procedures and airport operations * Weather and weather services * Aircraft performance * Enroute and airspace * Navigation * Communication * Arrival and approach * Instruction fundamentals * Maneuvers * Physiology P/N 13-06413

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Visualization simulator and instrument procedures tutorial (software plus manual). Gain a mind's-eye perspective by viewing cockpit instrumentation, approach plate, and overhead map simultaneously! 1. to form a mental image of 2. to make perceptible to the mind or imagination 3. the act of creating a mental image that is similar to a visual perception. A complete how-to system on instrument flight, navigation, procedures, emergencies, and more, featuring a comprehensive 4-hour software tutorial and a full-color manual. It's the perfect complement to any instrument training curriculum or refresher for instrument-rated pilots. Students, instructors, virtual aviators, and even experienced pilots. P/N 11-06625

ASA CHECKLIST FOR SUCCESS CD -
 VIRTUAL INTERVIEW PREPARATION



Interactive training program provides examples of common interviewing mistakes along with the correct presentation scenarios; guides you through self-evaluation, offers extensive explanation on handling problem areas; provides examples of interview attire and paperwork presentation. Macintosh and Windows compatible. (Please note: This is a training companion to Checklist for Success. This is not Checklist for Success in CD-ROM form.) P/N 13-05842

ASA FLIGHT INSTRUCTOR REFRESHER CLINIC DVD



ASA FLIGHT INSTRUCTOR REFRESHER CLINIC DVD

An FAA-approved flight instructor renewal program, featuring DVD lectures and internet evaluation for an engaging, comprehensive and innovative learning experience. This course includes these important features: * Experienced instructors provide engaging lectures that coach participants in scenario-based instruction with real-world examples. * 3D graphics, animations and inflight footage ensure participants understand the information and can teach it effectively. * Convenient at-distance course brings the classroom to the home or office and lets instructors renew their certificate at their own pace, and in the comfort and privacy of their own place. * DVD instantaneous control lets participants pause, back up, or navigate directly to a specific discussion within a lesson. P/N 13-05831

ASA HELICOPTER FUNDAMENTALS-DVD



The Virtual Test Prep DVD Series provides a comprehensive aviation ground school to prepare pilots for the FAA Knowledge Exam and help them become better, safer pilots. Makes explanations come to life with in-flight demonstrations and the latest 3D animated graphics. Supplements the airplane Virtual Test Prep ground school courses. Complete both the airplane and helicopter courses to prepare for private pilot, instrument rating, commercial pilot, or flight instructor (CFI) FAA Knowledge Exams. Used together, the courses provide everything needed to ace the Helicopter FAA Knowledge Exam. P/N 13-05828



TRAIN LIKE YOU FLY: A FLIGHT INSTRUCTORS GUIDE TO SCENARIO-BASED TRAINING

Trains pilots based on scenarios instead of tasks. The book covers a broad range of topics in its 200-plus pages. These include an introduction and definition of scenario-based training, how to redesign a syllabus to include this method of instructing, how debriefing and evaluation differ with SBT, using weather in SBT, and a step-by-step guide to how SBT can be incorporated into training. There are chapters on instrument training, advanced training, and CFI training using scenarios. Throughout the book are useful tools, such as risk assessment checklists, debriefing forms, and syllabus suggestion is. McMahon also recognizes the abundance of advanced technology in today's training fleet Aden suggests ideas on how to incorporate those tools into training. Autopilots, for example, are presented as an aid, and not just a piece of dead weight through private training. P/N 13-06237



ASA FLASHCARDS

Flashcard Study Guides help to develop and maintain a solid core-knowledge of the rules and regulations that are a part of a pilot's daily life. Designed to be easy to pack and carry, flashcards provide pertinent regulatory questions with detailed answers and references for further study.

FLASHCARDS FOR FAR - A Useful Study Aid. Keep your cockpit skills sharp and prepare for that important test, checkride or interview! Updated to include the latest rules and operating procedures as well as Sport Pilot and Light-Sport Aircraft questions. The FAR Flashcards set provides 112 practice questions from FAR Parts 1, 61, and 91. P/N 13-05850

FLASHCARDS FOR AIM - A Useful Study Aid. Keep your cockpit skills sharp and prepare for that important test, checkride or interview! The AIM Flashcards set contains 92 practice questions from the Aeronautical Information Manual (AIM). P/N 13-05851

FLASHCARDS FOR ATP - Prepare for exams, checkrides, and interviews! Questions for Parts 119, 121, and 135 operations. Updated to include the latest rules and operating procedures for airline operations. The Flashcards for ATP set provides 80 practice questions from 14 CFR Parts 119, 121, and 135. P/N 13-05852

ASA HELICOPTER ORAL EXAM GUIDE



A supplement for helicopter pilots; requires corresponding Oral Exam Guide for proper study. This book prepares pilots for the oral portion of their Helicopter Checkride for Private, Instrument, Commercial, Flight Instructor, and ATP. Helicopter pilots can now use this guide and the corresponding OEG book to get the rotary-wing knowledge specific to their training needs. Softcover, 184 pages. Prepares applicants for their oral exams with FAA examiners. Using a question-and-answer format, each guide lists the questions most likely to be asked by examiners and provides succinct, ready responses. P/N 13-05853



ASA VISUALIZED FLIGHT MANEUVERS HANDBOOKS LOW WING

Traditionally known as the "red maneuvers book," this handbook is one of a series that has been the standard of the industry for more than 40 years, and complies with current practical test standards and regulations. This Second Edition of ASA's Low-Wing version of the Visualized Flight Maneuvers series is an excellent learning and teaching aid for instructors and students. It covers all maneuvers for Private, Commercial, and Flight Instructor Certificates — including the new maneuvers from the 2002 Practical Test Standards: steep spirals, and the 180-degree power-off approach. P/N 13-05854

ASA HELICOPTER STUDENT PILOT KIT

Helicopter Student Pilot Kit Includes: * Rotorcraft Flying Handbook * Principles of Helicopter Flight, by Wal Wagendonk * Principles of Helicopter Flight Syllabus * Private Pilot Test Prep * FAR/AIM book * Private Rotorcraft Practical Test Standards * Private Oral Exam Guide, by Michael Hayes * Helicopter Oral Exam Guide, by Ryan Dale * Standard Pilot Logbook in black * Ultimate Rotating Plotter * Fiberboard E6-B Flight Computer * ASA Briefcase P/N 13-06414

SPORT PILOT TEST PREP



In the book you get the information you need so you come into the checkride prepared: the required training, experience, and instructor endorsements. The questions most likely to be asked during the oral portion of the exam, supporting them with succinct, easy-to-grasp answers. He provides practical checklists and techniques to use when demonstrating your skills to the examiner. The DVD compresses a typical four-hour practical test into an engaging 78-minute presentation. Recommendations you can use during your own checkride. When the book and DVD are used together, pilots will find these products indispensable for mastering the Sport Pilot Checkride.

Check Ride book P/N 13-05024
 Checkride Combo P/N 13-05857

FLIGHT TRAINING – PILOT GUIDES

CULHANE AVIATION 2009 TRAINING MANUALS



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P/N 13-05106



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P/N 13-05110



P/N 13-05095



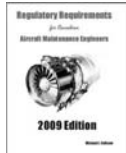
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P/N 13-05114

Accelerated Aviation Training, was founded in 1986 to help Canada's pilots at all levels of licences and ratings prepare for their written exams with our accelerated exam prep seminars held at our YVR airport pilot training centre. We have been continuously publishing Culhane training manuals and supplying Canada's aviation training industry with our aviation texts and exam guides since 1988.

Culhane aviation training books are currently used nationwide by aviation students at most flying schools and clubs in Canada, and at Canadian aviation colleges and universities, for ground school and flight training courses and seminars for the Private Pilot Licence, Recreational Pilot Permit, Night Rating, Commercial Pilot Licence, Integrated Commercial Pilot Licence, Instrument Rating, Flight Instructor Rating, IATRA Type Rating, Airline Transport Licence - Aeroplane, Private Pilot Licence - Helicopter, Commercial Pilot Licence - Helicopter, Instrument Rating - Helicopter, and Airline Transport Licence - Helicopter. Our ownership of Culhane manuals has permitted us to become the leading Canadian publishers of aviation self study training courses and referenced simulated exams, for both fixed wing and rotary wing pilots. We also offer training products and courses for Canadian Aircraft Maintenance Engineers and Flight Dispatchers.

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| Helicopter Pilot Ground School Course | 13-05108 | \$149.95 |
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The JeppGuide manuals offer several features not found in other airport manuals. Each features only one airport so the airport diagram is larger and easier to read. Included for each airport are taxiway names, FBO and restaurant locations, exact placement of windsocks and pay phones, FSS frequencies, FBO services, car rental and lodging information, and distances and radials from surrounding VORs. Each manual is over 640 pages and comes in a handsome binder. Includes 2 free updates. JeppGuide pages fit Jeppesen binders perfectly. The following JeppGuides are available:

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Flight Guide is the nation's leading VFR airport and frequency manual providing detailed airport diagrams showing, runway direction & length, taxiways & their identifiers, FBO locations, fuel, & parking areas. Its useful-at-a-glance format lists, navigational & communication frequencies, flight operational information, FBO hours & services, restaurants, lodging, transportation, recreational information, pertinent phone numbers and even free pickups and discounts. Flight Guide also provides a handy detailed graphic for every Class B, C and selected D areas, showing boundaries, altitudes, visual checkpoints, cities, roads, terrain, bodies of water, tower instructions, Nav aids, VFR corridors, flyways and transition routes. Three loose-leaf compact manuals (5 fl x 5 1/2) cover 48 states and contain nearly 5000 airports. Includes two free semi-annual standard revisions.

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PILOT GUIDES & BOOKS

PILOT GUIDES



PILOTS GUIDE TO CALIFORNIA AIRPORTS - Pilot's Guide to California Airports may be the most helpful airport directory available. It contains very complete information on airports and their areas, and includes aerial photos of "tower" airports, with outstanding illustrations of each area. Comes in a 3-ring binder. Measures 6"x9". Revised three times a year. P/N 8853.....



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PILOT'S GUIDE TO N. WESTERN AIRPORTS - Pilots Guide features all public-use airports in Idaho, Montana, Oregon, Washington and Wyoming. 5 pages for each tower airport include an airport photo, a fold-out approach map showing VFR reporting points, airspace, and terrain features, and a detailed airport surface map. Non-tower airports have a half page with similar comprehensive detail. The Northwest Guide has more than 400 pages with over 800 photographs, maps and diagrams. 5.5" x 8.5" pages, 7.5" x 9"x1.75" green vinyl binder. Price includes first year of revision service. Revised 3 times a year. P/N 13-08648.....

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SEAPLANE, SKIPLANE, & FLOAT/SKI EQUIPPED HELICOPTER OPERATIONS HANDBOOK - This operational handbook introduces the basic skills necessary for piloting seaplanes, skiplanes, and helicopters equipped with float or skis. It is primarily intended to assist pilots who already hold private or commercial certificates and who are learning to fly these aircraft types. Also beneficial to rated seaplane pilots who wish to improve their proficiency, pilots preparing for flights using ski-equipped aircraft, and flight instructors engaged in the instruction of both students and transitioning pilots. The book introduces the future seaplane or skiplane to the realm of water operations and cold weather operations, and provides information on the performance of procedures required for the addition of a sea class rating in airplanes. P/N 13-03470

A PILOT'S GUIDE TO AIRCRAFT & THEIR SYSTEMS
- Pilots must understand what each handle or knob controls and what he or she can expect from each system. This book furnishes pilots and armchair aviators with explanation and insight into what the aircraft powerplant and each of the system do. Soft Cover, illustrated, 320 pages, indexed. P/N 13-02422



WESTERN U.S. PILOTS GUIDE - This beautiful directory is the aviation travel guide to must see destinations in the 11 western states. Over 223 airports in the 11 Western states are included each with color aerial airport photographs. There are more than 400 pages of airport travel photos, hotels, recreations, maps, & more. Covers Arizona, California, Colorado, Idaho, Oregon, Montana, Nevada, New Mexico, Washington & Wyoming. P/N 13-00765



BAHAMAS & CARIBBEAN PILOT'S GUIDE 2007 - The 2007 Bahamas & Caribbean Pilot's Guide has color photographs of every airport, maps, pilot information, customs and immigration, hotel and recreation phone numbers, a survival section, approach plates, U.S. section...don't fly the islands without a current copy! P/N 13-00397

BAHAMAS/CARIBBEAN VFR CHARTS - The Bahamas Chart includes U.S. data as well as points of interest, high and low water, and a Caribbean Planner. The Caribbean Chart covers Puerto Rico south to Aruba, Bonaire and Curacao (the U.S. charts end at Guadeloupe). The FIR boundaries are shown - a must for travelling to the Caribbean!
Bahamas VFR chart.....P/N 13-02216

PAD OF DECLARATION FORMS - If your itinerary includes more than a few Caribbean islands, you'll want a pad of General Declaration forms. All white no-carbon-required forms make it convenient to complete as many Gen Dec's as you want, quickly.
Pad of 100.....P/N 13-02219

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ACUKWIK NORTH AMERICAN AIRPORT/FBO DIRECTORY



The industry's original directory for connecting flight planners to aviation service providers for over 25 years. This annual publication provides airport, FBO, ground transportation, charter, caterer, handlers, and maintenance listings for the United States, Canada, Mexico and the Caribbean.

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| Acukwik North American Edition | 13-06384 | .. |
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| Acukwik International Edition | 13-06385 | .. |



FLIGHT OF VOYAGER CD (DICK RUTAN) - This is a recount of the horrific, horrendous, heroic and humorous moments of the Voyager project through the eyes of the pilot Dick Rutan. On December 14, 1986 Voyager took off from Edwards AFB in California and 9 days later landed at the Edwards, completing the first ever non-stop, unrefueled world flight. This 3-CD set (3.5 hrs) includes a mini journal map of the flight, historic photos, fun facts, and more. P/N 13-01163



AIRPORTS OF MEXICO - First compiled by Baja Bush Pilot founder Arnold Senterfitt, Airports of Mexico is based on hundreds of hours of flying throughout Mexico. Rewritten by Jack McCormick, this new 20th edition includes both Baja and mainland Mexico, features over 1100 airports/airstrips, all seaports and heliports, border crossing information, all international airports, information on flying in Mexico, discounts on hotels, Mexican insurance, group trips and fees. Over 150 airports are fully diagrammed and are listed alphabetically. All in a convenient light weight, smaller, snap-ring binder designed for easy to use in the cockpit. A must for every pilot flying trips to Mexico. P/N 13-01028.....

PILOT'S GUIDE TO MEXICO'S YUCATAN PENINSULA



Obtaining verified and accurate information on procedures for flying private, general aviation aircraft and on airports in Mexico can be a challenge. Therefore, with the support of Mexico's Civil Aviation Department, this Pilot's Guide will provide you with an additional source of information to supplement official navigation sources. The data in the guide was obtained from years of meetings with Mexico's Civil Aviation Department, Mexico's Aeronautical Information Publication (AIP), meetings with local aviation and government officials and from 15 years of experience in Mexico and visits to each airport in the guide. The 2008 Pilot's Guide compiles applicable and current information on U.S. and Mexican regulations and guidelines that apply to U.S. aircraft on private, and international flights from the USA to Mexico. P/N 13-06078

SPORT PILOT TRAINING

ASA SPORT PILOT KIT

Sport Pilot Kit Includes: * Pilot's Handbook of Aeronautical Knowledge * Airplane Flying Handbook * Sport Pilot Syllabus * Sport Pilot Test Prep * Sport Pilot Practical Test Standards * Sport Pilot Checkride book * Sport Pilot Logbook * Ultimate Rotating Plotter * Fiberboard E6-B Flight Computer * ASA Briefcase
P/N 13-06416.....

ASA



SPORT PILOT: CHOOSING THE LIGHT-SPORT AIRCRAFT THAT'S RIGHT FOR YOU - This DVD production and booklet compare the LSA types as well as their ultralight cousins to help pilots make a truly informed decision on which light-sport aircraft is right for them. It explains what ultralights and LSA are, provides parameters to evaluate the viewer's situation and factors to consider (including cost, athletic ability, previous aviation experience, time to learn, transportation, storage, and airfield options), and provides an overview and introduction to each of the light-sport aircraft types. Includes beautiful full-color booklet with aircraft photo and comparison tables. Total running time 00:41:00.....P/N 13-03467.....



PRACTICAL TEST STANDARDS: SPORT PILOT - This is ASA's Sport Pilot Practical Test Standards for Airplane, Weight-Shift Control, Powered Parachute and Flight Instructor. The FAA Practical Test Standards are used by instructors, students, and examiners to prepare for, review, take, or issue the checkride. Includes both the FAA-S-8081-29 for Airplane and FAA-S-8081-31 for Weight-Shift Control and Powered Parachute (effective December 2004), applicable to both Sport Pilots and Sport Instructors. 296 pages.
P/N 13-05855.....



SPORT PILOT DVDS FROM ASA - Two new DVDs by sport pilot expert Paul Hamilton are available that explore the flying of light sport aircraft. Preflight a Fixed-Wing Light-Sport Aircraft for Sport Pilots takes pilots through the preflight inspection of a light sport aircraft (LSA). Be a Sport Pilot: Learning to Fly a Fixed-Wing Light-Sport Aircraft takes the lessons a step further by introducing the pilot to what it takes to obtain a sport pilot certificate. Hamilton and instructor Jeff Reynolds discuss pilot training, from first flight to solo to sign-off. The two DVDs are available separately or in a kit that also includes Weather to Fly for Sport Pilots and the Sport Pilot Logbook
Learn to Fly DVD..... P/N 13-04191.....
Preflight Fixed Wing DVD..... P/N 13-04192.....
Fixed Wing Sport Pilot..... P/N 13-04193.....

WEATHER TO FLY FOR SPORT PILOTS WITH PAUL HAMILTON - Sport pilots fly lower and slower than General Aviation pilots. As a result, weather plays a critical factor in flying. The straightforward and beautiful presentation features time-lapsed cinematography of cloud formations, in-air footage, and animations. This DVD simplifies complex weather concepts as well as illustrates consequences of pilot judgment, in a 5-step system specific to Sport Pilots and light-sport aircraft operations. Pilots will learn to forecast local conditions, interpret weather information accurately, make better decisions about "whether to fly", and learn to recognize trends. Includes booklet with worksheets for an interactive learning experience. Companion product to ASA's Sport Pilot Logbook (ASA-F2F-LOG). Total running time 01:20:12.P/N 13-03468.....



SPORT PILOT TEST PREP 2009 - includes all the FAA questions and answer stems, supported with explanations, references, and FAA subject codes. Chapters are organized by subject with introductory text and clarifying illustrations for efficient study. Also features Sport Pilot Certificate requirements, test-taking tips, and cross-references to aid further study in the source material. The FAA Computer Testing Supplement is bundled with every test book.
Sport Pilot TestPrep..... P/N 13-03450.....
CFI Test Prep..... P/N 13-03435.....



SPORT PILOT CERT. MATERIAL 2009 - Questions are supported by study guides and comprehensive explanations for correct and incorrect answers. Instructors can create pop quizzes of any length, on any subject matter, to supplement the study sessions. Each Prepware title includes all aircraft categories (airplane, rotorcraft, glider, lighter-than-air, powered parachute, weight-shift control). You tell the software which test you're preparing for, and it generates your study sessions and practice tests accordingly. Version 10 includes the new FAA Knowledge Exams released June 25, 2007.
Sport Pilot Prepware..... P/N 13-03451.....
CFI Prepware..... P/N 13-03436.....



SPORT PILOT LOGBOOK - Specifically designed for all Sport Pilots who fly ultralights and light-sport aircraft including hang gliders, paragliders, powered parachutes, trikes (weight-shift control), and fixed wing (three-axis control) aircraft. 7.25" x 5.25", 98 pages.
P/N13-03385.....

GLEIM



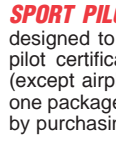
SPORT PILOT FAA KNOWLEDGE TEST - Questions, Answers and explanations.....P/N 13-03445.....



SPORT FLIGHT MANEUVERS - Standards and Oral Exam Guide..... P/N 13-03446.....



SPORT SYLLABUS - Complies with both Part 61 and Part 141 training requirements. Complete ground and flight training with step-by-step lesson plans
P/N 13-03447.....



SPORT PILOT FAA KNOWLEDGE TEST PREP SOFTWARE -P/N 13-03448.....

SPORT PILOT KIT - Gleim's Sport Pilot Kit is designed to help expedite training for the sport pilot certificate. Contains everything you need (except airplane and instructor) Offers an all-in-one package at an affordable price. Save money by purchasing all required materials together..
P/N 13-03449.....



SPORT PILOT AIRPLANE GUIDE

SPORT PILOT Airplane: A Complete Guide provides an in-depth understanding of light-sport aviation complexities. Clarifies points commonly misunderstood, provides a wealth of information on subject such as Selecting an Aircraft, Pilot and Aircraft Certification, Weather, Flight Principles, and more. Includes 256 pages with illustrations, photos, or graphs on nearly every page. The material presents the experience of thousands of flight hours and contains valuable lessons for all pilots and would-be pilots..... P/N 13-03798.....



ASA ROTAX 912 ENGINE INTRODUCTION

This DVD by Paul Hamilton introduces the use and maintenance on Light-Sport Aircraft (LSA) of the ROTAX 912 engine. Many engine problems seen in the field are preventable with proper operation and maintenance and the 912 is no exception. This DVD is particularly useful to maintenance professionals, pilots and flight instructors operating ROTAX-powered Light Sport Aircraft. Answers frequently asked questions based on years of operational and maintenance experience and outlines typical procedures every owner, operator and mechanic should know. This DVD is the only one of its kind in the rapidly growing LSA market, and it caters to the do-it-yourself experience of flying this category of aircraft..P/N 13-04747.....



COMPLETE IDIOT'S GUIDE TO SPORT FLYING

The Complete Idiot's Guide to Sport Flying is categorized into four parts; on-the-ground basics (ground school, federal aviation regulations, aerodynamics); into the wild blue yonder (what you will learn during flight instruction, tips for passing the knowledge test); expanding your horizons (what you can and cannot do with a sport pilot certificate, and how to add privileges); and choosing your sport plane. This last section is particularly helpful for those of us still puzzling over the differences among new light-sport aircraft, classic production aircraft that qualify under the LSA category, experimental, and homebuilt.
P/N 13-03740.....



SPORT PILOT ENCYCLOPEDIA

Can be used three ways: 1) SP Prep = full immersion rapid prep for the written, 2) SP Encyclopedia = thorough review of relevant FAA publications essential to both the written and the oral exams, and/or 3) both as entertaining and informative leisure reading. The narrative is laced with humor, personal anecdotes, and frank sometimes blunt language that keeps the reader alert and involved while feeling secure and comfortable as if in the company of an experienced friend and mentor. Actual NTSB accident reports are woven into the discussion. P/N13-03706.....



ASA START FLYING! DVD

Understand what's involved in learning to fly with this informational DVD. Encourages would-be fliers by providing answers to frequently asked questions about flight training. Perfect for anyone interested in earning a pilot's license, student pilots, and pilots who are upgrading to advanced ratings.
P/N 13-05758.....



BV

FLIGHT TRAINING MATERIAL



FLIGHTPREP VIDEO COURSES FOR FAA KNOWLEDGE TESTS

Each FlightPrep video course has everything you need to ace your FAA Knowledge Test. Each course contains from 5-10 hrs of video, a course book, practice exams, all current FAA questions along with explanations and correct answers, an instructor sign-off, and a graduation certificate suitable for framing. FlightPrep courses are organized in concise easy-to-follow lessons. Each concept is explained in detail using actual FAA knowledge test questions. All lessons contain 'watermarks' allowing for a quick review and a recap with recommended FAA practice questions ensuring that you have mastered the important subject matter. The instructor team, with more than 95 years of combined experience, is headed by Dr. Roger M. Stenbock CFII. Concepts are explained on-screen, employing the renowned 'chroma key' technique using large 3D graphics and special effects. This personal approach results in an exciting and interesting course which ensures you'll not only learn the required material, but have fun in the process. The real world air-to-air video, shot in & out of the cockpit, gives you a pilot's eye point of view. You'll not only gain complete and thorough knowledge of what the FAA wants you to know, but also the insight you need to be a better prepared pilot. Each course includes 90-day access to the interactive flightprep.com internet ground school for the particular rating which you are studying. This interactive ground school assures you will always study with all the latest FAA questions, answers, explanations, & graphics.

Instrument Pilot Course - Includes five 120 minute VHS tapes, plus 90-day flightprep.com access P/N 13-01325

Commercial Pilot Course - Includes four 120 minute VHS tapes, plus 90-day flightprep.com access P/N 13-01326

Flight Instructor Course - Includes six 120 minute VHS tapes, plus 90-day flightprep.com access P/N 13-01327

AIRBORNE WEATHER RADAR TRAINING VIDEO SET



This video program was originally developed by Archie Trammell for American Airlines, and since 1979 has been used by most US based major airlines, US Military, corporate flight departments, and FAA & NASA. The 4 part single video cassette discussion is backed up with photos of actual weather as seen on radar, plus charts, graphs & illustrations. Also included is a 137pg course guide, weather books, and an Airborne weather radar pilot's operating guide. If you want to know how to effectively interpret your airborne weather radar data, this course is for you. P/N 13-00156

ASA VIRTUAL TEST PREP



Aviations most exciting new aviation ground school for DVD-Virtual Test Prep. Now students can learn the material they need right from their TV or RC DVD player by taking advantage of these latest developments in video production education • Up to 10 hours of quality video instruction on 5 disks • Works on TV and computer DVD players, take interactive quizzes by using your TV remote! • Excellent air to air video footage • Meets 14 CFR Part 61 home study requirements • Includes Test Prep book and Computer Testing Supplement with all FAA questions, answers, explanations, & figures • Instructor sign off available.

Instrument Pilot Course..... P/N 13-01961
Complete Advanced Pilot..... P/N 13-01714

ASA COMMUNICATION TRAINER SOFTWARE



Say Again, Please is an invaluable tool for students who want to practice before their flights, pilots with rusty communications skills, those who rarely fly into heavy airspace, and those who want to sound like a pro! Learn how ATC and your radio equipment works, and learn what to say and what to expect to hear and how to interpret clearances and instructions. P/N 13-02054

GLEIM FLIGHT ENGINEER TEST CD



Gleim's FAA Test Prep contains everything you need to study for the Flight Engineer (FEX) FAA knowledge tests in one unique, easy-to-use program. Create customized study and test sessions using the actual FAA airmen knowledge test questions to enhance your learning process. The Performance Analysis feature allows you to track your progress and focus on specific areas needing further study.

| Description | Part No. | Price |
|---------------------------------|----------|-------|
| GLEIM INST.PILOT SOFTWARE | 13-32223 | . |
| GLEIM PRIVATE.PILOT SOFTWARE | 13-32222 | . |
| GLEIM SPORT PILOT TEST PREP SFT | 13-03448 | . |
| GLEIM COMMERCIAL.PILOT SOFTWARE | 13-32224 | . |
| GLEIM FLT ENGINEER TEST CD | 13-04893 | . |
| GLEIM AIRLINE TRANS.PILOT SEW | 13-32227 | . |



GLEIM TEST BOOKS

These text books by Irvin Gleim have helped thousands of pilots pass their private, instrument, commercial, multi-engine and seaplane ratings. Excellent guides to help you pass that written exam.

BOOKS & ACCESSORIES

| | |
|---|--------------|
| Pilot Handbook..... | P/N 13-32335 |
| Private Pilot Flight Maneuvers..... | P/N 13-32440 |
| Sport Pilot Flight Maneuvers..... | P/N 13-03446 |
| Instrument Pilot Flight Maneuvers..... | P/N 13-02733 |
| Commercial Pilot Flight Maneuvers..... | P/N 13-32325 |
| Flight Instructor Flight Maneuvers..... | P/N 13-04897 |
| Private Written Exam Book..... | P/N 13-32345 |
| Flight Ground Instructor Written..... | P/N 13-32310 |
| Instrument Written Exam..... | P/N 13-32320 |
| Instrument Knowledge Test..... | P/N 13-32320 |
| Commercial Practical Test..... | P/N 13-32325 |
| Commercial Written Exam..... | P/N 13-32330 |
| Fundamentals Of Instructing, Written..... | P/N 13-32315 |
| Flight Instructor Practical Test..... | P/N 13-04897 |
| ATP FAA Written Test..... | P/N 13-32400 |
| Aviation Weather Services..... | P/N 13-32402 |
| Sport Pilot Knowledge Test..... | P/N 13-03445 |
| FAR/AIM Book..... | P/N 13-00522 |
| Sport Pilot Syllabus..... | P/N 13-03447 |
| Private Pilot Syllabus..... | P/N 13-00523 |
| Instrument Pilot Syllabus..... | P/N 13-04894 |
| Commercial Pilot Syllabus..... | P/N 13-04895 |
| Flight Computer..... | P/N 13-00524 |
| Navigational Plotter..... | P/N 13-00526 |
| Flight Bag..... | P/N 13-00527 |

SOFTWARE

| | |
|--|--------------|
| Requires appropriate Gleim book for access to charts, figures etc. | |
| Private/Recreational Pilot..... | P/N 13-32222 |
| Instrument Pilot..... | P/N 13-32223 |
| Commercial Pilot..... | P/N 13-32224 |
| Fundamentals of Instructing..... | P/N 13-32228 |
| Flight/Ground Instructor..... | P/N 13-32226 |
| Flight Engineer Knowledge Test..... | P/N 13-04893 |
| Sport Pilot Knowledge Test Software..... | P/N 13-03448 |
| Airline Transport Pilot..... | P/N 13-32227 |

GLEIM PRIVATE PILOT KIT



Gleim's Private Pilot Kit is designed to help you expedite your training for your private pilot certificate. They offer a complete training program at a price you can afford. They prepare "user-friendly" self-study materials that are carefully designed to make it easy for you to learn and understand.

P/N 13-22229



GLEIM INSTRUMENT PILOT FAA AUDIO REVIEW - Gleim's customers have requested audio lectures to accompany the Test Prep CD-Rom and books. Gleim Publications has responded by providing FAA Audio Review, which is available on compact disc. P/N 13-05683



GLEIM INSTRUMENT PILOT KIT - The Instrument Pilot Kit is designed to SIMPLIFY and FACILITATE your training for your instrument pilot rating. They prepare "user-friendly" self-study materials that are carefully designed to make it easy for you to learn and understand. FAA Test Prep CD-Rom is included. P/N 13-05685



GLEIM COMMERCIAL PILOT KIT - SIMPLIFY and FACILITATE your training for your commercial pilot certificate. They prepare "user-friendly" self-study materials that are carefully designed to make it easy for you to learn and understand. P/N 13-05684



GLEIM INSTRUMENT/COMMERCIAL PILOT COMBO KIT - The Instrument/Commercial Pilot Kit is designed to SIMPLIFY and FACILITATE training for your instrument and/or commercial pilot certificate(s). They prepare "user-friendly" self-study materials that are carefully designed to make learning and understanding easy. FAA Test Prep Test Prep CD-Rom is included. P/N 13-00837

PILOT TRAINING PUBLICATIONS



| | |
|---|--------------|
| Aviation Instructor's Hndbk (#EA-AC 60-14) | P/N 13-19380 |
| Aviation Weather (#EA-AC 00-6A) | P/N 13-19385 |
| Pilot's Weight&Balance Hdbk (#EA-AC 91-23A) | P/N 13-19400 |

FLIGHT TRAINING – MAINTENANCE DVDS

KING VIDEO TUTORIALS - DVD



THE COMPLETE AIRSPACE REVIEW - DVD - Thoroughly covers the FAA's international alphabet soup of airspace requirements—classes A through G, plus TRSAs, etc.—and converts it to easy-to-understand information. You'll actually see on-screen how the alphabet airspace system is designed—and what each class means to you. You'll learn a foolproof, fun way to remember specifics about each class of airspace. You'll also review other kinds of airspace you should know about—Special Use Airspace, Controlled Firing Areas, Military Training Routes, Temporary Flight Restrictions, Special Conservation Areas and more. P/N 13-40275



VFR FLIGHT REVIEW COURSE - DVD - Covers the most critical & the newest FAA regs. Insider tips on how to avoid being in violation (maybe you already are), & the best way to avoid a penalty, even if you're caught in violation. Communications - Demystify tower talk and feel in control on the radio. The Complete Airspace Review - Know how to use the airspace to your advantage stay safe and legal in this complex system. Thoroughly covers the FAA's international alphabet soup of airspace requirements classes A through G, plus TRSAs, etc. and converts it to easy-to-understand information. P/N 13-40236



VFR REGULATIONS REFRESHER - DVD - KING's Regulation Refresher courses get you up to speed on the latest FAA regulations before your BFR! Sorts through the FAA regulations arsenal for you, reviews all of the critical IFR regs, covers key potential penalty areas and ways to avoid violating them. P/N 13-40216



MANEUVERS FOR THE COM/CFI - DVD - Maneuvers for COM / CFI Pilots point-of-view video and animated graphics combine to teach you lazy-eights, chandelles, eights-on-pylons, and other advanced maneuvers. Step-by-step, you'll learn how to set up optimally for each maneuver, properly coordinate pitch, power, bank angle and rudder ... and how to avoid or correct common errors—techniques that will help make you the obvious master of your aircraft. P/N 13-40185



TAKEOFFS & LANDINGS MADE EASY - DVD - Takeoffs and Landings Made Easy With this course you'll change takeoffs and landings from a trial to a joy. You'll impress your passengers (and yourself) with flawless takeoffs and landings even in stiff crosswinds. You learn how to see at a glance whether you're too high, too low or off to one side and you'll gain the tools you need to put yourself right back on the rail. You'll even learn how to recover gracefully from the rare botched flare or touchdown. When you're done you'll be one of the countless KING students who say, "I learned to land by watching your course." P/N 13-40175



TAMING STALLS & SPINS - DVD - You'll quickly learn what causes a stall ... how it can transition to a spin ... how to instantly recognize & avoid situations that might result in loss of control ... & steps to take in the event you find yourself in a stalled condition. Dramatic in-flight video compellingly demonstrates the aerodynamics of stalls & spins during everyday flight. A "must" for every pilot—regardless of your experience. P/N 13-40164



IFR WITH CONFIDENCE - DVD - This course is jam-packed with solid information for your Instrument rating. Learn how to deal with the most difficult IFR conditions—and how to avoid the pitfalls for the unsuspecting pilot. Invaluable tips about when to be especially suspicious about the weather. The smart way to pick your IFR alternate airport ... and why you may not be getting the terrain clearance you think you are on many IFR departures. Includes hints every pilot can use for that tricky transition back to visual flight references after a tight approach. P/N 13-40155



WEATHER WISE - DVD - Learn how to make practical, real-world use of weather information to interpret weather data accurately & form a mental picture of the conditions affecting your flight. Understand the dynamics of fog, ice, thunderstorms, pressure patterns, and frontal systems. Know how to accurately plan your fuel. Know when to trust the forecast ... and when not to and how to make smarter decisions in the toughest IFR conditions. P/N 13-40130



COMMUNICATIONS - DVD - Demystify "tower talk" & feel in control on the radio. Through real-world communications with actual controllers you'll learn first-hand proper communication procedures, techniques to use in every class of airspace, & how to get the cooperation you deserve from ATC. Radio call-up procedures, correct radio terminology, and how to use your radio for increased safety and utility are all there. A wealth of pointers on issuing clear and professional communications. P/N 13-40125



AIRFRAME TOPICS

| Airframe Topic | Part No. | Price |
|--|----------|-------|
| Aircraft Corrosion Control Parts 1 & 2 Identification, treatment, and prevention of 8 types of corrosion and a corrosion control program | 13-03871 | . |
| Non-Destructive Inspection - An introduction to NDT, six processes discussed and demonstrated | 13-03872 | . |
| Aircraft Wheels and Brakes - Introduction to large aircraft wheels and brake systems, plus FAA approval process | 13-03873 | . |
| Advanced Composites - Characteristics and use of advanced materials such as kevlar, carbon fiber, graphite, boron, etc. | 13-03874 | . |
| Fiberglass 101 - Basic layouts and molded fairings demonstrated on an experimental RV-4 aircraft | 13-03875 | . |
| Composite Structure Awareness - By Boeing - handling procedures of composite aircraft parts, damage scenarios, damage tolerance | 13-03876 | . |
| Eyes of Flight - Plexiglass - 1950's training film, but still good info on the repair and maintenance of canopies and windscreens | 13-03877 | . |
| Repairing Structural Tubing - 1950's training film, bending, splicing, and welding to repair fuselage damage | 13-03878 | . |
| Aircraft Painting 101 - Painting techniques on metal and fiberglass - emphasis on prep work and paint booth construction. VHS ONLY | 13-40369 | . |
| Aviation Grease - By Shell Oil - how grease works, different greases for different applications, handling of greases | 13-03879 | . |
| Damage Tolerance - How aircraft structures are built to withstand aging, and how sloppy maintenance degrades that ability | 13-03880 | . |
| Inspection of Ultralights - Demonstration on extensive pre-flight inspection of a Quicksilver ultralight | 13-03881 | . |

POWERPLANT TOPICS

| Powerplant Topic | P/N | Price |
|---|----------|-------|
| The Annual Inspection - Powerplant Detailed Demonstration of a annual/100 hour inspection of a Lycoming engine and accessories | 13-03883 | . |
| Care and Lubrication of Engines - By Shell Oil - installation, break-in, maintenance, and operation of newly overhauled engines | 13-03884 | . |
| Aviation Oil - By Shell Oil - what oil does, and steps to increase life and performance of aircraft engines | 13-03885 | . |
| Propeller Repair - A look at the inspection and overhaul process for Hartzell propellers | 13-03886 | . |

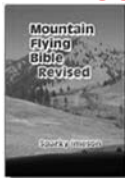
ASSORTED TOPICS

| Assorted Topic | P/N | Price |
|---|----------|-------|
| Critical Operations - By Boeing - impresses upon a student the importance of even the most routine tasks | 13-03887 | . |
| 747/777 Put Together - By Boeing - 2 fast motion films showing the assembly process of a Boeing 747 and 777 | 13-03888 | . |
| Saving on an Annual Inspection - Owner permitted inspection and maintenance procedures described on GA aircraft plus safety wire techniques | 13-03889 | . |
| Preventative Maintenance - Maintenance and preventative maintenance tasks an owner may do on their own aircraft | 13-03890 | . |
| FAA Certified Repair Stations Regulations, standards, and procedures for obtaining Certified repair station status | 13-03891 | . |
| Flight Line Service - A job training presentation for newly hired flight line personnel | 13-03892 | . |
| Icing for Pilots - By NASA Research Center, types of icing plus techniques for avoiding and or dealing with ice | 13-03893 | . |



AVIATION VIDEOS & DVDS

MOUNTAIN FLYING BIBLE REVISED



Learn the basic, intermediate and advanced techniques of mountain flying. Arranged in the sequence of an actual flight for ease of use in finding the information you need. It covers Preflight, Take off, En route, Arrival and Landing. Move into advanced operations with ease and safety. Learn to anticipate how your airplane will perform in the mountains. Discover simple rules-of-thumb to enhance safety and simplify operations. Learn the weather information required for peace of mind and increased pleasure. 16 pages of color photos of backcountry strips covering the approach, landing and takeoff procedures. P/N 13-04035

THE SHIRT POCKET MOUNTAIN FLYING GUIDE



Let's face it. Flying in the mountains takes specialized procedures and techniques. Safety demands that you have the facts and knowledge. This pocket Guide provides you the information you need to know. This is not a rehash of the Mountain Flying Bible. It includes new material and color photos throughout. There are 129-color pages of the 208 pages. What is Covered: Section 1 - Do's and Don'ts • Section 2 - Basic Premises • Section 3 - Flying Canyons • Section 4 - Crossing Ridges • Section 5 - Turbulence & Va • Section 6 - Maximum Lift Flap Setting • Section 7 - How to Land an Airplane • Section 8 - Visual Illusions • Section 9 - Spot Method for Landing • Section 10 - Mountain Airstrip Operations • Section 11 - Mountain Weather. P/N 13-04051

WEATHER RADAR TRAINING FROM ALLIEDSIGNAL



This training DVD from AlliedSignal covers topics such as operational theory, weather mapping, antenna stabilization, weather radar interference, ground mapping, preflight, and in-flight operation of the radar system. Excellent training aid for pilots using the RDR2000/2001 radar equipment or for basic weather radar training. 50 minutes. P/N 11-04386

SEVEN NORTHERN CALIFORNIA GETAWAYS - DVD



"Seven Northern California Getaways" is a travel and recreation video featuring seven pilot getaways situated in beautiful natural settings in Northern California where ground transportation is provided or simply not needed. Beautiful scenery, useful information and aerial views of the airports make this video enjoyable and informative to pilots and non pilots alike. P/N 13-04104

PRIMARY AEROBATIC FLIGHT DVD



This entertaining and informative video presents to new student pilots, veteran pilots, prospective pilots and to Parents and Grandparents of the above, a critical phase of training completely ignored by the FAA, most flight schools and CFIs. Yet, during WWII this phase was given top priority in primary flight schools to instill confidence, mastery over the airplane and proficient and safe flying!. This prevue shows what the aerobatic phase is all about. Ground and air shots and pilot eye-views show how easily the maneuvers can be performed which lead to more confident flying by Lt. Col. Art Medore, USAFR, Ret. P/N 13-04231

FORMATION FLYING, THE ART DVD



The Art in DVD format. "Formation Flying, The Art" DVD was originally introduced to the Warbird community in 1993 as a integral part of the FAA Mandated Civilian Formation Training and Credential Program. Currently the video is now the "F.A.S.T." standard and endorsed by all major Warbird flying organizations such as the EAA / Warbirds of America, North American Trainer Association, T-34 Association and others world wide. DVD P/N 13-04572

WINGS IN FOCUS DVDS

PIPER PA-28 SERIES - First in a collection that will profile popular light aircraft. It recounts the history of the aircraft - still in production after well over 40 years, including interviews with Karl Bergey of the original design team, and key individuals at New Piper Aircraft, Inc. today. P/N 13-04291

BEECHCRAFT BONANZA - This DVD tells the story of the Bonanza, from its introduction just after the second world war, to the present day. It shows the inside Hawker Beechcraft's factory in Wichita, and hear from the people who continue to build and develop the Bonanza. P/N 13-05246

TAILDRAGGER TACTICS



The book has been structured to allow one to read from the beginning to the end much like a novel. Each chapter builds and expands upon information that was presented in the previous chapter; however, each chapter is also self-contained to allow one to read only the chapters desired. Flying a taildragger requires knowledge and skill. The knowledge is imparted in this book. The skill is something that must be developed in the airplane. P/N 13-04050

TAILWHEEL BASICS



Skip Degan, a flight instructor with airplane single-engine land, instrument, and ground instructor ratings, has developed a 15 minute video to introduce pilots to basics of tailwheel airplanes. Tailwheel Basics explores the difference between conventional and tricycle-gear aircraft and explains the basic concepts needed to earn a tailwheel endorsement. Included is a three-page booklet explaining the tailwheel transition. The video is available in DVD format. P/N 13-04283

MOUNTAIN FLIGHT VIDEO



Mountain Flight, filmed in part in the Idaho Primitive Area, includes in-flight footage of some of the most beautiful, rugged and demanding mountain terrain in the U.S. It covers flight planning, accident causes, weather, density altitude, approaches, landings, departures, and survival. The weather section includes time lapse sequences of thunderstorms, mountain waves, lenticular and rotor clouds. Graphics are used to clarify, explain and demonstrate the ground and flight procedures for safe operation in the mountains. Color, approximately 80 minutes. DVD.....P/N 13-04052

PARAGLIDER GROUND HANDLING AND THE ART OF KITING - DVD



Let's face it. Flying in the mountains takes specialized procedures and techniques. Safety demands that you have the facts and knowledge. This pocket Guide provides you the information you need to know. This is not a rehash of the Mountain Flying Bible. It includes new material and color photos throughout. There are 129-color pages of the 208 pages. P/N 13-04012

IDAHO EXPOSED DVD



Herb Millhorn, 50+ year Idaho resident and veteran bush pilot takes us on a tour of some of the most beautiful country in the world. Witness amazing flying skills as Herb lands his Cessna 185 Skywagon on risky airstrips that would make other pilots cringe. Canyons and mountain tops are the settings for this spectacular demonstration of phenomenal pilot skills. Don't miss Idaho Exposed as we get to witness culture and recreational opportunities that only exist in this remote area of Central Idaho. P/N 13-04061

ONE SIX RIGHT - THE STORY OF HISTORIC VAN NUYS AIRPORT



An exhilarating documentary film that celebrates the unsung hero of aviation - the local airport by tracing the life, history, and struggles of an airport icon: Southern California's Van Nuys Airport. Featuring thrilling aerial photography and a sweeping original score, the film dispels common misconceptions and opposes criticism of General Aviation airports. Through the love story of one airport, past to present, the film shares the timeless romance of flying with all ages.

- One Six Right DVD P/N 13-04218
- One Six Right HD DVD P/N 13-04289
- One Six Left (the companion DVD)..... P/N 13-04288
- One Six Right International Version P/N 13-04571
- One Six Right CD (soundtrack)..... P/N 13-04219
- One Six Right Piper Cub Model P/N 13-04295
- One Six Right Flex Fit Hat P/N 13-04296
- One Six Right Movie Poster P/N 13-04290

AVIATION DVDS



HOW TO LICENSE YOUR HOMEBUILT AIRCRAFT

This DVD will walk you through each step to successfully license your experimental amateur homebuilt aircraft. The actual FAA forms required are displayed on screen, and the instructor explains where to obtain them and how to fill them out. P/N 13-03609.....



HOMEBUILT HELP ELECTRICAL WIRING TUTORIAL DVD

Explains and demonstrates the common procedures, tools and components required for the basic wiring of a homebuilt aircraft. The instructor leads the viewer through demonstrations of crimping, soldering, wire selection and wiring design with simple schematics that are applicable to a homebuilt electrical system. A discussion on proper wire type and sizing, fuses and connectors is supplemented with photos of these components for easy identification. Video length is 1 hour and 20 minutes. P/N13-03578.....



AIRCRAFT PAINTING 101 DVD

An excellent 2 hour video in which Sam James takes you, in detail, through the finishing, priming, and painting of his RV-4 with the Dupont Veriprime and Chromabase systems. This video is not as finely produced as some others, but the vast quantity of practical information it contains more than makes up for it. Takes you through the complete process of working an metal wing, a fiberglass wheel pant, and detailed custom design on a horizontal stabilizer. Run Time: 120 min by Sam James P/N 13-06567.....

METALWORKING 101 INSTRUCTIONAL DVD



Metalworking 101 with rudder workshop is targeted to the beginning student of pop-riveted metal kit plane construction. The ideal audience for this video is the person who is contemplating the undertaking of a metal kit plane project (for example: Zenith, Sonex, Hummel) and wants to witness the actual skills and procedures necessary for successfully achieving this end. This very affordable DVD will take you thru the actual construction of a Zenith rudder, from start to finish. While it can be used to supplement the construction guide supplied by the manufacturer with this rudder (a CH701 or CH601), it is actually intended to demonstrate to the beginning builder just what tasks and skills are required for any similar brand of metal kit plane construction. In addition to the rudder building demonstration, general metal building procedures are explained and demon strated. P/N 13-03369.....

WEIGHT & BALANCE 101 FOR HOMEBUILT



Completing a homebuilt requires you to calculate and document the weight & balance figures for your plane and present them to the inspector...and for many homebuilders this task is confusing and complicated -- however, this video makes this task simple and easy to understand. The video makes it easy for you to understand the concepts required to perform your own weight and balance analysis on your aircraft and then document the findings for the inspection process. P/N 13-04184.....

CANARD AIRCRAFT DVD



The DVD has 3 hours of video on canard aircraft only, truly a one of a kind DVD. It covers the Cozy MkIV, LongEZ, Berkut, ERacer, StaggerEZ, Bateleur, Defiant, LongEZ Jet and a custom LongEZ. Want to know what it's like to build a Cozy aircraft? Or see what it looks like to do a high speed fly-by from the cockpit? Then you'll want to see this DVD. You'll hear not only why they choose their particular aircraft, but what kept them going through the building process as well. You'll get lot's of encouragement from every builder for you to continue on your journey to complete your canard aircraft. If you enjoy watching canard aircraft fly, then you'll be thrilled with the 60 minutes of air to air shots, high speed fly-bys, take offs and landings. With all the natural sounds as they fly right over head at more than 200 miles per hour! P/N 13-04260.....

SKYWARD TECH AIRCRAFT ENGINE REBUILDING



De-mystify the overhaul procedures on selected Continental & Lycoming engines. Tapes begin with a dismantled engine, show the crankshaft being mounted on a stand and then proceed through complete assembly. Whether you are looking for an education on engine components or considering an actual overhaul these tapes effectively present the step-by-step procedures of re-assembly.

| Description | VHS P/N | Price | DVD P/N | Price |
|---------------------|----------|-------|----------|-------|
| Cont. 0-200 Rebuild | 13-50710 | . | 13-03208 | . |
| Lyc. 0-320 Rebuild | 13-50715 | . | 13-04465 | . |
| Lyc. 0-360 Rebuild | 13-50720 | . | 13-03210 | . |
| Lyc. 10-360 Rebuild | 13-50725 | . | 13-03209 | . |



SCRATCH BUILDING BASICS FOR METAL AIRCRAFT

An excellent way to determine if building a homebuilt aircraft from scratch is right for you... you will obtain a full understanding of the trials, tribulations, joys and successes that this type of building process entails. You can't watch these guys at work and not learn something that might change the way you think about the process and people that build their own planes from scratch! Approximately 3.5 hours in length and is divided into 10 video chapters to make navigation and review of desired sections fast and easy. The DVD set includes web links to plans for building your own sheet metal brake and other tools used in this video (you can print the plans on your own printer). P/N 13-04185.....

FIBERGLASS REPAIRS MADE EASY DVD



FIBERGLASS REPAIR DVD SET - Includes: Fiberglass Repair & Gelcoat Damage & How to Repair Gelcoat. Learn all the procedures to repair gelcoat including mix matching colors, fill scratches and voids, spray gelcoat, applying new fiberglass laminate and final finishing. P/N 13-06563.....

DVD FIBERGLASS REPAIR & GELCOAT DAMAGE - Learn how to make fiberglass repairs as you look over the shoulder of a professional. Covers grinding out damaged material, applying new fiberglass laminate, shaping to original lines and finishing. 54 mins. P/N 13-06564.....

DVD FIBERGLASS REPAIR: HOW TO REPAIR GELCOAT - Learn how to make fiberglass repairs as you look over the shoulder of a professional. Learn to mix matching colors, fill scratches and voids, spray gelcoat and final finishing. 43 mins. P/N 13-06565.....



COMPLETE COMPOSITE & FIBERGLASS LIBRARY ON DVD

All five of our How-To videos on a convenient 2 DVD set. A total of 190 minutes of the most complete guide for using composite materials available anywhere! The Complete Fiberglass and Composite Library contains The Basics of Fiberglass, A Step-By-Step Guide to Molding Fiberglass, Advanced Moldmaking and Plug Construction, Vacuum Bagging and Sandwich Core Construction and The Art of Moldless Composites. P/N 13-06551.....



DEEP INSIDE YOUR ROTAX INSTRUCTIONAL DVD

You can now see and understand what procedures are involved with the 150 and 300 hour inspection/rebuild services. Alan points out the places carbon accumulates, where the common areas of wear occur, and other signs indicating the possibility of potential failures. The specialized Rotax engine tools are demonstrated as to their function in removing various internal components. Installation and maintenance tricks are also demonstrated and explained for the purpose of heading off future engine failures that can lead to disaster. And More. P/N 13-03370.....

ROTAX 912 INSTALLATION TIPS & TECHNIQUES



This presentation explains the most important details of preparing and installing the popular Rotax 912 family of four stroke engines in your experimental homebuilt aircraft. This reliable, high performance engine will only perform safely if installed properly as specified by the Rotax installation guide. The important details in this guide are often misunderstood or even ignored completely resulting in catastrophic engine failures and dangerous flying situations. DVD Running time: 1.5 hours P/N 13-04183.....



BUILDING A GLASS PANEL FOR HOMEBUILT AIRCRAFT

Mark Townsend of CanZac Aviation takes you step-by-step from the planning stages through the actual fabrication procedures and wiring for a combination glass/conventional instrument panel for an experimental aircraft. 80-minute DVD. P/N 13-04969.....



RV RUDDER WORKSHOP

This instructional video has 2 major sections: The first section contains an overview and demonstration of the tools and techniques that are required for building an RV aircraft. These specialized building techniques center around riveting with solid rivets - essential for the RV aircraft. Many specialized tools are required for this type of construction and are discussed and demonstrated. Techniques that are shown include: dimpling, countersinking, deburring, drilling, back riveting and pop riveting. A full discussion of the types of rivets that are used along with their important characteristics is included in this first section of the video. The tools for measuring proper rivet setting (rivet gauges) are shown and demonstrated. Some of the tools that are featured include: hand squeezer, pneumatic rivet gun, flush and universal rivet sets, dimple dies, back rivet sets, scotch-brite polishing wheel and deburring tools. P/N 13-04791.....



AVIATION VIDEOS & DVDS

BIG ROCKS AND LONG PROPS VOLUME I



50 thrilling minutes of water assisted landings, big rocks, big tires, and great flying in a Super Cub and Experimental Maule (A.K.A. Bushwacker) Alaska and Northwest bush pilot Loni Habersetter and Northwest bush pilot Greg Miller take you into their incredible playground of rock bars and water landings - on tires!
P/N 13-04018

BIG ROCKS & LONG PROPS - VOLUME II



You will go from Greg's training ground to the desert and on to the mountains. The main movie is 40+ minutes long and includes a commentary track. There is a section on field repair and a section on the STOL competition for the bush class in Valdez Alaska for 2006. In all, almost 90 minutes of playing time. It has Greg Miller flying "Bushwacker" and also the 5 place Sherpa, which is basically a Super Cub on steroids. It also features Doug Keller and his amazing. Husky Cub. P/N 13-04384

BIG ROCKS AND LONG PROPS VOLUME III



See the culmination of 30 years of bush flying experience as Paul flies his Turbine Otter and Super Cub in the rugged wilderness of the Wrangell-St. Elias National Park. Watch Greg as he learns the ins and outs of ski-flying in one of the most challenging places in Alaska, where the margin between life and death can be extremely thin. P/N 13-05728

BIG ROCKS & LONG PROPS VOL. 4



Join Greg Miller on his Alaskan Adventure. Greg flies his experimental Maule a.k.a. Bushwacker to Alaska in the winter of 2008. The setting for this adventure is the Wrangell-St. Elias National Park. You'll see Greg landing his ski-equipped airplane on snow, ice, rock, and water. Come along as he climbs an ice fall, skins up mountain peaks, and skis down virgin snow-covered mountains. Running Time: 121 minutes P/N 13-06275

SALUTE TO APOLLO



On Saturday evening, July 30, 1994, a once-in-a-life-time event took place at Theater in the Woods on the EAA Convention grounds. EAA welcomed 15 former Apollo astronauts (at least one member from each crew of the 11 historic missions, including all three members of Apollos 8 and 11). Join the audience as they return to the Apollo program and share their experiences. 120 min.
P/N 13-23360

MAY DAY FLY-IN & AIRSHOW 2006 & 2007 DVD



See the best short take-off and landing pilots in the nation. Witness the record breaking 19' take-off. The action continues as you enjoy events such as the Poker Run, Flour Bombing, an inside look at the Cub Crafters designed Carbon Cub, a spectacular high flying aerobatics How-To demonstration featuring Marcus Paine of Unusual Attitudes, & much more.
2006 DVD P/N 13-05743

HOW TO BUY A USED AIRPLANE DVD



Bill Cox, noted aviation authority, journalist and Senior Editor of Plane & Pilot magazine, shows you in this step-by-step DVD: •How to make the right decision in buying a used airplane •What specifically to look for and what to avoid •Gives you a checklist that dealers use in buying, selling and evaluating used airplanes .. P/N 13-03444

THINGS MY FLIGHT INSTRUCTOR NEVER TOLD ME



Topics like fuel management, flight planning, reluctant passengers, dealing with weather, the FAA, buying and owning an aircraft, as well as moving up to bigger and faster aircraft, are all discussed with humor and wit. He also discusses the people in aviation he has met that have had an influence on his flying career.
P/N 13-03381

THE 100 HOUR INSPECTION POWERPLANT



Step by step demonstration of a 100 hour inspection of the powerplant section of a Lycoming O-360 powered Piper Arrow. Explains every segment of the inspection process from an initial AD search to the final log entries. It details each procedure along with the techniques, tool and material usage, and plenty of professional hints and tips. Covers safety wiring techniques..... P/N 13-03883

THE HELICOPTER EXPERIENCE (DENNIS KENYON)



The winner of the 1992 World Freestyle Championships, and the highest scoring pilot in the 2005 Championships in Rouen, France. PRESENTS A unique combination of the top helicopter aerobatic displays at RAFA Shoreham, North Weald "Aerofair", Bury St. Edmonds "Rotors and Motors", and many more...The DVD is in NTSC format, for the United States and Canada. Not produced by Jeppesen.
P/N 13-04186

RICHARD TAYLOR ON INSTRUMENT FLYING



Here is the DVD that pilots have been waiting for. Richard Taylor, Author of the best selling book "Instrument Flying", now offers "Plain Talk About IFR Efficiency". Whether you're new to instrument flying or a seasoned professional, you'll find this video a helpful tool for making you a safer and more proficient instrument Pilot.
P/N 13-03646



PROFICIENT FLYING 3 DVD BOX SET

Disc 1 examines takeoff techniques, spins, engine failure after takeoff, control surface failures, weight & balance and measuring airspeed. Disc 2 covers rejected take off & landings, slips, power off glides, pitot static pitfalls, how to fly a taildragger and accident investigations utilization through computer generation. Disc 3 features aircraft ditching, how to swing one's compass, engine operating hints, unusual approaches, how to fly a seaplane, & how it all works.
P/N 13-03647

HAVE PLANE WILL TRAVEL



Join publisher Steve Kahn, FAA Accident Prevention Counselor Preston Westmoreland, aviation Lecturer Ross Russo, and IFR magazine editor Paul Pertorelli in this high flying video travelogue as they fly direct to some of the fascinating locations...Nova Scotia, Idaho, Cayman Islands, Mexico, Tall Timber, and Catalina. This is a tape for pilots & their families. 73:00 mins of pure flying pleasure.
P/N 13-03642

IN THEIR OWN WORDS - DVD



...this is a story of passage. And it is the story of a place.. a place where a departing generation entrusts its cultural legacy to those who will carry on. A place where they tell - in some cases for the last time - what it was really like. The stories are as countless, yet as distinctive, as snowflakes. For just a little while longer we can hear them directly from the mouths of those who wrote them. We can hear many of them here.. in a forum called "Warbirds in Review." "I smiled, I teared up, I laughed, I recalled history and friends and people lost whom I never met.. The writing is beautiful... on point, thoughtful, simple, clear, moving". P/N 13-06244

WARBIRD TRAINERS



Here is a fitting tribute to our dear friend Jeff Ethell. "The Warbird Trainers", features 3 of the training aircraft that helped train a nation of pilots to ultimately win the war. In this exciting program, Jeff flies the PT-22 affectionately known as the "Maytag Messerschmitt" because of it's takety tak engine sound, the Vultee BT-13 nicknamed the "Vibrator", and the venerable At-6. Also featured on this tape is a tribute from Jeff's family and some of his many friends. DVD..... P/N 13-04285

CHASING LEWIS & CLARK ACROSS AMERICA - DVD



Climb into the cockpit to get a different, low-altitude perspective on America. Set to stirring music, selected photographs from the Chasing Lewis & Clark Across America book provide a view of our country that will nourish one's patriotic soul. From the virgin wilderness that Lewis and Clark discovered, to cities with the creations of man, this collection of photographs is like a tightly woven tapestry of America. The other half of the DVD provides a behind the scenes look at the trip including plane construction. DVD total 45 min., Wide screen, Stereo. Book (P/N 13-04562) and Book/DVD Combo (P/N 13-04564) available.
DVD P/N 13-04563

Book P/N 13-04562

Book/DVD Combo P/N 13-04564

CUBDRIVER 749ER ALASKA DVD



Join Cubdriver749er and friends as we travel across the Alaskan frontier showcasing the off-runway capabilities of the Piper Supercub. Whether an expert aviator or novice pilot, Cubdriver: Alaska™ will certainly entertain with over 2 1/2 hours of Supercub action!
P/N 13-05736

ALASKA HIGHWAY FLIGHT- AN ADVENTURE DVD/BOOKLET



Preparing for a flight to Alaska following the Alaska Highway can be daunting for pilots not familiar with Canada flight rules, flying mountainous terrain, remote / wilderness areas and not being sure what they will encounter along their route. With proper planning, the only surprises that a pilot and companions will encounter will be the magnificent scenery. P/N 13-06002

WONDERFUL WORLD OF FLYING



Due to overwhelming request, the Wonderful World of Flying is now available on DVD. The Wonderful World of Flying is the only general aviation video magazine, featuring stories on safety, travel, warbirds, and fun places to fly.
P/N 13-03649

AVIATION VIDEOS & DVDS

INSTRUCTIONAL VIDEO TAPES



BUILDING THE RUTAN COMPOSITES - This step-by-step instructional program features Burt Rutan and Mike Melvill proceeding through the complete foam-epoxy-fiberglass composite construction procedure as used on the VariEze, Long-EZ, Quickie, Q2, Dragonfly, Sea Hawk, Polliwagen and other composite aircraft. Also included is a formation flight by the Long-EZ, Defiant and VariViggen. A must for all composite aircraft builders. 1hr, 36 mins. DVDP/N 13-04809



FIBERGLASS 101 - This tape shows aircraft builders how to make molds, fairings, and parts from fiberglass. It takes you step by step through the phases of glass work so that you can build parts yourself. Produced by fiberglass expert Sam James. 2 hrs. P/N 13-40368



BASIC AIRCRAFT SHEET METAL TECHNIQUES & TOOLS

- George Orndorff, a noted aircraft builder, demonstrates 13 sheet metal techniques and offers many helpful hints to save time and help motivate the homebuilder. Segments include shop organization and safety, cutting, polishing, deburring, drilling, dimpling, countersinking, riveting, fluting, bending, circle cutting, and more. A sample control surface is constructed using these techniques. 58 minutes. VHS P/N 13-15120



MIKE ARNOLD'S AR-5 WORLD RECORD AIRCRAFT DVDS

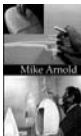
DVD 1, "Why it goes so fast" - Documents the efficient AR-5's record runs and clearly explains the simple drag reduction concepts used to achieve its surprising performance on such low power. With comments by aerodynamicist, Bruce Carmichael. P/N 13-15130

DVD 2, "How it's made" - Details the engine installation and the airframe's structural design, and completely demonstrates the easy moldless, hot-wired, foam and fiberglass

construction process used on the fuselage, wing and tail services. Almost 2 hours. P/N 13-15135

DVD 3, "Moldless, low drag wheelpants" - Details the engine installation and the airframe's structural design, and completely demonstrates the easy moldless, hot-wired, foam and fiberglass construction process used on the fuselage, wing and tail services. Almost 2 hours. P/N 13-06277

DVD 4, "Making Fiberglass Molds" - This DVD chronicles development of a beautiful six piece, modded fiberglass aircraft cargo pod to show the simple design and fabrication techniques used to produce low cost, professional quality, production molds. From first sketches, through master patterns, to finished parts. Over an hour. P/N 13-06278



MIKE ARNOLD'S MOLDLESS LOW DRAG WHEELPANTS

- "Moldless, low drag wheelpants", a close-up study of the design and fabrication of the AR-5's Custom Fiberglass Landing Gear Fairings. Every step is shown, from initial research, through foam carving, to final paint and installation. Over an hour. P/N 13-15124



MIKE ARNOLD'S MAKING FIBERGLASS MOLDS - "Making fiberglass mold", chronicles the design and fabrication techniques used to produce Low Cost, Professional Quality, Production Molds. From first sketches, through master patterns, to finished parts. Over an hour. P/N 13-15125

COMPOSITE MATERIALS VIDEOS



A STEP-BY-STEP GUIDE TO MOLDING FIBERGLASS - From construction of the plug, to building the mold and pulling the finished part, this 7-step guide offers guidelines and tips to make even your first molding experience a success! 35 minutes. P/N 13-40350



THE BASICS OF FIBERGLASS - For beginners in fiberglass, this video describes resins, reinforcements, tools, supplies and terminology. 20 minutes. P/N 13-40355



FIBERGLASS REPAIRS MADE EASY, VOL. II/HOW TO REPAIR GELCOAT - Learn how to mix your own matching color gelcoat, fill scratches & voids on gelcoat surface and spray gelcoat. 43 min. P/N 13-40365



ADVANCE MOLD MAKING AND PLUG CONSTRUCTION - See a complete demonstration of plug design, construction, and the finishing process as well as the complete process of building a large polyester mold. P/N 13-40340



VACUUM BAGGING AND SANDWICH CORE CONSTRUCTION - See the complete process of scheduling and laying up the graphite layers, the honeycomb sandwich core, and the vacuum bagging process. P/N 13-40345

"TIN MAN" METAL WORKING VIDEOS

These videos provide excellent instruction for the aircraft builder. Ken White, The Tin Man, is a master craftsman and instructor for the Experimental Aircraft Associations metal working workshops at Oshkosh.



BASIC DAMAGE REPAIR ON ALUMINUM - Take an axe and drive it through the nose of an RSK Porsche. Now we're ready to begin by bumping, smoothing, gas welding, planishing, and metal finishing. All work completed on camera. Complete and very detailed. Color, 63 min. DVD..... P/N 13-04377



EDGE THOSE PANELS - Learn to make flanges, hems wired edges, and flares. With just a hammer, dolly, and some simple tools you can make, you'll be able to easily edge lots of panels. Wing rib construction is also shown. Then a rotary machine (bead roller) is used to do really fancy artwork! Color, 126 min. DVD..... P/N 13-04378



AN AMERICAN'S VIEW OF THE ENGLISH WHEEL - Shrink on the wheel? You bet! Analyze frame design, tracking patterns, layering, pressure measurement, rapid high crown development, nearly flat panels, and much more. Last segment shows air hammer shaping and shrinking on the Pullmax. Color, 126 minutes. DVD..... P/N 13-40302



SHRINKING MAGIC - The art of shrinking (crimping or compression) is demonstrated using both the Lancaster machine and the torch and hammer method. Hot work demonstrations include steel, aluminum, copper, stainless, titanium, and magnesium. An excellent segment on form block work is shown as well. Color, 84 minutes. DVD..... P/N 13-04381



SHAPING ALUMINUM WHEEL PANTS-WITH 7 SIMPLE HAND TOOLS - Using a torch, mallet, stump, forming bag, slapper, dolly, and clamp you can make a really nice pair of pants (fenders or tank). This video includes buck development, pattern work, and hot shrinking. Air hammer shaping and Pullmax shrinking segment at the end. Color, 125 minutes. DVD..... P/N 13-04380



HOW TO GAS WELD ALUMINUM - Learn the professional methods of setting the torch, regulator pressures, and secrets of the flux. Filmed with two cameras through the finest eye-wear available to show tacking, distortion control, flat and vertical welds. Many 30-year veteran welders have benefited from this video. Color, 105 minutes. DVD..... P/N 13-04379



4130 CHROMOLY AIRFRAME CONSTRUCTION - This video is highly recommended for anyone considering a steel tube fuselage aircraft. It covers the whole process: Workflow, welding rod selection, jiggling, fitting, and welding. (Note: The discussions and advice are almost exclusively about oxyacetylene welding. TIG, GTAW, is mentioned only in passing.) VHS..... P/N 13-00389



BASIC AIRCRAFT PAINTING - Join a professional paint crew as they show you the detailed steps and techniques involved in painting an all-metal aircraft (60 min.). P/N 13-40775



BASIC AIRCRAFT WOODWORKING - Woodworking knowledge is essential to any homebuilding project. Power tool safety is also discussed. A great starter tape (30 min.). P/N 13-23355



BUILDING YOUR OWN AIRPLANE: HOW TO GET STARTED

This is the first of a series of videos that will give you insight into the exciting world of homebuilding. Topics of discussion include selecting the right kit for you; the definition of an experimental aircraft; Federal Aviation Regulations (FARs); insurance; how to set a realistic budget; FAA inspections and many other topics (45 min). P/N 13-40535

BV

EAA AVIATION VIDEOS & DVDS



GETTING STARTED IN AEROBATICS

An introduction to the world of aerobatics. You'll see and hear 6 of the world's top aerobatic pilots relate their years of experience and address topics that include aerobatic training options, the benefit of aerobatics and more. Contains valuable information to consider before you begin (or continue) aerobatic training (60 min). P/N 13-40505

AEROBATIC PHASE OF FLIGHT TRAINING

This information and entertaining video, by Col. Art Medore, presents a variety of primary aerobatic maneuvers from the pilot's eye view with an explanation of the execution procedure. Based on Col. Art Medore's best selling manual "primary Aerobatic Flight Training." Running time 30 minutes. VHS format only P/N 13-04231

THE EAGLES - IT'S BEEN A GREAT RUN

"It's Been A Great Run" commemorates the 25-year history of the Eagles Aerobatic Flight Team. This 30 minute video program chronicles the beginning years when Charlie Hillard, Gene Soucy and Tom Poberezny flew Pitts Specials and called themselves the Red Devils. Also included is dramatic aerial footage of the team's final performances at Oshkosh '95 and at the Daytona Skyfest. Interviews with other well-known airshow performers pay tribute to the skill, dedication and longevity that have made "The Eagles" special. Family members and friends share with us what it has meant to be associated with the longest running formation flight team in history. Spectacular air-to-air and camera mount footage photographed by EAA's award production team. P/N 13-40524



FLYING THE SUKHOI

Features interviews with the pilots who have flown this remarkable airplane, outstanding air-to-air and incredible mount camera footage of the SU-26, SU-29 & SU-31 in action. P/N 13-40575

AVIATION PHOTOGRAPHY MADE EASY

Learn basic aviation photography techniques from the award winning EAA photo staff. Topics include equipment selection, composition basics, and tips on ground-to-air and air-to-air photography. P/N 13-40580

CLEARED TO LAND
The Ultimate Aviation DVD For Kids - This children's aviation DVD is a behind-the-scenes tour of a big-city airport along with over one hour of dazzling airplanes in flight! Commercial, military, exotic aircraft and more. Incredible footage!
P/N 13-06230-1



TAILWHEEL 101 DVD

Whether you want to fly upside down, low and slow, or in the bush, the tailwheel endorsement is the place to start... And Tailwheel: 101 will help you get there. This video is the premiere study guide for all pilots wishing to get their tailwheel endorsement, or for any tailwheel pilot who'd like to learn a thing or two from the most widely recognized tailwheel expert in America, Damian DelGaizo. Ride along with Damian and his student Jill as she gets her tailwheel endorsement. Each ground segment is immediately followed by its real-world airplane demonstration to reinforce the material and make pre-flight study sessions easy and efficient. P/N 13-06023

ANDY MEETS THE BLUE ANGELS - DVD

Get ready to soar with pint-sized animated adventure boy, Andy, star of the run-away hit show Andy's Airplanes! This 30 minute, brand new, children's aviation show is perfect for the junior pilot in your life. Each episode draws to a close with real kids in a live action segment. Episode one explores the distinguished aircraft carrier the USS Midway. Kids are Andy's biggest fans, but parents and educators love him too. P/N 13-06038

SAFE HAND PROPPING DVD

Learn the step by step procedures to make hand-propping an aircraft a safe activity for you, your passengers and others. Covers essential knowledge about magnetos and impulse couplings, propeller cautions, use of chocks and helpers as well as the procedural steps of normal starting and clearing a flooded engine. Not only shows you how, in detail, to perform these procedures, but also explains the risk factors and the safety issues associated with each step of the process. DVD P/N 13-06641



THE BUILDING OF VOYAGER - This beautifully produced video follows the incredible story of Voyager from its conception and design by Burt Rutan through the construction process in Mojave and on through the flight test program culminating in the record setting flight around the world in December 1986. A fine presentation of this fantastic aircraft and the many people who made the impossible flight reality. VHS format. P/N 13-00078



EAA SPORTAIR WORKSHOP VIDEOS

All videos produced by the EAA SportAir Center

BASIC FABRIC COVERING

Aircraft Fabric Covering is a must for anyone who wants to cover their own airplane. This 2-hour comprehensive video presents every aspect of the Poly-Fiber™ fabric covering process in detail, and in easy-to-understand language. From preparing the airplane for covering to spraying on the colors, you are guided step by step through the entire process by a professional EAA SportAir fabric instructor. When used in conjunction with the Poly-Fiber manual, Aircraft Fabric Covering removes the mystery surrounding this important process in the construction or restoration of your airplane. Information covered includes: • Preparing surfaces • Attaching the fabric • Tightening the fabric • Applying the first coat of Poly-Brush • Tying rib-lacing knots • Applying finishing tapes • Spraying UV-blocking chemical, Poly-Spray • Applying the color coats. P/N 13-40428

COMPOSITE AIRCRAFT CONSTRUCTION - Information on various types of materials incl: Laminating systems, foam, fillers, fiberglass & other cloth, cutting foam simple lay-ups, joining molded parts, use of peel ply & more. P/N 13-40785



EAA AIRVENTURE VIDEO & DVDS

EAA AirVenture Oshkosh will be remembered as perhaps the best all-round convention ever, and you can preserve those memories by getting your copy of the EAA AirVenture video or DVD, produced by the EAA Television staff. The Annual videos & DVDs feature highlights from the best events at each years convention.

| Description | Part No. | Price |
|---|----------|-------|
| 2008 DVD - This DVD will feature the best of the 2008 convention, including the Dreamliner, Martin Jet Pack, the Nemesis record attempt, the new FAA tower, Rocket Racing League, the best of homebuilts, warbirds, lightplanes and vintage, an interview with John Travolta, and much more. | 13-06225 | . |
| 2007 DVD - Includes daily highlights, the F-22 Raptors, Goodyear Blimp, the seaplane base, interviews with Jim Lovell and Morgan Freeman, and much more. | 13-05650 | . |
| 2006 DVD - Highlights include: • B-1 bomber and the Blue Angels. • Burt Rutan and the future of aerospace travel. • F-22 Raptors. • 50th anniversary of the Cessna 172 Skyhawk. • C-17 Globemaster • Air show performers • World War II bomber reunion | 13-04059 | . |
| 2005 VHS - Features SpaceShipOne, Global Flyer, Glacier Girl, and countless other highlights from the World's Greatest Aviation Celebration | | |
| 2005 - DVD | 13-04059 | . |
| 2005 - VHS | 13-04060 | . |
| 2003 - Includes the air show, celebrity guests and interviews, the EAA Countdown to Kitty Hawk pavilion, the Lindbergh Museum exhibit, & more. Bonus material from the evening programs. | | |
| 2003 - DVD | 13-02539 | . |
| 2003 - VHS | 13-02540 | . |
| 2001 - includes the final flight of the Gee Bee, the F-15, C-17, Reno Racers, the CASPA competition, the kick-off to Countdown to Kitty Hawk, the WASPS and the Tuskegee Airmen, Yeager and Crossfield, a look at camping and the seaplane base, the daily airshow | | |
| 2001 - VHS | 13-01624 | . |
| 2001 - PAL Format (For Europe) | 13-01625 | . |
| 1999 VHS - Highlights include: • "Father Goose" Bill Lishman • 50th anniversary of the T-34 Mentor • 70th anniversary for the Pietenpol Air Camper & more. | 13-00434 | . |
| 1998 VHS - From homebuilts to warbirds, ultralights to vintage aircraft, it's all here, including the exciting daily airshow and the return of Concorde | 13-00597 | . |



THE HISTORY OF SEAPLANES - Ever wonder who was the first to fly on floats? This video answers that questions and many others, while chronicling the history of floatplane flying. A must for any "water-minded" pilot enthusiast. (30 min) P/N 13-23365



WORLD AEROBATICS CHAMPS 1996/78 - EAA captures the excitement of the World Aerobatics Competition like no one else can. Former Champions Gene Soucy & Tom Poberezny are your hosts for an exciting trip to the ultimate aerobatic competition. (45 min.) P/N 13-23350



RICHARD TAYLOR ON INSTRUMENT FLYING - Here is the videotape that pilots have been waiting for. Richard Taylor, Author of the best selling book "Instrument Flying" now offers "Plain Talk About IFR Efficiency". Whether you are new to instrument flying or a seasoned professional, you will find the video a helpful tool for making a safer and more proficient instrument pilot. P/N 13-01025

AVIATION VIDEOS & DVDS



THE 35 & 33 BONANZA - Covers history, safety, performance, cost, maintenance and owner comments of the legendary Bonanza. Gives details on what to look for in a new or used Bonanza. focuses on mod and the care of the Bonanza. We'll put you in the cockpit from preflight to touchdown. (40 min) P/N 13-23800

BONANZA FACTORY TOUR - See how the legendary Bonanzas and Barons are hand built. Watch the nose assembly, lower cabin assembly, upper cabin assembly, cabin mate, tail fuselage mate and final assembly come together. Plus 30th ABS convention in Wichita, Kansas. (50 min) P/N 13-23810



VISIT THE BONANZA SERVICE CLINIC - A must see video for any Bonanza owner. Watch how ABS mechanics give a Bonanza a thorough inspection. See items missed by many mechanics in the field. Focuses on landing gear, engine, hoses, wing bolts & the famous Bonanza tail. (30 min) P/N 13-23805

THE 36 SERIES BONANZA - An in depth report of the model 36 Bonanza. Covers history, safety, performance, handling, cost and maintenance of this amazing aircraft. Shows details on what to look for when purchasing a new or used turbo Bonanza. Includes owner comments. Covers all aspects of the turbo Bonanza, from preflight to touchdown. P/N 13-23815



FLY BAJA MEXICO - Explains border crossing, Mexican authorities, tipping, where to stop for the best fishing, how to get fuel, pass U.S. Customs and much more. We'll take you blue water fishing for marlin and dorado at one of the finest fishing spots anywhere - Punta Pescadero. (40 min) P/N 13-23820



HOW TO BECOME A PILOT - Perfect for student pilots, explores medical issues, needed hours, equipment and itemized costs of the whole program. Explains the best way to select your instructor, aircraft, ground and flight school, shows in-flight video, & typical flight school operations. (50 min) P/N 13-23825



FLYING THE HELICOPTER - Perfect for anyone seeking a helicopter license. Covers all the important concepts you need to know of flying a helicopter. Experience exciting in-flight demonstrations, cockpit view and classroom instruction using gain animated graphics. All pertinent aerodynamics are covered from retreating blade stall to autorotation. (90 min) P/N 13-23840



FLYING SINGLE PILOT IFR - If you fly single pilot IFR, this video is for you. Explains risks involved and how to minimize them. Explores equipment requirement, organization, getting real time weather, staying ahead of the airplane, copilot selection and situational awareness. (60 min) P/N 13-23850



HOW TO GET A FLIGHT REVIEW - Recommended for anyone preparing for a flight review. Covers the relevant areas of FAR 61.56. and what you need to know for the flight review. Includes the new airspace & weather reporting changes. (50 min) P/N 13-23860



ADVANCED FLOAT FLYING TECHNIQUES - A sequel to the popular "Wonderful World of Floats", this video takes you to the next level. Includes salt water and tidal water techniques. Produced in cooperation with EDO Floats and Brown's Seaplane Base. Features Mark Futch flying a Maule on floats and Terry Kohler's Turbo Goose (Approx. 60 min.) P/N 13-40840



ATTITUDE FLYING WITH DICK RUTAN "FLY LIKE A LEGEND" - For serious pilots only. Conceived and designed to take you above and beyond other aviation training programs, the Aviator Series captivates and educates like no other training video you've seen before. Puts you shoulder-to-shoulder with the world's foremost aviators as they share leading edge skills and techniques that made them legends. DVD P/N 13-05858

Blue Ray DVD P/N 13-05859



BUILT FOR SPEED: THE GOLDEN AGE OF AIR RACING - Traces the rapid development of air racing between 1929 and 1939. This exciting decade belonged to civilian pilots who were flying faster than the military. Air racing was one of this country's most popular spectator sports. "Built for Speed" features highlights from both the Bendix (cross-country) and Thompson Trophy (closed-course) races between 1929 and 1939; rare archival interviews; never-before-seen footage of racers in action; contemporary interviews with Harold Newman, Jimmy Doolittle, Edna Gardner Whyte and others. A great companion to the book "The Golden Age of Air Racing", (available through EAA, see our "Manual & Publications" list) this video is a MUST for every air racing fan 30 min). P/N 13-40500



FLYING THE B-17 - The second of EAA's "In The Cockpit" series, this video takes you inside the EAA Aviation Foundation's B-17 Flying Fortress "Aluminum Overcast." See the magnificent restoration and find out what it is like to fly this big four-engine bomber. Features extensive camera mount footage and in-flight cockpit video (30 min). VHS P/N 13-40552

FUN ON FLOATS - 75% of the earth is covered by water. This video features the endless opportunities afforded the world of amphibious ultralight float plane flying. Fun on Floats was filmed in Cajun Country and beautifully features the passion of flight and the tranquility of water. P/N 13-03720



FIRST FLIGHTS IN YOUR HOMEBUILT AIRCRAFT - Introduced by NASA Space Shuttle Commander, Robert "Hoot" Gibson, this video draws upon the resources of more than 40 years of EAA expertise. Learn the importance of careful planning, what to do to make a test flight go smoothly, and what to do if problems arise. The initial flights in any aircraft are a challenging & rewarding experience. Get a head start with this video. (23 min) P/N 13-23380



KEEP 'EM FLYING WARBIRD SHOW - In this special edition of EAA's Ultimate Flights journey to EAA Fly-In for the largest annual gathering of warbird in the world. See dozens of the finest warbirds in existence and some so rare that less than a dozen examples still fly. Witness them in their natural environment-in the air where they belong. Listen for the roar of the radial engines, feel the rumble along the flightline, and smell the oil and gas in the air. Join EAA and EAA's Warbirds of America for an hour long special dedicated to the preservation of all vintage military aircraft and as a flying tribute to an important era. (60 min.) P/N 13-23370

CANADIAN PRIVATE PILOT GROUND SCHOOL CD-ROM - This self-paced study program has been designed to fulfill the Transport Canada requirements of groundschool training for the issue of a Canadian Private Pilot Licence (PPL). The course allows you to study at your own pace, and without the restriction of having to attend pre-arranged classroom instruction. This course also serves as an excellent supplement to traditional classroom learning, or as a refresher course for those pilots already licensed to fly. P/N 13-06531

THE EDUCATED OWNER VIDEO SERIES

VOLUME I: PREVENTATIVE MAINTENANCE - initially details the FAA's rules concerning what maintenance tasks an owner can legally perform. It then proceeds to instruct viewers on the proper tools and supplies for common maintenance tasks and follows with detailed, step-by-step demonstrations of Engine Inspections, Landing Light Replacement, Oil Changes, Spark Plug Maintenance and Tire & Wheel servicing. The video is approx. 60 min. long. DVD P/N 13-03572

VOLUME II: THE ANNUAL INSPECTION - covers Federal Aviation Requirements, and takes viewers, step-by-step, through the Annual Inspection process. This video teaches viewers how to manage the aircraft's maintenance during the Annual Inspection and on an ongoing basis. Key topics include: The Annual Inspection and the FARs, Selecting a Maintenance Facility, The Inspection Process, Correcting Discrepancies and Aircraft Enhancements. Video is approx. 70 min VHS P/N 13-01330

VOLUME III: Teaches pilots and prospective aircraft owners all about aircraft ownership. Teaches how to analyze the costs of aircraft ownership and takes viewers, step-by-step, through the selection, pre-purchase and sales transactions. Includes detailed information on preventative maintenance, annual inspections and tips for living with your new aircraft. 90 min. VHS P/N 13-01626



AVIATION VIDEOS & DVDS



STAY ALIVE-A GUIDE TO SURVIVAL IN THE DESERT SOUTHWEST

The desert is one of nature's greatest challenges, filled with discoveries, but a wrong turn in a car or mechanical trouble in a car or aircraft can instantly put you into a survival situation. This is the first video that will teach you what you need to know with demonstration maps, and graphics. Hosted by Preston Westmoreland and featured on Paul Harvey's News.

P/N 13-15145



STAY ALIVE-A GUIDE TO SURVIVAL IN THE MOUNTAINOUS AREAS

We show how to dig a snow cave, tell weather by the clouds, how to deal with bears and other wildlife, plus expert advice on hypothermia, clothing, edible plants of the mountains, and many other areas. Taped from the White Mountains of New Hampshire to the Colorado Rockies. 2 helicopters & fixed wing aircraft were also used to gather footage. 90 Min.

P/N 13-13154



FLYING DOWN TO THE CARIBBEAN

On this tape the crew takes the viewer as far down the chain as St. Eustatius, including stops in the British and U.S. Virgin Island, the Dominican Republic, and Puerto Rico. "Flying Down to the Caribbean" also offers extensive explanation of various get-away sights once in the island chain and gives recommendations for hotels and restaurants. In a familiar format, the film flows the flight of 2 Mooneys through the islands, with plenty of in-flight footage.

P/N 13-00070

FORMATION FLYING—THE ART

This video represents a true milestone in a flight training product available to civilian pilots which parallels the comprehensive type training one would receive in a military environment. Excellent for any pilot wishing to learn formation flying taught using standardized military procedures. Recommended by EAA/Warbirds of America.

P/N 13-15150



THE WONDERFUL WORLD OF FLOATS

Jack Brown's Seaplane Base in Winter Haven, Florida is the setting for this instructional video. Covers everything from basic Cubs to Cessna 206 Turbo on floats. Learn how to fly a float-plane correctly - and safely - for the first time. Excellent air-to-air photography. (120 min.)

P/N 3727



THE 17 MOST POPULAR WAYS TO FAIL OUT OF THE SKY - DVD

Flyright Productions offers a superior series of instructional videos (now on DVD) with the facts you need in a format you'll remember. This Hollywood-quality series has high production values while providing useful information that's difficult to find elsewhere.

17 WAYS focuses on the primary causes of accidents according to NTSB statistics. This breakthrough video actually creates the flight situation and illustrates how human factors influence the decision-making process, contribute to pilot error and cause accidents. Our unique approach offers distinct advantages: the viewer becomes a participant in the flight experience, which guarantees maximum retention of this critical information. Better retention means stronger performance...and safer flights. Hosted by Bob Hoover, premier aerobatic demonstration pilot, and includes segments of his airshow performed in the Shrike Aero Commander. Written by John Lowery, renowned aviation safety writer, author of "Professional Pilot" and "Anatomy of a Spin," and instructor at Embry Riddle Aeronautical University. Features an unparalleled staff of aviation experts - test pilots, flight surgeons and instructors from both the Naval and Air Force Test Pilot Schools, the Institute of Aviation Safety at USC, and Embry Riddle University. Approx. Running Time: 2:25 Minutes Not Rated.

P/N 13-06650



EXPERIENCE THE SPIRIT OF FLIGHT

"The EAA Air Adventure Museum Video Tour" -- Experience the Spirit of Flight in one of the worlds best aviation museums. From Homebuilts and Ultralights to Antiques and Air Racers, discover the aircraft and displays that make the EAA Air Adventure Museum unique. The next best thing to being there

P/N 13-40515.....

NORTH OF THE ARCTIC CIRCLE - Even if the Arctic is not on your flight plan for now, North of the Arctic Circle is fun to watch! Take a summer dip in the iceberg-filled Arctic Ocean or follow the migrating caribou. See eskimo art unveiling and hear stories about towns, people, and airplanes. Breathtaking aerial video, extensive guide on flying and navigating in the Arctic. (120 min.)

P/N 13-00638



Vol I



Vol II

THE 17 MOST POPULAR WAYS TO FALL OUT OF THE SKY..

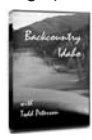
A breakthrough approach to aviation safety that differs from anything else you've ever seen. We examine the primary causes of accidents according to NTSB statistics - the mistakes that occur over and over again - and recreate in dramatic vignettes the action leading up to, causing or contributing to these accidents. Hosted by Bob Hoover, premier aerobatic demonstration pilot, and includes segments of his air show as performed in the Shrike Aero Commander.

- V. 1 - Preflight Prep. & Take off..... P/N 13-40370
- V. 2 - Cruise & en Route..... P/N 13-40375
- V. 3 - Approach & Landing..... P/N 13-40380
- V. 4 - Your Body in flight..... P/N 13-40385



FROM THE GROUND UP - TV's only show dedicated to the homebuilding and restoration of airplanes. The show that introduced America to the personal aircraft movement on the Discovery Wings Channel is now available on video!

- Episodes 1-3: (Introductory overview; Tail Construction, Riveting; Wings)..... P/N 13-02463
- Episodes 4-6: (Connecting wings to fuselage; Surface & flaps; Interior)..... P/N 13-02464
- Episodes 7-9: (Electronics; Firewall Forward; Plumbing & Exhaust) P/N 13-02465
- Episodes 10-13: (Canopy & Landing Gear; Paint Prep; Inspection; First Flight)..... P/N 13-02466



BACKCOUNTRY IDAHO DVD

Pilots of all skill levels will truly enjoy the exhilaration and adventure of Idaho backcountry flying at its best with ... Backcountry Idaho. Visit some of the best backcountry airstrips in the Rocky Mountains. Explore scenic wilderness, vast pine forests, and steep canyons in search of pristine beauty and the next runway challenge. Fly right seat on the actual approaches and departures of these spectacular backcountry airstrips with Todd at the controls of his high-performance, custom designed, King Katmai.

P/N 13-06298



UTAH OUTBACK DVD

Visit some of the best backcountry airstrips of the American West. Discover ancient Anasazi cliff dwellings or squeeze through a thousand-foot-deep canyon in search of incredible beauty and the next runway challenge. Take a journey with expert pilot Todd Peterson as he explores some of the remote and beautiful country featured in Galen Hanselman's "Fly Utah" pilot's guide. Fly the actual approaches and departures of these spectacular backcountry airstrips with Todd at the controls of his King Katmai. Fasten your shoulder harness and enjoy the exhilaration and adventure of backcountry flying at its finest with Utah Outback.

P/N 13-06309



IT'S GOTTA BE A JENNY - One of America's most famous airplanes. 30 minutes of aviation magic including rare footage of the Jenny's earliest days as a military trainer and the antics of daredevil barnstormers. Witness Ken Hyde's 16-year award-winning Jenny restoration and the unprecedented gathering of six Jennies at the 1989 EAA Fly-In-Convention.

P/N 3616



CARIBBEAN FLYING ADVENTURES

The Practical Pilot's Guide to the Islands DVD Format. This is the only on-line and up-to-date Pilot's Guide for flying to the Islands. It literally contains everything a pilot needs to know and do about flying to the Caribbean - charts, documents, fees, current fuel prices, step-by-step arrival / departure procedures and more. Most of the information is not available from any other source - and it is continuously updated. Scenic, 4 Minute Approaches to 15 Major Airports in the Caribbean - Antigua, Barbados, Dominica, Nassau, Nevis, Providenciales, Santo Domingo, St Kitts, St Lucia, St Martin (Dutch and French), St Vincent, Tobago, Trinidad and Vieques, PR. BONUS Approach: St Barts - The Most Challenging Landing in the Islands. Includes the Pre-Departure Checklist - Everything You Need to Know and Do Before You Depart.

Caribbean Flying Adventures #1..... P/N 13-04182

Caribbean Flying Adventures Membership..... P/N 13-04261



FLYING THE SPIRIT

"The third of EAA's in the cockpit series" - tells the story of one of the most famous airplanes of all-time the Spirit of St. Louis. Learn about the man behind the original flight, Charles Lindbergh, through amazing historical footage. Then, fly along in two replicas of the famous craft with astronaut Hoot Gibson, the late John Denver and the man who flew over Paris for the 60th anniversary of the flight, airline pilot Verne Jobst. (25 min)

P/N 13-23375

AVIATION DVDS

THE GREAT CIRCLE AIR SAFARI DVD

FLYING THE OUTBACK



Experience an exhilarating flight through the vast Australian Outback with nine vintage aircraft. In the fall of 2005, two Americans, Doug DeVries and Rob Richey, shipped their 1942 Stearman biplane all the way to Australia, joining up with their Aussie mates for a 4,000 mile flight through some of the most remote areas in the country. Stunning high definition footage by Oscar winning director of photography Eric Thiermann coupled with the story of two pilots on a quest of discovery yields a compelling film.

P/N 13-05079.....

LAST FLIGHT HOME - DVD



About the Film

The 'Last Flight Home' documents the story of Dr. Patrick Scannon's work searching for and finding missing World War II aircraft and the MIAs associated with them in Palau. A ferocious battleground nearly forgotten by history, yet more than 200 US aircraft went down on and around the islands. Almost half of those with crew now listed as

Missing In Action. Over 60 years ago all the families got was a telegram. Whereabouts unknown, *Missing In Action*. And over the generations these families have refused to forget and refused to stop waiting. For an answer, for their return, for some clue as to what happened. Surprising though it may be, hope has remained. Then, the phone call out of the blue, "Are you the nephew of Arthur Miller?", finally brings the answers. Dr. Scannon furthers his research into the MIAs of Palau by scouring the National Archives, After Action Reports, and interviews with veterans of the campaign, no stone left unturned. Scannon's small team of self funded private citizens have taken on these tasks simply as a way of thanking the MIAs and their families for the sacrifices made decades ago. Our film follows the story of three searches in Palau and the families touched by the work. Filmed over the course of nearly six years and seven expeditions to Palau, where we thought the adventure was to be found. It was our delight to discover the adventure and heart of the story here in the U.S. with the families.

Running Time: 70 minutes (approx) P/N 13-05174.....

WORLD WAR 1 AMERICAN LEGACY



World War 1 – American Legacy vividly tells the many forgotten stories of the men and women who served in the Great War, reminding Americans of their impact on our country that can still be felt today.

Charles Whittlesey of the Lost Battalion and Father Duffy of the Fighting 69th became famous for surviving against impossible odds. Pilots Victor Chapman and Quentin Roosevelt and ambulance drivers like Richard Hall made the supreme sacrifice. Writers such as e.e.cummings, Ernest Hemingway, Joyce Kilmer and Alan Seeger were inspired by the tragedy around them. African-American soldiers like James Reese

Europe and the Harlem Hell Fighters made history. Female volunteers like the "Hello Girls" and Red Cross nurses risked their lives supporting the troops and started a new era for women.

Filmed in high definition and full of period music, photographs and monuments, World War 1 – American Legacy includes rare images that have never been seen before on screen, bringing the extreme detail of the Great War to life.

P/N 13-05173.....

FLYABOUT DVD



Flyabout tells the autobiographical story of Monika Petrillo's journey piloting a small single-engine airplane around the continent of Australia. Her father, a pilot with limited experience himself, is riding shot. As the only women pilot in a group of eleven people, Monika sets out to experience the true freedom of flight above one of the most untouched places on earth. But what impacts her most is the unexpected conflict that arises between her father and herself.

P/N 13-06638.....

CHRIS & TED'S FLYING IN ALASKA VIDEO



When they planned their trip to Alaska, they encountered a startling lack of visual information for much of the state, in particular those areas less travelled and less well known. The prospect of flying in Alaska can be intimidating when your imagination is forced to fill in the blanks. Exactly how big are the mountains, rivers and glaciers? How bad does the weather get? Is an emergency landing a death sentence? If we camp out will we end up as bear lunch? One look at the map and you'll see that they covered a lot of ground. During 5 weeks of mostly great weather they made a lazy clockwise loop around the state, stopping for a few hours or a few days along the way. They hiked, backpacked, kayaked, fished and stalked big game with their cameras.

P/N 13-05272.....

ASA CLASSIC AVIATION FILMS 6-DVD COLLECTORS SET



The incredible journey of Classic Aviation Films takes you from short flights across a field to the screaming hypersonic edge of space as you tour dramatic moments in the history of flight, in this 6-DVD set. Begin with the Wright Brothers in 1909, then follow a 1924 around-the-globe adventure by plane in Volume 1. American engineering takes center stage in Volume 2 and the training of future aviation support is profiled in Volume 3. Jump to shocking WWII footage of the famous and tragic raid on the Ploesti oil fields by B-24 Liberators in Volume 4. Feel the strain U.S. Air Force test pilots are subjected to in Volume 5. Strap in with Neil Armstrong in Volume 6 as he scrapes the upper edge of the atmosphere in the '50s and '60s with the cutting-edge XF and X-15 rocket planes.

P/N 13-05266.....

ASA NASA A RETROSPECTIVE 4-DVD COLLECTOR'S SET



Witness the early years in Astronauts and Friendship 7 as some of America's earliest heroes circle the Earth. Then explore the moon's surface in Assignment: Shoot the Moon and take a giant leap with Neil Armstrong and Edwin "Buzz" Aldrin in The Eagle Has Landed. Experience success and failure during Apollo 13: Houston, We Have a Problem, and watch the future of space exploration unfold in Who's Out There? and The Mission of Apollo/Soyuz. Finally, before beholding the grandeur of the first space shuttle mission in Space Shuttle: A Remarkable Flying Machine, retrace NASA's progress from its inception in 1958 in Small Steps, Giant Strides: 1973. With spectacular film footage, still photographs, and informative commentary, this Collector's Set is a must for anyone who has wondered what's out there.

P/N 13-05267.....

ASA WWII AIR WAR 6-DVD COLLECTOR SET



The story of World War II and America's part in it is best told through the sights and sounds of history as it happened. This is the real war, documented in priceless strings of pictures and streams of sound, as chosen by our film archivists." —Les Waffen, National Archives Since 1935, the National Archives has been responsible for the acquisition, preservation, and public dissemination of the permanent record of the United States government. Now, for the first time, select materials from this inestimable national resource have been assembled to produce WWII: Air War, the DVD boxed set representing an invaluable cinematic recounting of America's airborne involvement during World War II.

P/N 13-05268.....

ROARING GLORY WARBIRDS

This "Hybrid DVD - 5" contains DVD-Video and DVD-ROM bonus items Starring: Host/warbird pilot Jeff Ethell Director: David E. Jackson Genre: Documentary/Docudrama Languages: English



| Description | Part No. | Price |
|------------------------------|----------|-------|
| F6F Hellcat | 13-05168 | . |
| P-51 Mustang | 13-05163 | . |
| P-38 Lightning | 13-05166 | . |
| B-25 Mitchell Bomber | 13-05164 | . |
| F4U Corsair | 13-05167 | . |
| P-47 Thunderbolt | 13-05170 | . |
| P-40 Warhawk | 13-05162 | . |
| TBM Avenger | 13-05169 | . |
| B-17 Flying Fortress | 13-05165 | . |
| A6M5 Zero | 13-05171 | . |
| Complete Set of all 10 DVD's | 13-05172 | . |

BV

AVIATION DVDS – CALENDARS

U.S. FIGHTER JETS - DVD



America's Fighter Jets has been added to the popular Topics Entertainment exclusive video products line. The 2-DVD "Doubleshot" Collector's Set includes: Jets of the U.S. Air Force Climb in the cockpit of an F-15 Eagle or an F-16 Viper and fly off into the wild blue yonder. Experience the world of the U.S. Air Force combat pilot as you fly high over the arctic tundra monitoring Russian bombers and ride along in the cockpit over the sweltering desert of Iraq. Filled with wing to wing flying, strike missions and intensive training, you'll see what it's really like to be a sky warrior. Jets of the U.S. Navy and Marines They say it's the most heart pounding flying in the world with a zero margin for error and few chances to get it right. Journey from a little known base in the Nevada desert to the hostile skies on the other side of the world as you join the real "Top Guns" and streak through the skies in an F-14 Tomcat or F/A-18 Hornet. You'll witness the intense training naval aviators endure long before ever heading to sea and the skill required to make contact with a pitching carrier deck in the middle of the ocean. Total runtime approximately 2 hours. P/N 13-06256

ASA AMERICA'S FIGHTING JETS - DVD



Exciting 4-DVD set — the definitive series on the aircraft that daily stand on guard in defense of freedom. Another title in the popular Topics Entertainment video series, America's Fighting Jets is the definitive DVD set on the aircraft that daily stand on guard in defense of freedom. Feel the G forces and the sweat on your forehead as you streak through the sky in aerial combat. Experience the world of U.S. combat pilots as you fly over the arctic tundra and desert sand in jets of the Air Force, Navy, and

Marine Corps. Watch the intense training and heart-pounding missions of the Top Guns pilots. Journey back in time and examine the amazing jets that protected North America and fought aerial battles during an era of high stakes nuclear stand off. These DVDs feature stunning, archival footage of planes, pilots and crew in action, and offer a fascinating look into the intense world of F-15 Eagles, F-14, F/A-18, Stealth Fighters, Vipers and more. Runtime approx. 180 minutes This 4-DVD box set is an \$80 value if sold separately and includes these exciting DVD titles (45 minutes each) in a beautiful printed package—ideal for gift-giving: * Jets of the Air Force * Jets of the US Navy and Marines * Jets of the Cold War * Unusual Jets P/N 13-05832

ASA FIGHTER PILOTS - DVD



See the training that today's fighter pilots need to fly these exotic aircraft. Get a detailed look at the systems and weapons on the world's most popular multi-mission fighter aircraft. Fly with Top Gun F-14 Tomcats as you're blasted off a modern day super aircraft carrier. Experience the F-16 Fighting Falcon and meet the pilots who made it a true multi-role fighter in the Gulf War. Ride along in the cockpit of the F-15 Eagle during gut-wrenching dogfights and supersonic low-level attacks. Patrol the skies over Iraq in an F/A-18 Hornet as pilots destroy real Iraqi MiGs. 4-DVD set, total runtime approx. 280 min. P/N 13-05837

GHOSTS 2010 CALENDARS



P/N 13-01318



P/N 13-06012

Renowned aviation photographer Philip Makanna has captured the essence of this era in his GHOSTS of The Great War and A Time Remembered -2010, a large-format calendar that features his stunning, air-to-air, color photographs.

Makanna has spent 32 years taking aviation photography to amazing heights. In this edition, his images depict the beginnings of military aviation with Bleriot's wing-warping Model XI, Fokker's "Spider", a web of wires and wood, and Sopwith's simple seaplane racer. The calendar continues through to the advanced aircraft that appeared at the war's end.

Stunning images and an evocative day-by-day history of the aviation (and related) events of the

period combine to describe the beauty, the romance and the tragedy of military aviation's early days.

- * 12 Magnificent Color Photographs from
- * Master Aviation Photographer Philip Makanna
- * Each Month is Suitable for Framing
- * Unique Chronological History of the Aviation Events
- * Individual Aircraft Specifications & Silhouettes
- * Each Page: 20" x 14" Opens to 20" x 28"

Ghosts WWII- 2010 A time remembered.....P/N 13-01318
 Ghosts WWI - 2010 The Great WarP/N 13-06012
 Ghosts of the Skies BookP/N 13-01319
 Ghosts of the Skies II BookP/N 13-01957

SUMMER THUNDER-DVD



This 4-DVD set lets you fly into the danger zone with the Thunderbirds and Blue Angels aerobatics teams. Summer Thunder on DVD: aerial artistry and death-defying demonstrations! 4 Complete Videos Get an inside look at the Thunderbirds F-16 Fighting Falcon. Ride along with the Blue Angels as they perform their aerial acrobatics and trace their history through past show footage and interviews with the pilots. Finally, take a look at the next generation of aircraft with a ride in the F/A-18 Super Hornet. Experience the legendary skill that make the Thunderbirds and Blue Angels the best of the best. Packed with non-stop aerial action, brought to you by the men and women of the U.S. Navy and U.S. Marine Corps. Runtime approx. 140 minutes on 4 DVDs. P/N 13-05834

AVIATION ACTION - DVD



Exciting DVD coverage of top air show teams from around the world packaged together on 4 DVDs. With featured maneuvers from top flight teams from the USA, Canada, France, and Brazil, Aviation Action packs excitement into this incredible high-altitude footage. Arrow Through the Heart pays tribute to the Italian Jet Team, showcasing a perfect aerial performance the day before deadly tragedy struck. And altitude meets attitude in Thunderbirds: Skies of Thunder, the exhilarating point-of-view film that puts you in the cockpit with the Air Force. Finally, The Blues & The Birds demonstrates just what it's like to accompany the Blue Angels and the Thunderbirds in air show performance. Runtime approx. 150 min. P/N 13-05833

MILITARY AIR POWER - DVD



This 4-DVD set gives you an in-depth look at some of the U.S. military's most powerful weapons. The flight action never stops in Military Air Power, a collection of military aircraft videos. Wings of Silver offers up the highs and the "lows" of United States Air Force prowess, on low-level strikes and at heights of 30,000 feet. Wings of Gold showcases high-speed aircraft carrier flight operations and a thrilling demonstration from the Blue Angels. Fly along in the world's most technologically advanced fighter aircraft as you battle an enemy MiG in Thunder from Above. Finally, Nightstalkers exposes the complete story of the U.S. government's military Stealth aircraft program. It's altitude with attitude on DVD. Runtime approx. 240 min.. P/N 13-05836

WINGS OF FREEDOM (4-DVD SET)



An in depth, real-life account of America's finest flight squads of the Air Force, Navy and Marine Corps. Climb into the cockpit with the Blue Angels and Thunderbirds and take off on a whirlwind adventure through the skies at blazing speeds. Cameras placed inside the cockpit provide a first-hand account of what it's like to be one of chosen few who maneuver these planes, as you soar through the skies with highly trained pilots. Learn the history of both teams from their inaugural flight to present day combat battles. P/N 13-06718

2010 AIRCRAFT CALENDARS



The most popular Aircraft calendars in the industry! With outstanding photos of aircraft in flight, this is truly a must for the aviation enthusiast. 6 to choose from.

Military Jets 2010(shown)..... P/N 13-06589
 Ghost Warbirds 2010..... P/N 13-06588
 Helicopter 2010 P/N 13-06590
 Shock and Awe 2010..... P/N 13-06591
 General Aviation 2010..... P/N 13-06592
 Commercial Aircraft2010..... P/N 13-06637

THIS DAY IN WOMEN'S AVIATION PAGE-A-DAY CALENDAR FOR 2010



Each entry in this page-a-day calendar tells the story of a remarkable accomplishment or important milestone in women's aviation. These are available for a limited time only, so order yours today!

P/N 13-06344

ULTRALIGHT VIDEOS—ROD MACHADO PRODUCTS

ULTRALIGHT POWERED HANG GLIDING/ TRIKING



STARTING TRIKING, FREEDOM TO FLY ULTRALIGHT POWERED HANG GLIDERS See how Triking can help you experience the ultimate adventure! Learn what Triking is all about! Introduces you to flying like a bird in an ultralight powered hang glider and how modern technologies and enhanced training techniques have made learning to fly an ultralight trike easier than ever before. (30 min.) P/N 13-01722



BE A PILOT, LEARN TO FLY AN ULTRALIGHT TRIKE Learn what it takes to get your ultralight trike pilot certification. Experience the thrill and excitement of becoming an ultralight trike pilot. Join Instructor John Beaman as he takes Paul Hamilton through ultralight trike training and signing off to solo. Then, join Paul as he takes you through the concepts you need to know to get your ultralight trike pilot certificate. Video covers: First Flights, Student to Solo Practical Maneuvers, Out on Your Own, Building Solo Time, Further Study. (56 min.) P/N 13-01725

HOW TO PREFLIGHT AN ULTRALIGHT TRIKE -

Instructor John Beaman takes you through a simple step-by-step process of preflight for ultralight trikes that is easy to follow. This straight-forward presentation is truly informative and educational for the beginner pilot or an experienced pilot wanting a refresher. John Beaman is an ultralight Advanced Flight Instructor (AFI) and a hang glider pilot. Flying for over 20 years, he has over 2000 hrs of logged flight time. DVD covers: The Wing, Attachment, Trike under-carriage, Trike variations. This DVD includes a wonderful flying segment with great in-air-footage & soundtrack. (56 min) P/N 13-05682



THE ULTRALIGHT TRIKE ODYSSEY, TOP TO BOTTOM

Join us on a powered hang gliding cross-country barnstorming adventure. The odyssey starts near beautiful Lake Tahoe, continues down the snow-capped High Sierra Mountains to Death Valley, then back through the Nevada desert and Sierras to return to Lake Tahoe. Accompany 4 ultralight trike pilots flying for 6 days covering 1400 air miles. You land at 16 different locations including airports, dry lakebeds, and roads. From the "Top" (Mt. Whitney) to the "Bottom" (Death Valley) (48 min.) P/N 13-01727



STARTING TRIKING, FREEDOM TO FLY POWERED HANG GLIDERS - DVD

This program is a great introduction to learning to flying a weight-shift trike, or sometimes called a powered hang glider. Filmed at the Arlington Air Show in Washington State, Monument Valley and Hawaii, "Starting Triking, Freedom to Fly Ultralight Powered Hang Gliders", covers a first scenic lesson experience and moves through a couple of flights to ultimately, expert pilots demonstrating advanced techniques, all with spectacular in-air footage and great soundtrack. P/N 13-05076



MONUMENTAL TRIKING AND FLYING LAKE POWELL - DOUBLE FEATURE DVD

Scenic and breathtaking aerial adventures. Experience the most unique views of Monument Valley and Lake Powell from the air in an ultralight weight-shift trike (powered hang glider) in these two music features - Monumental Triking and Flying Lake Powell. Forty minutes of spectacular scenes and hard hitting music provide great triking entertainment. Great for parties! P/N 13-05078



ROD MACHADO'S INSTRUMENT PILOT SURVIVAL MANUAL

This book is unlike any other book on instrument flying that you have encountered. 232 pages, illustrated with humorous drawings. Excellent for IFR students or as IFR refresher. P/N 13-40330



ROD MACHADO'S PRIVATE PILOT HANDBOOK 2ND EDITION

A serious text written in a fun and witty style. More than 1,200 original illustrations & photos with 50 pgs in full color, ensures this to be a one-of-a-kind manual. You can learn or review by just looking at the pictures. However, the text is laced with Machado's humor, so you will want to read every last word of the 572 pages. Written in the first person, it's as if Rod is sitting next to you, personally explaining all the necessary aspects of flying to make you an informed, confident and competent pilot. Flight instructors will love using the great illustrations with their students. It will also be a favorite for its readability. A book only has value if it's read and understood. For years pilots at Oshkosh, Sun n' Fun and seminars across the country have asked Rod to write a fun and easy to understand book for pilots. Well, here it is folks, perfect to refresh for a flight review, catch up on new rules or for student pilots to pass their FAA knowledge and oral exams.

| Description | Part No. | Price |
|---|----------|-------|
| 2nd Edition Rod Machado's Private Pilot Handbook | 13-05698 | . |
| Rod Machado's Private Pilot Handbook ON Audio CD | 13-06272 | . |
| Rod Machado's Private Pilot Handbook AND Audio CD | 13-06262 | . |



ROD MACHADO'S PRIVATE PILOT WORKBOOK

The new Rod Machado's Private Pilot Workbook is now available. As a programmed learning guide, this book will help prepare you for the FAA Private Pilot Knowledge Exam. The questions are organized to follow the presentation of material, section, as found in the Handbook. Not only will this book prepare you for the Private Pilot Knowledge Exam, it will help you understand and absorb the knowledge necessary for you to fly safely. You can test your knowledge and comprehension in each subject area with numerous weight and balance, performance, and flight planning problems. P/N 13-01502



ROD MACHADO'S INSTRUMENT PILOT'S HANDBOOK

624 pages in full color! This book allows you to learn everything you need for: * The FAA instrument knowledge exam * Your instrument proficiency check * Updating and refreshing your knowledge This valuable one-stop handbook contains the information necessary to: * Fly instruments as a knowledgeable and competent pilot. * Prepare for the FAA instrument pilot knowledge exam * Prepare for the instrument pilot practical oral exam. * Refresh for your instrument proficiency check. * Remain an up-to-date confident instrument pilot. P/N 13-05699



ROD MACHADO'S PLANE TALK

A collection of Rod Machado's most popular aviation articles and stories from the last 15 years. This 456 page book contains articles on topics such as higher aviation learning, the value of aviation history, aviation literature, aviation art and how an artist's perspective can help you better understand weather. P/N 13-03155

ROD MACHADO'S AVIATION VIDEOS & DVD'S

DEFENSIVE FLYING

Rod Machado discusses how pilots can learn to think defensively. Learn about acknowledging your own limitations and a pilot's psychological predators as well as never underestimating aerial enemies. Listen to an actual, hair-raising, in-flight emergency as two professional pilots exercise one of the most important skills in Defensive Flying. This presentation contains many new stories and humor not previously heard on Rod's audio tapes. P/N 13-40305



AVIATION HUMOR

Laugh along with over 2,000 pilots as Rod Machado entertains his audience with some of the best of his aviation stories. As a professional humorist, Rod has always been known for his ability to move people off the edge of their seats and onto the floor with his fast paced, humorous presentation. After so many requests for a video version of his very popular audio tapes, this video of Rod's is sure to be a popular addition to your library. P/N 13-40310



IFR FLYING

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| Continental Engine Manuals | Part No. | Price |
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| C-85, C-90, 0-200 Overhaul Manual | X30010 | . |
| C-85, C-90, 0-200 Parts Catalog (W/Revision Service) | X30011A | . |
| C-125, C-145, 0-300 Overhaul Manual | X30013 | . |
| C-125, C-145, 0-300 Parts Catalog | X30014 | . |
| E-165, E-185, E-225 Overhaul Manual | X30016 | . |
| E-165, E-185, E-225 Parts Catalog | X30017 | . |
| A65, A75 Overhaul & Parts | X30008 | . |
| GO-300 Overhaul Manual | X30019 | . |
| Fuel Injection Overhaul & Parts | X30593A | . |
| IO-360 Overhaul Manual | X30594A | . |
| TSIO-360 Overhaul Manual | X30596A | . |
| O-470 Overhaul Manual | X30586A | . |
| O-470 Parts Manual | X30587A | . |
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| IO-520 Overhaul Manual | X30039A | . |
| TSIO-520 Permold Overhaul Manual | X30574A | . |
| TSIO-520 Sandcast Overhaul Manual | X30575A | . |
| IO-550 Overhaul Manual | X30568A | . |
| GTSIO-520 Overhaul Manual | X30045A | . |
| IO-360 Parts Manual | X30595A | . |
| TSIO-360 Parts Manual | X30597A | . |
| O470 Parts Manual | X30587A | . |
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| "76" Series, Overhaul Manual | 60294-9 | . |
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| O-290-E, D-2 Parts Catalog | PC-102 | . |
| O-320A, B, D, E, IO-320B, E, LIO-320 Parts Catalog | PC-103 | . |
| O & HO-360 Parts Catalog | PC-106 | . |
| O-235C, L2C Parts Catalog | PC-302 | . |
| O-540 Parts Catalog (-1 - O-540-A, -2 - O-540-B, E, G) | PC-115-1 PC-115-2 | . |
| IGO & IGSO-540 Series Parts Catalog | PC-116 | . |
| O-320 A & E Parts Catalog | PC-203-1 | . |
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| IO-540 Series Parts Catalog (Specify -1 or -2) | PC-215-1 PC-215-2 | . |
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| O-360-A Parts Catalog (for wide flange, suffix A models) | PC-306-1 | . |
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| IO-360 Wide Deck Parts Manual (Specify Engine Model) | 13-02052 | . |
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| 140A Parts Catalog | 13-00155 | . |
| 150 Parts Cat., 1970-1977 | 13-00160 | . |
| 152 series Service Manual | 13-01073 | . |
| 170 Parts Cat. 1948 | 13-00165 | . |
| 170A Parts Cat., 1949-1951 | 13-00170 | . |
| 170B Parts Cat., 1952-1956 | 13-00175 | . |
| 100 Series Service Manual, 1953-1962: (150, 172, 175, 180, 182, 185) | 13-00180 | . |
| 172 series Parts Manual | 13-00438 | . |
| Note: This manual is not written specifically for the 120, 140 or 170 Cessna series. However, much of the information it contains is useful to these aircraft. | | |
| 100 Series Svc Man., 1963-1968 | 13-00185 | . |
| 120-140 Owners Manual | 13-00190 | . |
| 140A Owners Manual | 13-00195 | . |
| 170 Owners Manual, 1948 | 13-00200 | . |
| 170A Owners Man. 1949-51 | 13-00215 | . |
| 170B Owners Man. 1952-55 | 13-00220 | . |
| 170B Owners Manual, 1956 | 13-00225 | . |
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| "8" Series Master Parts List, Illus. | 13-00240 | . |
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| J-3 Parts Manual | 13-00365 | . |
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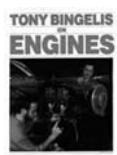
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ASA AIR TRAFFIC CONTROL CAREER PREP - Designed to help readers improve their chances of earning a high score on the FAA's ATC pre-employment test. Includes practice test CD-ROM! Author Patrick Mattson Updates Version 1.3 Update(Update applicable to software (companion CD) only.)

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P/N 13-05845



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COCKPIT PROCEDURES - EFFECTIVE ROUTINE FOR PILOTS AND VIRTUAL AVIATORS - Written by an experienced instructor and pilot examiner, Cockpit Procedures provides a solid understanding of the underlying principles and detailed descriptions of the checklists and routines used in many flight schools. This book is a description of what you should be doing during each phase of flight, including emergencies and training maneuvers. Readers will find it contains a practical definition of airman-ship, good habits to develop, workload management, and even what you should have in your flight bag. This book covers actual cockpit actions and thinking, providing the rationale behind common procedures that are standard practice in the training environment and in the airlines.

P/N 13-06254



101 CROSSWORDS FOR PILOTS - Pilots are inherently drawn to puzzles; problem-solving and playing the "what-if" game are in their nature. They share a fascination for anything and everything about airplanes and flying.

The over 6,000 clues used in 101 Crosswords for Pilots will provide hours of enjoyment for pilots and aviation history enthusiasts, stimulating recall of stored knowledge as well as satisfying that innate yearning to learn more.

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Examples are based around piston engine helicopters and are given from a cockpit perspective. The advanced section is for professional pilots, as well as those who want to know more about helicopters and how they work. It covers turbine helicopters with more advanced systems.

P/N 13-02878



ULTRALIGHT BOOKS



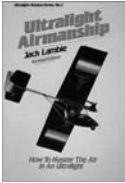
POWERED ULTRALIGHT FLYING (DENNIS PAGEN)

- An excellent book for the beginner, covering basic information such as how to select a suitable ultralight, equipment needed, how to choose a proper site, meteorology and airmanship. Newly revised in 1984. 72 pages and many illustrations.

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ULTRALIGHT FLIGHT (MIKE MARKOWSKI) - Ultralight aerodynamics, stability and control, design and performance, plus a fascinating history of the sport. A down-to-earth explanation of the theory of flight.

P/N 13-16000



ULTRALIGHT AIRMANSHIP (JACK LAMBIE) - Learn how to make the right decision in the air. Written by Jack Lambie, a master aviator; it'll help you "see the wind" and be the best pilot you can be. Filled with diagrams.

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FIRST FLIGHTS IN YOUR ULTRALIGHT/LIGHT PLANE

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A PROFESSIONAL APPROACH TO ULTRALIGHTS - A

Professional Approach to Ultralights offers 256 pages of plain-spoken, real world, ultralight-specific information based on over 25 years of experience. You'll discover invaluable strategies, tips, and an overall guiding philosophy in the purchase, maintenance, and operation of your ultralight that will stretch your spending power and create a safer flight environment. Whether you are interested in ultralights or just want to increase your general aviation knowledge, we know you'll find A Professional Approach to Ultralights a valuable resource.

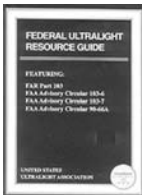
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Carol and Brian Carpenter Book has plain-spoken, real world, ultralight-specific information based on over 25 years of experience. You'll discover invaluable strategies, tips, and an overall guiding philosophy in the purchase, maintenance, and operation of your ultralight that will stretch your spending power and create a safer flight environment. Whether you are interested in ultralights or just want to increase your general aviation knowledge, you'll find the info here. This is a comprehensive and realistic guide for the purchase and operation of Ultralight Aircraft.

P/N 13-06204



FEDERAL ULTRALIGHT RESOURCE GUIDE - This

compilation of FAR Part 103, its accompanying FAA Advisory Circulars (ACs) along with FAA guidance regarding traffic pattern procedures is a must for any ultralight student, pilot or instructor. At last, all of FAA's current ultralight rules, regulations and advisory material are in one easy to reference document. Part 103 is in its entirety including the preamble which offers FAA's justification for creating the rule and what it expects of ultralight operators. AC 103-6 offers guidance about ultralight vehicle operations including airports, air traffic control and weather. AC103-7 offers FAA's rationale in creating and interpreting its ultralight vehicle definition. AC 90-66 offers practical guidance on what to expect when flying into a general aviation airport. 72 pgs.

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THE COLLECTED SAILPLANE ARTICLES AND SOARING MISADVENTURES OF BRUCE CARMICHAEL

- 2nd Printing 2007. U.S. Softcover. 306 Pages. 69 Articles from Soaring, Technical Soaring, OSTIV, Shop Talk, Sailplane Builder, National Soaring Museum, National Free Flight Society, Southern California Soaring Association, and Author's Autobiographical Notes. Sailplane Design Optimization, Sailplane Aerodynamic Design, Future Predictions, Memorials to Departed Greats, Ultralight Sailplanes, Dynamic Soaring, Summaries of 20 years of Sailplane Homebuilders Technical Workshops, Hilarious Accounts of Seven of the Author's Early Soaring Misadventures.

P/N 13-05021



PILOT AND AIRCRAFT LOG AND REFERENCE GUIDE

- Specifically designed for ultralighters. Generic entry pages to log both piloting activity and vehicle information works perfectly for 3-axis, trikes, powered parachutes & more. Includes

areas for personal identification and important phone numbers, ultralight registration program endorsements and memoranda. Reference material includes an ultralight airspace summary, ATC light signals, Part 103, controlled airspace and radio communication information and a wind chill chart. Durable water resistant leather-like finished cover. 68 pages.

P/N 13-00064



ADVISORY CIRCULAR 90-89A

- This FAA Advisory Circular, titled the Amateur Built Aircraft and Ultralight Flight Testing Handbook, was re-written in 1995 with the help of ultralighters to cover all phases of preparation and flight testing of newly constructed non-production aircraft. The AC describes recommended steps to take to confirm that the aircraft, operating facility and pilot are ready for that first flight. A section is specifically devoted to ultralight enthusiasts.

P/N 13-00063



TRIKE FLYERS MANUAL

- This concise manual gives students and pilots invaluable information about how trikes fly. Included the specifics of rigging, inspection, startup and taxiing, ground handling, take-off and landings of all types, straight and level flight, turning, climbs and descents, speed and power balance, stalls, spiral dives, forced landings, low flying, wing tuning and more.

P/N 13-00067



ULTRALIGHT PILOT'S FLIGHT TRAINING MANUAL

- The industry standard used by the majority of ultralight instructors. Designed by author Curtis Hughes to correlate with the knowledge areas covered in the USUA Pilot written and practical examinations. Sections include basic and advanced airwork, traffic pattern, solo, meteorology, Part 103 and the National Airspace System. Student flight training forms and debriefing pages accompany each phase in the manual. 245 pgs.

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THE PILOT TRAINING PROGRAM INSTRUCTOR GUIDE

- This instructor companion guide by Curtis Hughes helps flight instructors whose students are using The Ultralight Pilot's Flight Training Manual as their training program syllabus. 3 major sections cover the organization of the student text, essential elements of instructing, lesson plans and teaching points. Each of the 10 lesson plans follow the student manual and cover background, goals and objectives, preflight preparation, teaching points, in-flight exercises, instructional tips and post flight discussion. Review questions and their answers are found at the end of each lesson. 140 pgs.

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- 2nd Printing 2007. 8 x 11 Softcover. 70 Pages, 44 Illustrations; 24 3-Views. 203

Ultralights, 16 Lights, 18 Sustainer Engines, 56 Self-Launch Engines, Performance Calculations, 10 Prop Locations, and Prop Drag Reduction Methods History and Safety.

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THE COLLECTED AIRCRAFT PERFORMANCE IMPROVEMENT ARTICLES AND LECTURES OF BRUCE CARMICHAEL 1974-2000

- 1st Printing 2007. 14 articles. Oshkosh Appraisal, Laminar Wing & Fuselage Design, Propeller Place, Performance Revolution and Improvement, AR-5 & VMax Probe Study, 7 Lectures on Drag Fundamentals, Body Drag, Realm of Reynolds Lam., Aircraft Search, Lam Aircraft Odyssey, 100% Laminar by Suction. 203 Pages.

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MODERN SUBSONIC AERODYNAMICS BY R.T. JONES-

Explains early theories of lift, aircraft design, and math modeling of fluid motion. Purpose of special airfoils and laminar airfoils are discussed. Wing design, wing sweep, use of winglets, longitudinal stability, and neutral point. Includes a listing of the Oshkosh Airfoil Program for the IBM-PC. R.T. Jones is one of the world's leading aerodynamicists with over 50 years of experience in designing aircraft working at NASA as chief research scientist, and teaching at Stanford University. The book is written for the novice as well as the experienced aerodynamicist. If you have any interest in aeronautics, this book is hard to put down once you start to read. 114 page and over 52 figures. P/N 13-16700



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UNDERSTANDING AND USING AIRCRAFT TUBING (BOB WHITTIER) - While this publication is not a how-to-weld manual, it does contain information on where to obtain such literature. Its aim is to give newcomers to the field of amateur aircraft construction a broad and valuable insight on what steel tubing is all about, to help them work their way safely and productively into this specialized skill. There are many rare illustrations of both technical and historical interest and this makes the book a "good read" for those who are interested in the history of aircraft construction. It also comprises a readable and valuable refresher course for A&P mechanics who have become out of touch with the art of aircraft welding. 36 pages. P/N 13-30625



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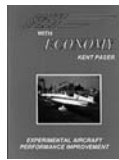
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SPEED WITH ECONOMY (KENT PASER) - This is an excellent reference manual for the amateur aircraft builder who wants to make his plane go faster. Kent Paser has spent over 23 years improving the Performance of his MustangII with many Modifications, each carefully documented and tested. This book chronicles them all, from the exhaust system, intake system, cooling system, propellers, drag reduction, & more. P/N 13-33000



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MASTERING THE E-6B FLIGHT COMPUTER - Mastering the E-6B Flight Computer; a new book by Mike Arman, launches with this history of the humble yet elegant flight computer before delving into a thorough tutorial on its use. Although some student pilots actually fear these devices (and more than a few seasoned pilots have forgotten how to use them), the E6B is a no-fail way to make numerous critical calculations both before and during cross-country flights. You can use the book to learn how to figure everything from time/speed/distance problems to fuel burn, from density altitude calculations to wind triangles and drift. Arman, an advanced ground instructor and pilot, uses many examples in each lesson to illustrate E6B concepts. P/N 13-04709



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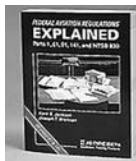
Flying Carpet conveys the joy and boundless freedom of being a pilot, pursuing the irresistible lure of the map. Whether you fly from an armchair or a pilot seat, this book provides a well written, entertaining and humorous look into our own human nature. P/N 13-01949



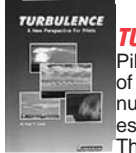
ASA ROTARY WING FLIGHT - Includes discussion on helicopter aerodynamics, common flight techniques, normal flight operations, and precautionary measures, and critical conditions. 122 pages, glossary included. P/N 13-02381



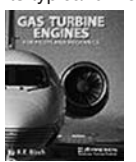
ASA AIRPLANE FLYING HANDBOOK - This official U.S. government guide to piloting aircraft—created by the Federal Aviation Administration—is the essential resource for finding the knowledge and skills to fly all types of planes. It includes an introduction to flight training and official information on ground operations, basic flight maneuvers, slow flight, stalls and spins, takeoff and departure climbs, ground reference maneuvers, airport traffic patterns, approaches and landings, performance maneuvers, and night operations. Pilots will find information on transitioning from small aircraft to more complex airplanes, as well as detailed explanations of emergency procedures. Each topic is coupled with colorful, detailed illustrations to aid the reader. Any pilot who wishes to maintain a current understanding of aircraft operation must read this book. P/N 13-00975



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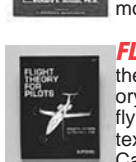
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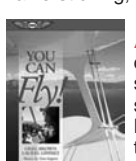
FLIGHT THEORY FOR PILOTS BY CHARLES E. DOLE – For the pilot who needs to expand his knowledge of flight theory. Explains the basics of aerodynamics as they apply to flying an airplane or helicopter. The principal aerodynamics text in USAF courses taught by The University of Southern California. Written for pilots by a pilot. P/N 13-01237



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BOOKS

EAA PUBLICATIONS

FLYING & GLIDER MANUALS

Edited reprints of the original "Building and Flying Manuals" published from 1929 to 1933 by Modern Mechanix and Inventions. 70 pages each.



1929 FLYING & GLIDING MANUAL – Contains information on flight lessons plus building the Heath Super Parasol, Russell-Henderson Light Monoplane and an easy to build glider. P/N 13-40600

1930 FLYING & GLIDING MANUAL – Plans for building a Heath Baby Bullet, set of light plane metal floats, building the Northrop Glider, Lincoln Biplane, Alco Sportplane, plus other tips on building and welding. P/N 13-40605

1931 FLYING & GLIDING MANUAL – Building the "Longster," Georgias Special, a glider and secondary glider, Driggs Dart, the Church Midwing, the Heath Seaplane Parasol and its pontoons, the Northrop Glider and other gliders. P/N 13-40610

1933 FLYING & GLIDING MANUAL – Building the Gere Sport Biplane, Pietenpol Floats, Pietenpol Sky Scout, and Henderson Longster, Also Long Harlequin motor plans, a hydroglider and information on building propellers. P/N 13-40620

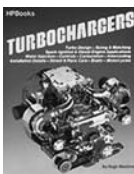


WOOD AIRCRAFT BUILDING TECHNIQUES (120 PAGES) – Excellent resource book on "How To" build or repair wood aircraft. P/N 13-40635



WELDERS HANDBOOK (AUTHOR: RICHARD FINCH, CO-AUTHOR: TOM MONROE)

The ONLY book in the world that teaches modern day aircraft welding. Written for the home workshop beginners, but also contains facts and procedures helpful to factory welding departments. Tells which type of equipment is best for you. Not like any other weld textbook. Current info. Self-teaching. Easy to understand. The author is a certified welder & college welding teacher. Written clearly enough that high-school students can teach themselves how to weld, using the book. 160 pgs: Over 400 photos & drawings. P/N 13-20610



TURBOCHARGERS (AUTHOR: HUGH MACINNES CO-AUTHOR: TOM MONROE)

The ONLY book in the world that fully explains the benefits of turbocharging piston engines. Used by most aircraft and auto factory engineering departments as THE sourcebook for designing turbo systems. Also used by race car and aircraft owners to design better-than-stock turbo installations. Many examples of high horsepower turbo engines. 3rd revision, latest info. 160 pages, 154 photos, 131 drawings, 70 charts. P/N 13-20615



ASA AVIATION INSTRUCTOR'S HANDBOOK

Written by the FAA. Includes principles of teaching and learning, with extensive details on how to pass along aeronautical knowledge and skills. 152 pages, glossary, index. P/N 13-19380



AIRPLANE FLYING HANDBOOK

FAA-H-8083-3 reprint. Completely rewritten and revised in 1999. Introduces basic pilot skills and aeronautical knowledge to student pilots. It is also beneficial to pilots who wish to improve their flying proficiency and aeronautical knowledge, those pilots preparing for additional certificates or ratings, and flight instructors engaged in the instruction of both students and certified pilots. Supercedes AC61-21A Flight Training Handbook. P/N 13-00975

THE GOLDEN AGE OF AIR RACING



S.H. "Wes" Schmid and Truman C. Weaver combine Volumes 1&2 into one book about those who made this age famous. Contains 3-view drawing, many rare photos and comprehensive race results from major events. A must for the air racing fan! P/N 13-40625



AIRCRAFT WELDING (94 PAGES)

Fundamental welding techniques for the building and repair of aircraft, from the pages of Sport Aviation and other sources. 94 pages filled with aircraft welding tips and information. P/N 13-40630



FLIGHT MANEUVERS FOR THE PRIVATE AND COMMERCIAL PILOT (BRAD DEINES)

Covers all the flight maneuvers contained in the Private and Commercial Practical Test Standards for single engine land. P/N 13-40692



INSTRUMENT PILOT FLIGHT MANEUVERS (BRAD DEINES)

Covers all the flight maneuvers contained in the Instrument Rating Practical Test Standards, plus additional training maneuvers. These manuals take each flight maneuver and break it down into an easy to read step by step procedure. Plus, most maneuvers also contain a profile giving the reader a visual description of the flight maneuver. P/N 13-40694



AIRCRAFT SYSTEMS FOR PILOTS (DALE DE REMER)

This book explains the various systems and how they operate. It contains chapters on physics, engine types, theory of operation, propellers and governors, fuels and fuel systems, and power management. It is recommended reading for all pilots and maintenance technicians. P/N 13-40665



VFR RADIO PROCEDURES IN THE USA

This paperback is the perfect tool to teach radio communications in all the different kinds of airspace or to refresh your memory to help you go through your local Class C airspace. Provides you with samples of radio calls that you can expect to hear and transmit at airports in Class A thru Class E. P/N 13-29945



THE MAKING OF THE DAISY MAE

Over 200 pages of solid, easy to understand information on Design and Construction of the author's own personal biplane. Plenty of illustrations. The plans give detailed instructions for constructing The Daisy Mae Aircraft. Materials kit list is available from Aircraft Spruce. See the kits section for plans. P/N 13-04086



VFR COMMUNICATIONS KIT

This aviation communication resource is currently the only aid designed to help you communicate effectively and efficiently during your flights. Learn how to communicate quickly and effectively by making a 'script' for every VFR flight. Each of the 32 templates included in the "Kit" matches a different type of radio communication that may be needed in a VFR flight. After just a couple of flights you will hear the difference! P/N 13-06864



IFR COMMUNICATIONS KIT

This aviation communication resource is the companion to the VFR Communications Kit. It was designed to help you improve your IFR communications with less stress by making a 'script' for every IFR flight. Script assembly instructions, template descriptions, an ample supply of each of the 32 communication templates. After a few flights you will sound like a seasoned pilot! P/N 13-06865



BOOKS

FLIGHT MANUALS BY WILLIAM KERSHNER



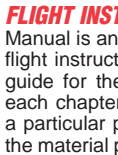
STUDENT PILOT FLIGHT MANUAL – Proves step-by-step ground and flight information for student pilots working on the private certificate. Full of useful information for safe flying and cites common errors by new pilots. Includes more than 280 illustrations, photographs, and charts. 368 pages, paperback. P/N 13-32230

THE ADVANCED PILOT'S FLIGHT MANUAL – Provides information needed by veteran pilots preparing for the commercial written and flight tests. Explains effects of light, drag, thrust, altitude, and temperature on aircraft performance. Includes over 440 tables, charts and illustrations plus a sample commercial written test and answers. 342 pages. P/N 13-32225



FLIGHT MANUALS BY WILLIAM KERSHNER

THE INSTRUMENT FLIGHT MANUAL – Teaches everything pilots need to know to acquire and maintain an instrument rating. Covers airspace, clearances, and altitudes relating to high performance, retractable gear, four place aircraft. Includes ATC procedures, partial panel flying, and weather flying. 296 pages, paperback. P/N 13-32215



FLIGHT INSTRUCTOR'S MANUAL – The Flight Instructor's Manual is an invaluable reference for those working on the flight instructor certificate and serves as an indispensable guide for the new instructor. The book is organized so each chapter can be used as a stand-alone reference for a particular phase of instruction. The information parallels the material presented in The Student Pilot's Flight Manual, The Advanced Pilot's Flight Manual, The Basic Aerobatic Manual, and The Instrument Flight Manual, allowing The Flight Instructor's Manual to serve as a "how to instruct" guide rather than a comprehensive textbook on the basics. Softcover, 8.5" x 11", 503 pages. P/N 13-32220



BASIC AEROBATIC MANUAL – In this manual covering basic aerobatics, Bill Kershner introduces maneuvers in order of difficulty, covering a variety of them in his clear, understandable, and humorous style. The Basic Aerobatic Manual is fully illustrated with the author's own drawings and contains a practical syllabus, a detailed bibliography and an index. Though the manual emphasizes airspeeds and techniques recommended for the Cessna Aerobat, the maneuvers described in the book may be performed in other airplanes certified for aerobatics. P/N 13-32210



REFERENCE BOOKS



DICTIONARY OF AERONAUTICAL TERMS (DALE CRANE) – A 1-volume library, explains more than 5,000 aeronautical terms and hundreds of abbreviations you should know. Almost 600 pages. Emphasis on aeronautical mechanics, engineering, electronics, and production. P/N 13-28700

DUAT AND WEATHER INTERPRETATION HANDBOOK (WILLIAM B. SANDERS & JOHN P. DAVIS)

– get up and running on DUAT and translating National Weather Service reports. Explains how to log on the DUAT, access weather briefings, file, amend, and cancel flight plans, interpret weather dumps, encode and decode locations. P/N 3004A



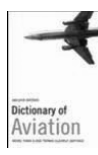
GLIDER FLYING HANDBOOK – The first book by the FAA completely dedicated to all aspects of glider flying and glider operations. Covers certification process and requirements, medical factors, aeronautical decision making, aircraft components and systems, soaring maneuvers and techniques, in-depth weather theory and services and launch & recovery procedures. P/N 13-02589



FLYING LIGHT RETRACTABLES – Follow author LeRoy Cook on a tour of the retractable-gear airplanes you've always wanted to learn more about. Flying the Light Retractable is an informative journey through the development history of each plane with plentiful insight into design considerations, evolutionary changes, advantages and disadvantages of the different models, and background on maintenance issues. Pilots or potential owners will really get a sense of the subtle or not-so-subtle differences; this is like going flying with the author and having the advantage of his eye for detail and sense of observation. Beautiful photographs (some in color) accompany each airplane discussion, covering these aircraft: Mooney M20C, M20J 201/MSE, Beech Bonanza 35, Beech Sierra, Cessna Cardinal RG, Cessna Cutlass RG, Lake Buccaneer, Piper Comanche 180, Piper Arrow, and Rockwell Commander 112TC. P/N 13-05247



AIRLINE CAREERS / INSTRUMENT FLYING



DICTIONARY OF AVIATION (2ND EDITION) – This up-to-date dictionary of aviation and aeronautical English contains more than 9,500 terms and is designed for those specializing in aviation and related industries, including trainee pilots, cabin crews, maintenance crews, ground staff, and other airline personnel. Ideal for professionals, aviation enthusiasts, those who are new to aviation, and those for whom English is not a first language, this practical reference features clear, simple definitions. Sample sentences, pronunciation guides, usage guides, and supplementary information accompany not only basic terms but also specialized technical vocabulary. P/N 13-03482



THE INSTRUMENT FLIGHT TRAINING MANUAL (PETER DOGAN) – Simplifies IFR for the student and updates the veteran, follows the format of a successful training program step by step. Chapters include knowing and using instruments, attitude instrument flying, IFR planning and procedures, VOR, ADF, holding, approaches, emergencies, and more. Review questions each chapter, pertinent FAR's, anecdotes and advice from instrument pilots. 276 pages, 150 illust.. New third edition, completely updated and revised for 1992. P/N 13-33325



INSTRUMENT PILOT FAA WRITTEN EXAM (IRVIN N. GLEIM) – The easiest, fastest, and least expensive method to pass the FAA written examination. All 832 FAA questions, answers next to each question, and outlines of what you need to know for each chapter. Only airplane questions are included. P/N 13-32320



IFR PRINCIPLES AND PRACTICE – Provides information needed by veteran pilots preparing for the commercial written and flight tests. Explains effects of light, drag, thrust, altitude, and temperature on aircraft performance. Includes over 440 tables, charts & illustrations plus sample commercial written test & answers. 342 pgs. P/N 13-29000



INSTRUMENT FLYING (TAYLOR) – This is a practical, readable guide to IFR proficiency for veteran or student instrument pilots. Covers attitude instrument flying, VOR navigation, holding patterns, NCB, VOR and ILS approaches, and emergencies. Weather radar is also covered. Includes a study of accidents which point to common mistakes made by instrument pilots. 3rd edition, revised & expanded. 267 pgs. P/N 3046



VOYAGER (DICK RUTAN / JEANA YEAGER) – Dubbed Aviation's Last First, Voyager is a remarkable story of patriotism, dreams, desire and determination. Read all about what was accomplished in this great, free nation of ours. The Voyager republication makes a superb addition to any library. The Adventure Library has reproduced the Voyager book in a handsome hardcover edition. There are over 352 pgs of text and dozens of photographs that will allow the reader to re-live the world's longest flight. P/N 13-01777



FLIGHT OF VOYAGER CD (DICK RUTAN) – This is a recount of the horrific, horrendous, heroic and humorous moments of the Voyager project through the eyes of the pilot Dick Rutan. On December 14, 1986 Voyager took off from Edwards AFB in California and 9 days later landed at the Edwards, completing the first ever non-stop, unrefueled world flight. This 3-CD set (3.5 hrs) includes a mini journal map of the flight, historic photos, fun facts, and more. P/N 13-01163



OWNING, BUYING OR FLYING THE CESSNA 150/152 – If you are considering buying a Cessna 150/152, or already own one, this book covers it all! Mike Arman is an advanced ground instructor, who uses his knowledge of flying, to impart helpful information to students and experienced pilots alike. Tips on buying, maintaining and upgrading a Cessna 150/152 are plentiful in this useful and entertaining book. P/N 13-03481

BOOKS



ATC & WEATHER: MASTERING THE SYSTEMS (2ND EDITION, BY RICHARD COLLINS) – In this exciting new edition, Richard Collins explains how to work air traffic control an dweather to maximum advantage on every flight. The emphasis is on judgment and the interface between pilot and environment. Addresses both VFR and IFR situations, from flight planning on through to arrival and landing. Soft cover, 172 pgs., indexed. P/N 13-02356

AIR CRASHES (BY RICHARD COLLINS) – What went wrong, why, and what can be done about it - this book examines factors that have led to past accidents so readers can avoid repeating them. Hard cover, 254 pages, indexed. P/N 13-02359



THE SAVVY FLIGHT INSTRUCTOR (BY GREG BROWN) – This book teaches tips and strategies for recruiting new and return flight students, increasing students' skills and customer satisfaction for the individual flight instructor, and for flight schools and managers. The author, a flight instructor since 1979 and an enthusiastic general aviation advocate, exhorts flight instructors to strive for professionalism, giving vital guidance for advancing their careers while helping promote general aviation. Foreword by Sean Elliott, Executive Director of NAFA. 213 pages, illustrated. P/N 13-02382

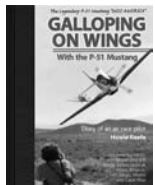
NOTES OF A SEAPLANE INSTRUCTOR: AN INSTRUCTIONAL GUIDE TO SEAPLANE FLYING (BY BURKE MEES) – Gives pilot all the information they need to add a seaplane to their certificate. All the seaplane maneuvers are covered, starting with preflight, through taxiing, takeoff, landing, and postflight procedures; also operating in various water conditions, stability of the aircraft on the water, step-taxi and -turn, and much more. Many illustrations, inspired by the author's original seaplane notebook sketches, are included to further explain the concepts. Soft cover, 160 pages, illustrated. P/N 13-02367



FLIERS (BY KATIE GOODE) – Explores aviators and their art, careers, kinds of flying; airshow performers, skywriter, Alaska bush pilot, airline captains, homebuilt airplane pilot, airforce captain, firefighter pilot, news-helicopter pilot, & more. All stories are in the pilots' own words. Perfect for experienced pilots or those active in "hangar flying," *Fliers* is motivational reading for all and makes an excellent guide to careers in aviation! Introduction by Chuck Yeager. Fully illustrated. Soft cover, 220 pgs. P/N 13-02362



PILOT'S HANDBOOK OF AERONAUTICAL KNOWLEDGE – Written for the applicant preparing for the Private, Commercial, or Flight Instructor Certificates, it is also valuable to flight instructors as a teaching aid. Providing basic knowledge essential for all pilots—from beginning student pilots to those pursuing more advanced pilot certificates—this introduces pilots to the broad spectrum of knowledge needed as they progress through pilot training. This book has all the information necessary for operating an aircraft. P/N 13-00983



ASA GALLOPING ON WINGS - Galloping on Wings with the P-51 Mustang is the action-packed autobiography by air race pilot Howie Keefe. Howie Keefe, USNR (retired), takes you behind the scenes to get a personal glimpse into the amazing and precarious world of air racing. The author's thrill-a-minute account is an inspiring chronicle of his many fascinating adventures from a lifetime of aviation exploits. Ride along at over 400 mph as he describes remarkable events from his early days of training to setting records and winning trophy after trophy in numerous Unlimited Class Air Races at Reno, Cape May, Miami, and more. P/N 13-05651



ASA TEACHING CONFIDENCE IN THE CLOUDS - Today, pilots are faced with a new and challenging era of glass cockpit general aviation aircraft, innovative aircraft design, advances in avionics technology, and changes to instrument procedures and airspace. Students are more technically savvy. Therefore with time/money always at a minimum, a demand exists for highly skilled flight instructors who know the best teaching methods for flying IFR. P/N 13-05652



SAY AGAIN, PLEASE: GUIDE TO RADIO COMMUNICATIONS (2ND EDITION, BY BOB GARDNER) – This new edition adds material on GPS, Land and Hold Short Operations (LAHSO), and has been expanded and updated to reflect current rules and operating procedures. Chapters cover communication etiquette and rules, understanding radio equipment, emergency situations, and IFR communications & clearances. Also included: a concise summary of the FAA's communication facilities and their functions, airspace classifications and definitions, and FAA's recommended shorthand for copying clearances. Soft cover, 208 pages, illustrated & indexed. P/N 13-01064



TIPS TO FLY BY (BY RICHARD COLLINS) – Veteran pilot Dick Collins draws on his extensive experience at the controls of a variety of light aircraft. Text is organized along the natural progression of a flight: through takeoff, climb, enroute, descent and landing. Added focus is placed on high performance singles, twins, and emergencies. This book imparts the kind of flying savvy that takes thousands of flight hours to obtain. Soft cover, 224 pgs, indexed. P/N 13-02383

ROTARY WING FLIGHT – Includes discussion on helicopter aerodynamics, common flight techniques, normal field operations, and precautionary measures, and critical conditions. 122 pages, glossary. P/N 13-00986



MENTAL MATH FOR PILOTS (BY RONALD MCELROY) – If you are simply looking for a way to improve your math skills in the cockpit, then this book is a must read. Mental Math revs up the brainpower to quickly process not only those pesky math questions asked during airline interviews, but expands the mental hard drive to handle a wide range of practical number problems in flight. Soft cover, illustrated, includes index & glossary, approximately 117 pages. P/N 13-03201



THE PERFECT FLIGHT (2ND EDITION, BY RICHARD COLLINS) – In this landmark book, Taylor provides VFR pilots with an emergency reserve of instrument flying techniques and procedures they need in order to cope with an dsurvive an inadvertent encounter with IFR conditions. Soft cover, 138 pgs, illustrated & indexed. P/N 13-04189



THE ART OF FLYING (BY ROBERT BUCK) – Robert Buck discusses how the smart pilot sharpens and uses his "feel" for the airplane; how the best pilots fine-tune their knowledge and skills to plan shrewdly, command confidence, and handle their aircraft smoothly. Stresses the need for pilots to be in command of their flying. Hard cover, 186 pgs, indexed & illustrated. P/N 13-02354



FROM THE GROUND UP - This full-color illustrated aviation ground school textbook is the most popular aviation text in many countries throughout the world. Rewritten for U.S. operations and procedures, this book is often referred to as the "bible" for ground school flight training and is more comprehensive and informative than the Aeronautical Information Manual (AIM). From the Ground Up offers a wide range of advice, techniques and instruction on practically every aspect of flying, supported with beautiful color illustrations and photographs throughout. A sample Private Pilot FAA Knowledge Exam concludes the book. Pilots will find everything they need to know within its covers. Soft cover, full-color illustration, glossary, indexed, 352 pages. P/N 13-04422



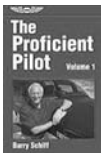
OWNING, BUYING OR FLYING THE CESSNA 150/152 - If you are considering buying a Cessna 150/152, or already own one, this book covers it all! Mike Arman is an advanced ground instructor, who uses his knowledge of flying, to impart helpful information to students and experienced pilots alike. Tips on buying, maintaining and upgrading a Cessna 150/152 are plentiful in this useful and entertaining book. P/N 13-03481



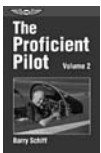
ASA - POWERED PARACHUTE FLYING BOOK - This new FAA handbook introduces the basic pilot skills and knowledge essential for piloting powered parachutes. It benefits student pilots just beginning their PPC endeavors, as well as those pilots wishing to improve their flying proficiency and aeronautical knowledge, and flight instructors engaged in the instruction of both students and licensed pilots. P/N 13-05761



BOOKS



THE PROFICIENT PILOT (BARRY SCHIFF) – The popular text on airmanship in a newly revised and enlarged edition. Covers all aspects of the subject accurately and concisely, using diagrams, tables, and graphs to make complex information clear. 320 pages. 100 illustrations, hardcover. P/N 13-23100



THE PROFICIENT PILOT, VOL.2 (BY BARRY SCHIFF) – Schiff disposes of popular misconceptions about cruise control, flying in turbulence, coping with wind shear, and obtaining meaningful performance data. Soft Cover, illustrated, indexed, 328 pages. P/N 13-01443



FLYING WISDOM: THE PROFICIENT PILOT, VOL. 3 (BY BARRY SCHIFF) – Diverse topics such as Deep Stalls, Black-Hole Approach, myth of The Downwind Turn, expectations vs. reality, CRM, and a short course that effectively describes the principles involved in flying jet airplanes. Also flying tips for fun & profit. Soft cover, 360 pgs, illust., indexed. P/N 13-01444



A PILOT'S GUIDE TO AIRCRAFT AND THEIR SYSTEMS (BY DALE CRANE) - Technological advances, accompanied with additional complexities, demand that today's modern aircraft be operated exactly the way designers intended. This book furnishes pilots and armchair aviators with explanation and insight into what the aircraft, powerplant, and each of the systems do. 320 pgs. P/N 13-02422



CONFIDENT FLYING—A PILOT UPGRADE (BY RICHARD COLLINS & PATRICK BRADLEY) – In this unique book, the authors' reflective insights provide the basis for a program of risk management, sound decision making, and judgment. Richard Collins and Patrick Bradley share both good and bad decisions they've made throughout their flying careers. Through their personal anecdotes, stories, and familiar writing style, readers will absorb the information without even realizing they're being taught some of

the most valuable lessons in their aviation career. Soft cover, 268 pages, indexed. P/N 13-02358



FLYING IFR, 4TH EDITION (BY RICHARD COLLINS) – invaluable discussions on instrument airmanship, weather analysis, flight planning and decision making, handling equipment glitches, and that critical survival skill — partial panel flying — are all presented for the sole objective of better preparing you to fly on IFR flight plans. The only tests this book prepares you for are those encountered in flying actual IFR. Soft cover, 230 pages, indexed. P/N 13-02363



FLYING THE WEATHER MAP (BY RICHARD COLLINS) – Following an in-depth discussion of the logic of aviation weather and basic theory, Collins takes you along on 46 actual cross-country flights. The anecdotes provide a valuable education in weather interpretation, forecasting and decision making. Soft cover, 234 pages, illustrated, indexed. P/N 13-02386



AVIATION MECHANIC HANDBOOK, 5TH EDITION (BY DALE CRANE) – A core reference manual for mechanics, aircraft owners, and pilots, this book compiles specs from stacks of reference books and government publications into a handy, toolbox-size guide. All the information critical to maintaining an aircraft. P/N 13-02366



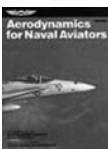
CHECKLIST FOR SUCCESS (BY CHERYL CAGE) – This book contains the same Pilot Interview Preparation Program that has been used to prepare pilot clients since 1988. Checklist was written to assist pilots of any experience level with the pilot interviewing process. It has been used successfully by "beginning" pilots looking for their first pilot position, retired military pilots looking for commercial cockpit positions, and commuter & displaced airline pilots looking for a job with a major airline. P/N 13-28701



ALASKA JUSTICE BY M.D. KINCAID - Alaska Justice is a thorough Alaskan adventure, packed with flying action. Trooper Blake uses Bush planes -- on wheels, floats, and skis -- instead of patrol cars, to seek justice in the Last Frontier. Blake fights blizzards, grizzly bears, and crazed-killers in this 100,000 word feel-good novel, which is enjoyed by pilots and passengers alike. The author, Mike Kincaid, referenced twenty of years of notes as a Trooper/Pilot to base this novel and actual events. Here's what 747 Captain Dave Glasebrook just wrote about Alaska Justice: "That was one adventure after another after another. Whew! Definitely action. That was just like Indiana Jones with no time for popcorn or restroom breaks." P/N 13-05271



NONDESTRUCTIVE & ULTRASONIC TESTING FOR AIRCRAFT – Preparation, procedures, inspections, applications, and testing methods are discussed in this reprint of two FAA Advisory Circulars. Effective 1975; 96 pages. P/N 13-02342



AERODYNAMICS FOR NAVAL AVIATORS – This textbook presents the elements of applied aerodynamics and aeronautical engineering which relate directly to flight training and general flight operations. Originally published by the U.S. Navy. 432 pages. P/N 13-01060



AVIATION WEATHER – Earth's atmosphere, common IFR procedures, high-altitude weather and special area weather considerations are thoroughly discussed. Use with Advisory Circular 00-45E, Aviation Weather Services. Many of the FAA Knowledge Exam weather questions are pulled from this text. Effective 1975. 234 pages. P/N 13-01062



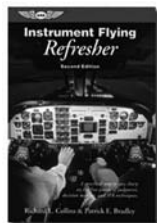
ASA AVIATION WEATHER SERVICES - Last revised in 1999, this new Advisory Circular 00-45F edition supersedes AC 00-45E, features full-color illustrations throughout, and full coverage of weather-related tools to assist every pilot's flight planning and in-flight decisions. P/N 13-05269



AVIATION WEATHER COMBO PACK – Aviation Weather and Aviation Weather Services are packaged together for greater savings. Also includes laminated weather code key cards, detailing the TAF/METAR abbreviations. P/N 13-02341



BIRDFLIGHT AS THE BASIS OF AVIATION - OTTO LILIENTHAL - It's the work of a creative genius whose observation, analysis, ingenuity and daring laid the foundation for the development of aviation. After a comprehensive scientific study of how birds fly, Lilienthal recognized the superiority of curved wing surfaces. He then developed a theory of flight, and designed and built a series of gliders - bridging the gap between those who dreamed of flying and those who flew. Learning of Lilienthal's fatal gliding accident in 1896, the Wright Brothers became inspired to investigate "the problem of human flight." They carefully studied his work, developed their own theories and designs, and invented the airplane. Author: Otto Lilienthal Cover: Soft Pages: 151 P/N 13-01488



INSTRUMENT FLYING REFRESHER (BY RICHARD COLLINS & PATRICK BRADLEY) – In this unique book, veteran IFR pilot Richard Collins takes the right seat beside Patrick Bradley to demonstrate effective ways to grasp & solve IFR problems and eliminate uncertainties that may plague even current IFR airmen. Carefully examines airline and general aviation accidents to point out how threatening situations can be avoided or safely confronted. P/N 13-02364



PILOT EXAMINER'S HANDBOOK – This FAA reprint is mandatory for Designated Plot Examiners (DPEs) and great for Flight Instructors. Outlines performance and procedures for all checkrides and explains examiner responsibilities, limitations and privileges. Effective 1976; 196 pages. P/N 13-02340

BOOKS

TIPS FOR SAFETY FLYING



TAMING THE TAILDRAGGER (JOHN F. BALL) – A flight manual for tailwheel aircraft, basic enough for the student pilot, thorough enough for the advanced. Includes performance figures and limitations for the classic planes, plus techniques and procedures for short- or soft-field operations, maintenance, transitioning from tricycle gear, more. 96 pages. Paperback.

P/N 13-27100.....

AIRPLANE TALK (CAPT. GLENN CARLSON) – New 2nd edition by Capt. Glenn Carlson. Thoroughly covers communication procedures for all aspects of both VFR and IFR flight, and how pilots should properly use the air traffic control system. 266pp. Illus.

P/N 13-29100.....



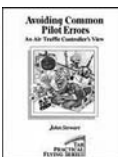
MAKING PERFECT LANDINGS IN LIGHT AIRPLANES (RON FOWLER) – No matter how long you have been a pilot and no matter what degree of skill you have attained, if you are to land perfectly you must exert 100% effort toward that task. Many pilots resign themselves to imperfect landings merely because they are unaware of the simple fact that even the pros must work at each landing.

P/N 13-23500.....

AVOIDING COMMON PILOT ERRORS (JOHN STEWART)

– The author discusses errors that pilots frequently make, particularly in controlled airspace, and advises how to fly more safely. Also explains new FAA control equipment and ATC procedures that will save you time and money during a flight.

P/N 3033.....



SUNSET TO SUNRISE – Sunset to Sunrise by David Robson. Night flight is one of the most pleasant forms of flight. Every city looks good at night. The sparkling lights, stars, moon and reflections combine to produce a spectacle many only dream about. However, night flight requires different technique, perspective, and considerations than day operations. The aircraft must be flown with reference to the flight instruments, and the outside visual references take on new importance while at the

same time providing different illusions. Night flight can be a test for even the most experienced pilot.

P/N 13-03285.....



INSTRUMENT PILOT FLIGHT MANEUVERS – Provides a thorough explanation of each maneuver and task called for in the FAA's Instrument Practical Test Standards (PTS). The latest update improves upon its sound platform with even more information for the pilot seeking an instrument rating. Both the 1998 and oral PTS are included so that the manual reflects the current standards you will encounter during the check-ride. In the intervening years, the FAA has changed

some terminology in the PTS, and this fine-tuning is also present in this, the third, edition of the manual. With GPS and RNAV navigation much more commonplace, these inclusions have also been made by the FAA. In addition to the technical changes, the publisher has also improved the graphics to better illustrate each maneuver, while retaining those maneuvers that the FAA had deleted from its Instrument Flying Handbook for greater depth. A cross reference of applicable FAA publications to each maneuver and task helps with further research. The spiral-bound manual is easy to use, clipping onto a standard, approach plate-size kneeboard for flight.

P/N 13-02733.....



IFR: A STRUCTURED APPROACH – For the instrument pilot seeking to upgrade his or her skills, John C. Eckalbar's IFR: A Structured Approach provides compelling insights. Eckalbar, a well-regarded instructor for the American Bonanza Society, offers tips for "flying by the numbers" and specific numbers (power settings, airspeeds, and descent rates) for flying GPS approaches in particular. If you've been stumped by circling approaches or DME arcs, he also has much to say on those topics, as well as a two-part look at mastering the ILS. If one book could help make the leap from a bit player to a skilled conductor of instrument flight, this is it. Hard cover, 250 pages. Illustrated, black & white photos, chart excerpts.

P/N 13-04566.....

HOMEBUILT AIRCRAFT

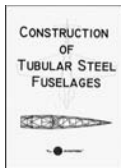


RE-INVENTING THE AIRPLANE (BURT RUTAN) – This book is an outstanding compilation of history about Burt Rutan, his family, his airplanes, people who built and flew the airplanes he designed, plus the incredible Voyager story. An interesting look into a true American aviation genius. Illustrated. Hardback. (Vera Rollo)

P/N 13-15165.....

FLIGHT TESTING HOMEBUILT AIRCRAFT – Defines flight testing as a four phase (pre-flight, first flight, envelope expansion, and performance), step-by-step process of learning the limitations of an aircraft, defining and eliminating problems, and determining aircraft capability and optimum flying techniques. This book is a must-have for all homebuilders, 189 pgs illustrated.

P/N 13-40685.....



CONSTRUCTION OF TUBULAR STEEL FUSELAGES BOOK – This book provides step by step instructions on how to construct a perfect tubular steel fuselage. It is the result of hundreds of hours of development in the shop doing rapid prototyping of perfectly symmetrical and dimensionally accurate fuselages and assemblies, without special jigs.

P/N 13-03707.....

CHOOSING YOUR HOMEBUILT "THE ONE YOU'LL FINISH AND FLY" (KENNETH ARMSTRONG) – Helps answer the three crucial questions every builder faces: Can you build it, can you fly it, and can you afford it? Chapters describe the relative merits of plans, kits, and materials packages, as well as what to ask the manufacturer and what to consider when buying a completed homebuilt. Other sections include a comprehensive section on engines, auto gas and avionics, plus pilot reports on 22 homebuilt designs including photos and specifications. 325 pages.

P/N 13-31115.....



YOU WANT TO BUILD AND FLY A WHAT? (DICK STARKS) – This is the boisterous, very funny, wildly exaggerated true story of Dick Starks, a math teacher who goes through the agonies and delights of learning to fly, buys an old Cessna, and then goes on to build a replica of a WWI Nieuport fighter plane. This is a book about the fun of flying and the joy of sharing that fun with family and friends.

P/N 13-15170.....

MODERN PROPELLER AND DUCT DESIGN – This book tells you the theory of propeller aerodynamics and how to size a propeller. The program allows you to optimize a propeller for a given horsepower and airspeed. Variables such as number of blades, pitch, airfoil, thickness, air density, thrust coefficient, prop efficiency, and airspeed are all explained. Discussion of various prop materials and duct theory is also included. (Martin Hollman) P/N 13-15175.....



STRESS WITHOUT TEARS (TOM RHODES) – This is a primary discussion, not an advanced text by an experienced aircraft stress analyst. Math and other theory is introduced, but only as necessary to master the subject matter. Stress analysis is presented in as simple terms as possible without complex scientific jargon and is done so in a readable and enjoyable manner.

P/N 13-15180.....



CHASING LEWIS & CLARK ACROSS AMERICA BOOK – Enjoy the breathtaking beauty of the Lewis and Clark trail from an open cockpit plane as you float over the same route the Corps of Discovery traveled 200 years ago. Stunning photographs of mighty rivers, plains and mountains—coupled with an adventure story—reveal America's soul.

Professional photographer and pilot Ron Lowery flew an open-cockpit airplane, that he and his son built, over 14,000 miles across America. Along with co-pilot and author Mary Walker, they landed at airports large and small...and not at all. Their adventure comes alive as one reads of the dangers and challenges they encountered on their journey. With the unique plane acting as ambassador, readers will share their cultural experiences as they dined with American Indians, flew aerial ballets with crop dusters, and landed on remote ranches. Through excerpts from the Lewis and Clark journals and visits with re-enactors, one will relive the greatest American adventure. Book is 10 x 13 inches, full color, 168 pgs.

Book..... P/N 13-04562.....

DVD..... P/N 13-04563.....

Book/DVD Combo..... P/N 13-04564.....



ANATOMY OF A SPIN – This thoroughly researched and documented text provides insight to all the major spin categories; upright, inverted, single and multi engine. Recovery techniques varies with aircraft design. Learn why ailerons may be of help in spin recovery, why some aircraft spin readily while others are reluctant to spin.

P/N 13-02080



IFR PRINCIPLES & PRACTICE – This concise, thorough, and unique book provides a singular presentation of a difficult subject, with many helpful diagrams. This book includes practice exercises and score sheets to enhance your learning and allow you and your instructor to quantify your progress.

P/N 13-02081



MOUNTAIN FLYING – Organized to follow the sequence of typical flight, the book preflight, takeoff, enroute, arrival procedures, and landing. The author discusses fuel management, the magnetic compass, the effects of high-altitude on weight and balance, and the airspeed indicator.

P/N 13-02082



ASA FLYING AMERICA'S WEATHER – Despite quantum leaps in cockpit technology, weather radar and forecasting techniques, flying often boils down to "someone sitting in a cramped cockpit somewhere, trying for all he's worth to figure out what meaning those clouds up ahead have for him." An understanding of how larger climatic forces affect each region's specific patterns can give that lone pilot the edge, and this edge is what Flying America's

Weather is all about. This illuminating book takes us on a pilot's tour of our nation's weather, from the brilliant blue of the Hawaiian Islands to the black and gray monster that is the Nor'Easter — and everything in between. It shows a grand and diverse country, dominated regionally by grand, diverse, and understandable patterns of weather. Flying America's Weather combines decades of climate research with hands-on experience, an awareness of larger weather forces at work on local geography, and critical examples of how weather contributes to aviation accidents. It focuses on what weather we can expect from the areas we fly in, yet provides a deep understanding of why it's there. In doing so, Flying America's Weather becomes an indispensable guide for all pilots, wherever they fly.

P/N 13-04065



ASA PILOT MEDICAL HANDBOOK - Indispensable for pilots and other aviation workers, this comprehensive guide contains the authoritative word on pilot health and flight safety. Being a safe pilot involves more than checking the weather, filing a flight plan, and performing a preflight inspection. It also requires that pilots assess their physical and mental health and evaluate a slew of situational factors.

P/N 13-06669



A PILOT'S GUIDE TO SAFE FLYING – This unique book is designed to help pilots avoid the pitfalls that have trapped many unwary pilots over the years. There is nothing else like it on the market today. This manual has received praise from reviewers around the world including the AOPA Air Safety Association, the National Association of Flight Instructors, and the Canadian Owners and Pilots Association. Author: Sander Vandeth

P/N 13-04063



178 SECONDS - THE POCKET BOOK THAT COULD SAVE YOUR LIFE – This booklet has been designed to bring together all the preflight planning elements in A Pilot's Guide to Safe Flying in the form of a series of questions, as a reminder to pilots of the issues that need to be considered prior to a flight. There is nothing like it on the market. Pocket Size.

P/N 13-04239



THE GEE BEE RACERS: A LEGACY OF SPEED - By: Charles Mendenhall The only work ever available which covers the entire line of Granville Bros. projects including all models of their sport and racing planes, as well as the drawings for a proposed Indy race car. Includes coverage of recent flying replicas and a discussion of the aerodynamic knowledge base in the 1930s, when these aircraft were built and cautiously raced, versus 1994 when the replicas are flown in aerobatic demos.

P/N 13-06754



LESSONS FROM THE LOGBOOK – Piloting techniques on diverse topics in this collection of stories from an experienced flight instructor's logbook. The book is organized to reflect all the phases of flight: preflight, departure, en route, and arrival, and concludes with a section on recurrent training. It provides piloting techniques on such diverse topics as night flying; what to do when you get stuck above or below a cloud deck; how to handle in-flight emergencies; evaluating real-life takeoff performance; pursuing a path to perfect flying; and much,

much more.

P/N 13-05019



ADVENTURES OF A P38 ACE HERBERT ROSS – Adventures of A P38 ACE is the life story of Colonel Herbert E. Ross - United States Air Force - Retired. This book of Memoirs written by Colonel Ross covers his Military Career as well as his life long love of being a Pilot. Colonel Ross has included detailed information on the Aircraft he flew as well as his amazing life story in a captivating and entertaining fashion. Over 200 pages with photos. A must read from a longtime Aircraft Spruce customer!

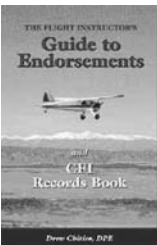
P/N 13-04221



INTERNATIONAL AIRCRAFT DIRECTORY

AP – Whether you're a pilot or an aviation enthusiast, the International Aircraft Directory from the editors of Plane & Pilot magazine is sure to have all you're looking for in an easy-to-use reference tool for checking facts about a particular model, identifying unusual aircraft, and recognizing trends in airplane design. Now in its third edition, the book features detailed descriptions and photographs of more than 500 airplanes from around the world, including single-engine, multi-engine, jet, classic antique, homebuilts, kit-builts, sailplanes, motorgliders, warbirds, and military aircraft flown by civilian pilots. The directory lists airframe and powerplant information and historical facts as well as standard data and performance specifications such as a horsepower thrust, weight, speed, and range. The 304-page softcover book.

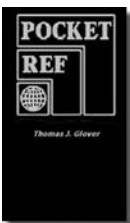
P/N 13-04144



THE FLIGHT INSTRUCTOR'S GUIDE TO ENDORSEMENTS – Every endorsement the active Flight Instructor needs to provide clear, concise and accurate endorsements for their students. Compiled by an FAA Designated Pilot Examiner, it includes notes and guidance to the instructor. In addition, there are sections to record the endorsements made which complies with the CFI Records Rule and a TSA training log, both of which meet regulatory requirements. A BFR/ IPC section serves as a reminder to keep clients coming back to you for repeat business.

Number of Sample Endorsements for: Student Pilot 9 • Recreational Pilot 8 • Sport Pilot 6 • Sport Pilot CFI 5 • Private Pilot 3 • Commercial 3 • CFI 4 Instrument 3 • Multi-engine 2 • Misc 12

P/N 13-04181



POCKET REF (THOMAS GLOVER) 3RD EDITION –

This great little book is a concise all-purpose reference featuring hundreds of tables, maps, formulas, constants & conversions AND it still fits in your shirt pocket! Goes where you go! • Pocket Ref • 3rd Edition by Thomas J. Glover • Over 200 new pages and virtually thousands of updates! • Index for information access. • This book has been in print since 1989 and is now in its 3rd Edition. • It has also gone through numerous printings in each edition.

P/N 13-19342



THEY FLEW PROUD – They Flew Proud crisply

tells the story of the Civilian Pilot Training Program through the Army Air Force Cadets at Grove City College (PA.) and the Grove City Airport where the flight instructors (including Gardner Birch) trained the cadets to solo. Across the U.S., more than 435,000 men and women were taught to fly under the CPTP in pre and post WWII. In Grove City, the 8th Detachment's 486 students received almost 5,000 hours of instruction, and then went forward to serve their nation in WWII. 192 pages.

P/N 13-05672



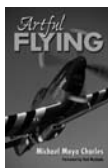
AVIATION MAINTENANCE TECHNICIANS BOOK (DALE CRANE) – This textbook series provides the most complete, up-to-date texts for A&P students and educators. The curriculum meets 14 CFR Part 147 requirements and includes all of the aeronautical knowledge required for the FAA Knowledge Exams for AMTs. They are written and designed for at-home, classroom, or university-level training. Each comprehensive textbook includes colored charts, table, and illustrations throughout, in addition to an extensive glossary, index and additional career information. A study guide is included within each textbook in the form of Study Question sections, with Answer keys printed at the end of each chapter. These can be used for evaluation by an instructor or for self-testing. These textbooks are all inclusive; no separate, inconvenient workbook needed by the student / instructor.

General textbook.....P/N 13-00574
Airframe vol. 1.....P/N 13-00581
Airframe vol. 2.....P/N 13-00582
Powerplant.....P/N 13-00583



EVERYTHING EXPLAINED FOR THE PROFESSIONAL PILOT BOOK – 430 pages (8 1/2 x 11) crammed with virtually every scrap of information essential and necessary for every pilot. All that knowledge you wish you could have at your fingertips all the time, and many things you never even thought about. Fun to read and yet excruciatingly detailed. The ultimate reference book that explains all aspects of

aviation from proops to heavy jets P/N 13-03231



ARTFUL FLYING BY MICHAEL MAYA CHARLES – Michael Maya Charles identifies a path through which any pilot can seek to transform his flying skills from pedestrian to truly sky-worthy, and gain greater insight in the process. By drawing upon Eastern philosophy, Charles introduces pilots to a way of approaching flight with a “beginner’s mind.” Not only does this practice increase a pilot’s enjoyment of flying, but it also makes that pilot safer by increasing

situational awareness and mental flexibility in times of crisis. The book is layered with many examples that feature beginning students to experienced aviators, flying gliders to rotocraft and sport airplanes to heavy jets. Hardcover book, 323 pages. P/N 13-04015



FUNDAMENTALS OF SAILPLANE DESIGN – This book, the definitive text on sailplane design, grew out the authors work with the Akaflieg Braunschweig as well as his popular introductory course in sailplane design. To make the material accessible to pilots without an engineering background, an emphasis is placed on physical understanding and visualization. Mathematics is held to a minimum. Because it draws on decades of experience developed at the German Akafiegs, the material will help the experienced engineer to quickly develop a practical understanding of the considerations that go into the design of a high-performance sailplane. The design data tables and three-view drawings have been expanded to include entries for over 150 aircraft. CONTENTS: Volume 2 P/N 13-00361



MAYDAY MARION F. STURKEY – MAYDAY examine airline accidents caused by mechanical failure fire, mid-air collision, terrorist hijacking, and human error. Also, accidents caused by sabotage, suicide, fuel exhaustion, mistaken identity shoot-downs, spatial disorientation, hazardous weather, controlled flight into terrain, and other aerial perils. The author is a former military and commercial pilot. Readers embark on a brutally accurate journey through Commercial Aviation History. They re-live the airline accidents which have marred man’s conquest of the skies. P/N 13-04017



MID-AIR COLLISIONS BY MARION F. STURKEY – Offers readers brutally authentic accounts of collisions involving Military aircraft and Civil transports. Each chapter is a window through which readers re-live the aerial crisis, the voice transcript (where available), the collision, the investigation, and the Probable Cause. The author is a former military and commercial pilot, and this is his eighth book. He eliminates the fog of aviation techno-jargon and explains each accident in simple and easy-to-understand layman’s terms. P/N 13-05663



MASTERING GPS FLYING (BY PHIL DIXON & SHERWOOD HARRIS) – GPS mastery is becoming as necessary to pilots as basic stick and rudder skills. Mastering GPS Flying is a set of 6 flight lessons and 10 background chapters that give you all you need to become comfortable and proficient with GPS, no matter what your level of experience. Fully illustrated throughout with more than 50 charts, photos, and diagrams. P/N 13-03084



THE WICHITA 4: CESSNA, MOELLENDICK, BEECH AND STEARMAN – New perspective into Clyde Cessna, Walter Beech and Lloyd Stearman. Includes activities of J.M. “Jake” Moellendick, the “Father” of aviation in Wichita. These intrepid entrepreneurs, self-taught in their respective skills, developed an industry in the design and production of airplanes. From humble, primitive beginnings they built empires while establishing ground rules governing the operations of that industry, to include production methods, standards and engineering practices. Their actions brought recognition to Wichita, Kansas, as “The Air Capital of the World.” But rifts between them brought separation, as they went their separate ways to build that fledgling industry into the giant it became. The Wichita 4 provides a look at the factors leading these pioneers into their chosen career endeavors, what attracted them to flying, then brought them together to mutual friendship and affiliation in pioneering airplane business ventures and finally to separate paths leading to their own outstanding individual successes. 160pgs, 280 photos, paperback. P/N 13-00631



THE \$100 HAMBURGER – A Guide To Pilots’ Favorite Fly-In Restaurants - The burger is back and juicier than ever! This Second Edition of the little book private pilots live, and eat by, features over 1,000 pilot-recommended places to land for that meal at the end of the flight. The author rates restaurants in all 50 states and even includes 6 foreign locations including France, England and Germany. Just what every pilot needs to plan a fun outing in the plane and get some good food too. ?All reviews are from fellow pilots who’ve actually been there, chowed down, and awarded each place from one to five “burgers”. Tells everything, location, service, price, transportation, dress codes & hours of operation. P/N 13-03454



THE \$500 ROUND OF GOLF-A GUIDE TO PILOT-FRIENDLY GOLF COURSES – Here’s a combination travel, golfing and pilot guide all in one! The man who brought you the \$100 Hamburger turns to golf (a pilot hobby almost as popular as eating) and lists the 500 best places to land for a quick round of golf — every single one recommended for pilots. Covers all 50 states. Includes runway info, service, location, style, quality, price, transportation, operations & more. 50 bonus winning weekend golf tips included. P/N 13-03455



TURBINE PILOT’S FLIGHT MANUAL (BY GREGORY BROWN AND MARK HOLT) – Truly a text designed to help move the aspiring professional pilot up into the turbines. The book basic yet thorough approach makes no assumptions about the readers prior knowledge on the subject. P/N 13-00637



IT’S ALL UP IN THE AIR BY DON SUMMERS - It’s all up in the air spans the aviation career of Don Summers. Told with unique insights and perspective, his story takes the reader through the ups and downs of more than forty years of flying...as bomber pilot, bush pilot, air traffic controller, corporate and charter pilot. This is a trip through the critical, formative years of aviation piloted by a man who grew with the industry. His adventurous life has been up in the air. P/N 13-04020



ROTORCRAFT FLYING HANDBOOK (FAA HANDBOOK) – The Basic Helicopter Handbook (Advisory Circular 61-13B) has been rewritten and renamed the Rotorcraft Flying Handbook. Written for the applicant preparing for the private, commercial, or flight instructor certificate with a helicopter or gyroplane class rating, the book is also valuable to flight instructors as a teaching aid. Both aeronautical knowledge and skill for operating rotorcraft are covered. The book is broken into 2 sections: One dedicated to helicopters, and another dedicated to gyroplanes. Each section includes chapters covering aerodynamics, flight controls, systems, the rotorcraft flight manual, flight maneuvers, emergencies, and aeronautical decision making. In addition, the helicopter section includes chapters on weight and balance, performance, attitude instrument flying, and night operations. P/N 13-00735



THE AEROELECTRIC CONNECTION A Guide to Theory, Operation, Design and Fabrication of Aircraft Electrical Systems, Revision 12. Written by Bob Nuckolls with over 50 years of hands-on experience in electronics and aircraft electrical systems. 304 pages of 18 chapters plus Appendix are topped off with a discussion of the poor man’s approach to system reliability. Appendix Z offers dozens of variations for tailoring an electrical system to the builder’s project and mission requirements. P/N AEC001





AVIATION BOOKS BY HOWARD FRIED: INSIDE THE FAA – Fried has flown everything from 40 horsepower Cubs to Citations and Lear Jets, from gliders to float-planes. Fried founded a very active flight school in 1964 where he trained pilots for all certificates and ratings. In a career spanning seventeen years as a Designated Pilot Examiner until victimized by rogue FAA officials, he administered over four thousand certification flight tests for all certificates and ratings. Fried is a lecturer and speaker on Aviation Education and Safety and an expert witness in aviation litigation. Throughout his entire career he has dealt with the “friendly feds” and has come to know a great deal about the inner workings of the only agency of the United States Government that is authorized to promulgate and enforce its own rules. Inside the FAA...An Agency Out of Control explains just how badly this is done and what must be done to fix the problem.
P/N 13-04036



AVIATION BOOKS BY HOWARD FRIED: TELL ME ABOUT AIRPLANES – Although originally meant to be a book designed to answer children’s questions about airplanes, Tell Me About Airplanes is suitable for anyone of any age who is curious about just how airplanes work. Heavy as they are, just how do they defy gravity and stay aloft? How do they navigate from departure to destination? What happens in an emergency? And a myriad of other questions are answered in this fascinating little book.
P/N 13-04037



AVIATION BOOKS BY HOWARD FRIED: EYE OF EXPERIENCE – Howard Fried shares over fifty years and forty thousand hours of experience with pilots all over the world every four weeks with his column, “The Eye of Experience,” in AVweb, the bi-weekly aviation news magazine. Now all of the experience he has shared in his columns can be yours to keep in book form. With over fifty-five years and forty thousand hours of experience, as a flight school operator, flight instructor, and Designated Pilot Examiner who has administered over four thousand certification flight tests, one might think he has seen it all, but far from claiming he has seen it all, Fried says he is constantly surprised by the things both students and certified pilots do. In his seventies, Howard Fried is still an active flight instructor. He enjoys teaching because it presents an opportunity to pass his love of aviation along to others. Knowledge comes from experience and experience comes from mistakes. We can do it the hard way-- make the mistakes ourselves--or we can learn from the mistakes of others. Which will it be? Fried’s books help with the easy way.
Volume OneP/N 13-04040

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| Volume Two | P/N 13-04041 |
| Volume Three | P/N 13-04042 |
| Volume Four | P/N 13-04043 |



THEY CALLED ME MR. BONANZA – How it all started in 1944; the original Bonanza design team and their early efforts to find the ideal airplane for the postwar market; how and why the V-tail was chosen; Experimental power plants, first flight wind tunnel testing; Staggerwing influence; birth of the Debonair; why the “straight” tail, airplane genealogy chart. Specs on all models from 1946-1972.
P/N13-04102.....



AVIATION RADIO COMMUNICATIONS MADE EASY – Talking on the radio comes easily for some pilots, not so easily for others. Adding to the pressure of using correct phraseology is the knowledge that everybody on that frequency can hear you. Thus a number of tools have become available to help pilots practice this important aspect of flying. Hugh Ward has designed a VFR communications “script” that a pilot can fill out during preflight and use in flight. He accomplishes this by providing a variety of templates that the pilot assembles and completes for each type of communications that might be needed. The 272-page spiral-bound workbook includes 32 different templates ranging from operations at nontowered fields to initial call-up of an approach control facility to requesting VFR traffic advisories, also known as flight following. You complete these templates - literally filling in the blanks-and practice them before your flight, then take them along-they’re sized to fit a standard pilot’s kneeboard. Six copies of each template are included, which should give most pilots ample opportunity to work with them.
VFR.....P/N13-04089

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AVIATION BOOKS BY HOWARD FRIED: EMERGENCY! TIPS, ANECDOTES AND PREPARATIONS – What may be a life-threatening event to one person may be a routine non-event to another. However there are some situations which anyone would consider an emergency. This book examines some of them and goes on to explain what can be done to prevent them, or to react properly when one jumps up and threatens a pilot.P/N 13-04039



AVIATION BOOKS BY HOWARD FRIED: FAY GILLIS WELLS - IN THE AIR AND ON THE AIR – In 1929, Fay Gillis Wells soloed before she was twenty-one. The next day she tumbled out of a disintegrating plane and saved her life with a parachute. She was the first woman to evacuate a damaged airplane with a parachute. This event was the start of a career that led her to Russia, to Africa, even to the White House as the White House Correspondent for the Storer Broadcasting Company. She flew a Russian military plane outside of Moscow; she covered wars. Aviation events, special world news items, and four United States Presidents; she patented special furniture for houseboats; she hobnobbed with celebrities from all professions; and through all of these adventures, this gracious woman with the heartwarming smile remained a devoted wife and mother. Fay Gillis Wells, in her ninety-four years, had enough adventures for several lifetimes. Yet, she remained a friendly unassuming lady whom everyone loves until the end of her life in December 2002. Her story cried out to be told.
P/N 13-04044



FROM TRAVEL AIR TO BARON...HOW BEECH CREATED A CLASSIC! – The complete story of Beech Aircraft’s recognition of the need for a true light twin to fill the market gap between the Bonanza and the larger Model 50 Twin Bonanza. This book covers the design concept, marketing strategy, and development of this Beechcraft model line from the first Travel Air in 1958 until the last in 1968. All the Baron models are included, from the Model 55 in 1961 and continuing through the 1994 Model 58 Baron.
P/N13-04103



THE IMMORTAL TWIN BEECH – Welcome to the history of one of Walter Beech’s finest creations- the Model 18 Twin Beech! This venerable aircraft had a production run of 32 years and an amazing, useful life. A behind-the-scenes look at the ongoing history of a unique airplane, one that not only “built” a company but served equally well in peace, war and then peace again. P/N13-24586



FOLLOWING AMELIA – In Following Amelia, Sandi Smith and Jay Merten share tales of their adrenaline-flowing 1995 world flight in a single-engine Piper Malibu. This book contains a daily narrative of the flight in fast-reading, novel-like style. The interleaved perspectives of international aviation, travel, humanitarian, and family make this book unusual and interesting. Sandi also weaves in facts about Amelia Earhart from her 1937 flight and compares Amelia’s flight to modern-day flying. Favorite Amelia’s idea for: CFIs looking for new lessons and challenges for their students • Student pilots who are exploring the potential of flying • Wives of pilots who are a bit afraid of flying • Pilots looking to fly to new countries, overseas, or around the world • Anyone who loves a great adventure
P/N13-04069.....



AIRLINE CAREER & INTERVIEW MANUAL – A unique book written by experienced aviators with solid airline backgrounds. Gives you step-by-step guidance on how to be in a winning situation while preparing for your interviews. If you are seeking an aviation career then this book is a MUST for you. “For many people, the reason they have taken wing is to ultimately fly for an airline. While the path to this goal often seems tortuous, the authors have made achieving this a bit more understandable with their new book...Anyone considering an airline career would do well to read this. It provides a no-nonsense look at the industry and provides some common sense advice...” Flight Training Magazine. Guaranteed insider tips on how to pass the interview the first time or your money back! 160 plus pgs., paperback
P/N13-00364



JENNY: THE AIRPLANE THAT TAUGHT AMERICA TO FLY - The WWII pilots who were the first to fly jets learned to fly in little cloth & wooden biplanes -- the aircraft of the 1920s & 1930s. One such airplane was the Curtiss JN4 Jenny, known as the Model T of airplanes because it was the first aircraft to be mass-produced. Jennys became the airplane of choice for barnstormers and early airmail pilots. Story of this remarkable airplane from the point of view of an early pilot. By David Weitzman
P/N 13-06756

MAINTENANCE & OWNERSHIP



PURCHASING & EVALUATING AIRPLANES (BRIAN JACOBSON) – The most comprehensive book on purchasing general aviation aircraft on the market. It starts with the most important decisions you have to make regarding what type of airplane to buy, considering how much money you have to spend, and goes right through the closing. It includes a few horror stories about those who didn't know what they were doing and got burned. P/N 13-31420



AIRPLANE MAINTENANCE & REPAIR (CARMODY) – Time and money-saving tips and techniques from hundreds of experienced mechanics. Step-by-step FAA approved procedures; advice on selecting, using & caring for tools; maintenance, diagnostic & repair instructions and how to find the right mechanic at the right price. P/N 13-21600



CONVENTIONAL GEAR: FLYING A TAILDRAGGER (DAVID ROBSON) – A taildragger is more difficult to operate on the ground because it diverts from a straight line when moving. It is more difficult to control upon takeoff; it is also harder to land because it tends to bounce and weather vane on touchdown unless the pilot is skilled. So because it takes more piloting skill, flying a taildragger well is the sign of a good pilot. The three part of the book include: the theory and dynamics of a tailwheel airplane; the piloting techniques needed to safely operate a tailwheel airplane; and a series of descriptions of what it is like to fly a selection of traditional and current tailwheel airplanes. The last section is edited by the author from contributions of pilots and airline captains with experience in the particular tailwheel airplanes covered. P/N 13-01552



FLY-ABOUT ADVENTURES AND THE ERCOUBE (PAUL PRENTICE) – What you will find in this book. Some of the adventures and discoveries of Fly-About Adventurers. Oshkosh-The Picnic-Sun-N-Fun, Pictures of fly-about ercoupes, Paint Schemes and Instrument Panels, An analysis of the fly-about coupe, The Mysteries of Performance, Mods-Mods-Mods, Ownership and Soap Box Subjects. 130 pages and a lot of nice photos! P/N 13-42732



THE QUOTIENT CLUB – The Quotient Club introduces Joe Hara, the forty-eight-year-old Japanese-American protagonist of my detective series, six months after retirement as homicide detective for the L.A.P.D. His passion for running leads him to early retirement, but his obsession with his past profession keeps interfering. When his former police chief's godson, who is president of a large Napa Valley winery, dies suspiciously, Joe is asked to assist. He uncovers a series of mysterious deaths. Joe thinks rumors of Folino's Mafia ties might be true; when certain people choose to exit the program, unusual accidents occur. Posing as a prospect for the program, Joe meets Jill Riley, a beautiful journalist, who is writing an article about the rich and their toys. As Joe and his former partner investigate all leads, their safety is jeopardized by a killer's selfish motives. The person behind the deaths is exposed in the final chapters, with unexpected. P/N 13-03466



MUSIC'S BROKEN WINGS: FIFTY YEARS OF AVIATION ACCIDENTS IN THE MUSIC INDUSTRY - Covering the 50 year period between 1935 and 1985, this 540-page book analyzes 34 aviation accidents, which affected the music in our world in some way. From the most famous American artists, such as Buddy Holly, Patsy Cline, Rick Nelson and Lynyrd Skynyrd, to the lesser-known international performers Carlos Gardel, Anna Jantar, Tamara and Kyu Sakamoto, this text covers many types of music and the talents who were affected by adverse aviation events. Concentrating mainly on the aviation accident itself, the text also touches on some personal aspects of the artists' lives. From chamber music, big band, opera, tango, to country, folk, gospel and rock and roll, this book has something of interest for everyone. It also holds some surprises for many readers. J. P. Richardson, son of the "Big Bopper" (who was killed in the Holly accident) wrote the Foreword for the book. Written by professional airline pilot, William P. Heitman, the author successfully intertwines each story to keep the pilot, and non-pilot alike, interested in the history of the event, while providing as much factual documentation as possible to unravel the devastation that sometimes resulted. Complete with illustrations, photographs, airplane statistics and actual government accident reports. P/N 13-02711



AIRCRAFT SYSTEMS: UNDERSTANDING YOUR AIRPLANE (DAVID A. LOMBARDO) – System theory, preflight, preventative maintenance, & in-flight trouble-shooting. Emphasizes way to maximize pilot safety, aircraft performance, & equipment life. 272 pgs. 135 illust. Paperback. P/N 3120



YOUR PILOT'S LICENSE, 4TH EDITION (JOE CHRISTY) – A valuable reference manual during training, but also a "keeper" that should be in the pilot's basic reference library as long as you continue flying. 176 pages, 73 illustrations. Paperback. P/N 13-29900



FLYING ON THE GAGES – Easy to read and packed with tips, tricks and techniques that will make anyone a better instrument pilot. Great source of information for those who are contemplating getting an instrument rating or those who already have one. P/N 13-19420



YEAGER: AN AUTOBIOGRAPHY (GEN. CHUCK YEAGER) – with Leo Janus. The greatest test pilot of them all. The first man to fly faster than the speed of sound. The WWII ace who just kept showing them how, right on into the jet age. 423pgs, 8pgs of photos. Paperback. P/N 3898



BUYING & OWNING YOUR OWN AIRPLANE (JAMES ELLIS) - The 3rd edition of this manual provides answers on everything from selecting partners and home fields to negotiating sales contracts to maintaining and upgrading your treasured bird. Readers will find new information essential for buying aircraft, including a survey of the most common new and used planes on the market today. Chapters are fully updated, offering additional aircraft coverage, detailing changes in tax laws, outlining requirements for obtaining and retaining insurance coverage, and projections on long-term trends in the aviation industry. Updated information includes the enormous impact of the Internet on aviation purchasing and ownership. Contents include: • Comprehensive coverage of what first-time owners should consider, with analyses of popular planes (including the Cessna 177 Cardinal, Piper PA-38 Tomahawk, Beech 77 Skipper, and others). • A chapter examining complex single-engine aircraft, so you can expand your horizons into 200-plus horsepower singles and retractables as well as the new Cirrus, Lancair, and Diamond aircraft. • A complete listing of aircraft owners' associations specializing in the care of specific types of aircraft. P/N 13-03260



SEVERE WEATHER FLYING (DENNIS NEWTON) - This book is not about flying in severe weather, but about how to detect and therefore avoid it, with advice on how to escape it if you become caught in it accidentally. Meteorologist, weather research pilot, engineering test pilot, flight instructor and author Dennis Newton speaks pilot to pilot in this valuable guide on how not to fly in severe weather. Newton says that given the knowledge, pilots can truly lessen their chances in being caught in thunderstorms and other extreme weather conditions. Soft Cover, 208 pgs, illustrated, 3rd edition. P/N 13-02014



CAPT. JEPP AND THE LITTLE BLACK BOOK – Flint Whitlock & Terry L. Barnhart How barnstorming aviator and mail pilot Elrey B. Jeppesen made the skies safer for everyone. A fascinating life story of a true pioneer and visionary. With a foreword by Erik Lindbergh. Pages: 288 Hardcover. P/N 13-04740



SHEET METAL HANDBOOK - Detailed information on how to form and shape sheet metal for competition, custom or restoration use. Chapters include hammer forming tools, terms and equipment, riveting techniques, layout, design and pattern-making. A great companion to the Metal Fabricator's Handbook. Author: Ron and Sue Fournier Pages: 144 P/N 13-06720



METAL FABRICATOR'S HANDBOOK - How to build structurally sound, good looking metal parts for custom street rods, race cars or restorations. Over 350 step-by-step photos and instructions illustrate proper welding, metal shaping and design techniques. Pages: 176 P/N 13-06719



FIBERGLASS & OTHER COMPOSITE MATERIALS - A revised and updated guide to fiber reinforced plastic materials, including fiberglass, Kevlar, and carbon fiber. It also includes sections on mold making, plugs, materials, structures, gel coats, advanced building techniques, tools, and equipment. Author: Forbes D. Aird Pages: 192 P/N 13-06721



TRAVEL BOOKS



AIR BAJA! (GALEN L. HANSELMAN) – A Pilot's Guide to the Forgotten Peninsula. 624 pgs. A comprehensive guide to the airports in Baja. Color photos, info on hotels, camping, hiking, fishing, hunting, surfing, rock art, dining, history and lots of Baja stories as only Galen can tell them!

P/N 13-26800

GH-22 WAC SUPPLEMENT FOR BAJA CALIFORNIA, MEXICO – Contains current info on over 100 usable and transitional airports in Baja. Chart unfolds vertically to show entire peninsula on one side. No more flipping and fiddling! Reflects the transpeninsular highway completed in 1972 and associated relocation of towns, fish camps, ranches and ejidos. Includes user waypoint info for simple GPS navigation. Fuel availability chart and a comprehensive Baja Airport Master List containing the current status of over 240 airstrips. The laminated chart folds perfectly and does not have plastic overcaps like some laminations. Has very vibrant color and is very durable.

Standard Chart.....P/N 13-30705

Folded and laminated ChartP/N 13-30708

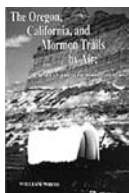


BD-1 BAJA DATABASE– Contains data on over 100 airports in Baja. The BD-1 is a 3.5" diskette that allows an individual to copy the entire Baja database onto a PC, and then download it onto their personal GPS in matter of minutes. All data cross references to User

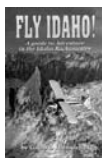
Waypoints shown on the GH-22 aeronautical chart as well as AIR BAJA! Currently compatible with Morrowll GPS Waypoint Manager version 2.1& 3.1 for Windows, Garmin GPS Waypoint Manager version 2.07, & Lowrance Gdm16. PC version only. P/N 13-40900

BAJA BINDER – A beautifully constructed zip-up protective cover made of cordura nylon, custom designed to contain your copy of AIR BAJA!, an aeronautical chart, a pen, the BD-1 diskette, aircraft registration, pilot's license, medical, Mexican insurance policy, Mexican General Declaration, flight plans, and all of those little odds & ends so necessary for a safe, exciting trip to Baja. P/N 13-26810

THE WHOLE ENCHILADA – A complete travel kit. Includes GH-22 aeronautical chart, autographed copy of Air Baja!, a BD-1 Baja Database diskette, and a deluxe Baja binder. P/N 13-26910



THE OREGON, CALIFORNIA & MORMON TRAILS BY AIR (WILLIAM WHITE) – In the mid-1800's more than 300,000 people crossed the continent in search of land, riches or religious freedom. Follow their routes from Kansas City to Portland, Reno or Salt Lake City. Maps, photos and waypoints help pilots to follow the routes and spot sections of the ruts that were made by the immigrants' wagons and animals 150 years ago. An appendix contains information about ground attractions & FBOs along the way. (216 pgs/B&W photos). P/N 13-26710



FLY IDAHO! A GUIDE TO ADVENTURE IN THE IDAHO BACKCOUNTRY (GALEN HANSELMAN) – Beautiful color photos and vivid descriptions of 66 unpaved mountain airstrips in the state with the mt incredible mountain flying in the world! Includes info on hiking, hunting, fishing, mountain biking, history, & a relative hazard index. A must for serious backcountry pilots everywhere. 417 pages. P/N 13-30760



FLY UTAH! A PILOT'S GUIDE TO EXPLORATION AND DISCOVERY IN THE RED ROCK COUNTRY – FLY UTAH! is the same format as Galen Hanselman other guides and contains information on 83 back country airstrips; 57 of them never been charted or documented. This is a hard cover book with concealed Wire-O binding. In addition to the author's infamous Relative Hazard Index (RHI), each airstrip contains a full color illustration depicting the Terrain Elevation Model (TEM) and Runway Elevation Profile (REP). P/N 13-05130

THE FLYER'S RECREATION GUIDE: NORTHWESTERN STATES – Contains descriptions of Western America's most exciting sites, all within convenient access of landing strips. Included are tips and current costs for transportation, lodging, restaurants, hiking, fishing, swimming, evening entertainment, and more. The Guide tells how to find trail-heads, hot springs, raft trips, and items of interest. Airport information is included to help pilots determine if their aircraft and skills are compatible with the destination. This compact, perfect-bound 352-pg book has rounded corners & slips easily into a jacket pocket. Its high-quality paper provides maximum clarity for the the books 250 maps & photos. P/N 13-17590



FLY THE BIG SKY! (GALEN L. HANSELMAN) – Galen's brand-new book, Montana, Fly the Big Sky! is finally here. This is the book you've been waiting for. A whopping 720 pgs packed with the best information on Montana's unspoiled airstrips. 160 color photos, 100s of B&W photos, and lots of Galen's stories.

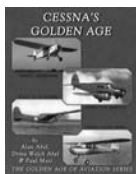
P/N 13-00896



SOUTHWESTERN FLYING ADVENTURES (BY JAMES S. KOHN, M.D.) - Explorations of 31 cities and towns in Texas, Arkansas, New Mexico, & Oklahoma. This book contains an index cross-referenced by activity and by location. It serves as a springboard to facilitate and encourage new adventures. Use it for ideas, as well as for the specific tips and references.

P/N 13-02875

THE GOLDEN AGE OF AVIATION SERIES



CESSNA'S GOLDEN AGE (ALAN ABEL, DRINA WELCH ABEL & PAUL MATT)– Takes a look at Clyde Cessna and nephew Dwane Wallace, longtime Cessna President, & the Cessna Aircraft Company from early 1900s, through the struggling years of the Great Depression, through World War II and the post-war years. Emphasis is given to Cessna Primary Gliders, Cessna Airmasters, Cessna T-50 Bobcats, Waco CG-4A Gliders (Cessna built), and Cessna 120/140 airplanes. Other Cessna models are also included. 96 pgs, softbound, 180 photos, 8 pgs of 3-view scale drawings.

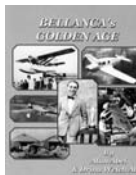
P/N 13-01534



AERONCA'S GOLDEN AGE – Progressively details the events leading to the Aeronautical Corporation of America, from the early 1900s, through the Great Depression, the disastrous flood of 1937, World War II and beyond. The book includes biographical information on the founders of Aeronca, and details the people, facilities and manufacturing operations of Aeronca during the Golden Years. It also includes the reasons for the company's name change to Aeronca. Emphasis is given to Aeronca's C-2, C-3, Model K, Model L, 7AC Champ and 11AC Chief. All Aeronca's models are discussed. Several factory photos are included. 152 pgs, softbound, 240+ photos, 18 pages of internationally acclaimed 3-view scale drawings. P/N 13-01535



PIPER'S GOLDEN AGE – Details the formations, struggles & successes of the Piper Aircraft Corporation during aviation's Golden Age. Includes particulars of the original Taylor Brothers Aircraft Corporation and of C.G. Taylor (the father of the light plane) & his brother, Gordon. It explains the move to Lock Haven, Pennsylvania, the bankruptcy of the company during the Depression, and the ultimate split of Taylor & Piper, and the beginning of the Piper Aircraft name. Included are the Taylor Chummy, Taylor E-2 Cub, Taylor/Piper J-2 Cub, Piper J-3 Cub, J-4 Cub Coupe, J-5 Cruiser, the Grasshoppers (military observations & liaison airplanes), Piper TG-8 Training Glider, Piper Experimentals, PA-12 Super Cruiser, PA-11 Cub Specials, PA-14 Family Cruiser, PA-15 Vagabond, PA-16 Clipper and PA-18 Super Cub. 90 pgs, softbound, 11 pgs of 3-view drawings, 130 photos. P/N 13-01536



BELLANCA'S GOLDEN AGE BOOK – BELLANCA'S GOLDEN AGE Traces G.M. Bellanca coming from Sicily to America as a teenager in 1911 through his 42 years of continuous airplane manufacturing operations. He did more for aviation than any other single individual during aviation's first 100 years, bar none! This is the ONLY BOOK that has ever captured Bellanca's complete and lengthy story. Details the beginnings of the air transportation system over great distances. Details the first ten flights over the Atlantic and the first flight over the Pacific. Tells never-before-told stories of Charles Lindbergh, Clarence Chamberlin and many other Golden Age personalities. Tells the complete story of the greatest airplane of the 1920s – Bellanca's Columbia (the plane Lindbergh wanted but didn't get). In the 1930s the government tested 209 different airplanes and found that Bellanca's was the best regarding "efficiency." 148 pages and 175 plus photos.

P/N 13-03337



GEE BEE - by Delmar Benjamin Heres the inside story of the creation of the Gee Bee R-2 replica, written and photographed by the men who designed and built it. This star of air shows is followed from re-creating the original plans through all stages of construction; on its first test flights; and wowing the crowds at Oshkosh and other air shows. Packed with original color photography.

P/N 13-06202



RACE WITH THE WIND - By: Birch Matthews In decades leading to World War II, legendary air races were the proving grounds for radical new aviation designs. The people and machines of air racing contributed new technologies, aerodynamics, powerplants, and airframes. Unique look at key players and aircraft. Examines how innovative racing technologies found their way into future fighter and passenger aircraft. Covers races like the Schneider Cup, Pulitzer Trophy Race and Women's Air Derby. In-depth look with fascinating archival photos. 160 pgs, HB, 10 x 10, w/dust jacket, 150 b&w and 15 color photos.

P/N 13-06201



FLY LOW, FLY FAST: INSIDE RENO AIR RACES - Book takes us into the high-risk world of Unlimited Air Racing at the Reno National Air Races. Flying wingtip to wingtip around pylons at nearly 500 mph, just yards above the sagebrush, Reno's big throaty warbirds are piloted by adrenaline-addicted, Type-A elite whose oversize talent and egos spawn a hundred stories. Book traces the history of this colorful, often deadly sport, and follows the evolution of the competition planes from the exotic custom contraptions of the 1930s to today's machines like the Bearcat and Mustang.

P/N 13-06199



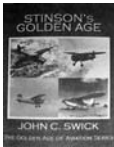
AIR RACING TODAY - THE HEAVY IRON AT RENO - Experience ground-shaking power and unbelievable speeds of the T-6 and Unlimited classes at the National Championship Air Races. Book captures breathtaking action of the P-51s, Sea Furies, and other modified air racers with dramatic color photos and fast-paced text. Features daring pilots, devoted crews and intriguing racing aircraft. Includes section highlighting planes' decorative nose art.

P/N 13-06198



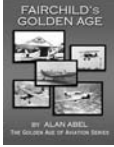
VULTEE AIRCRAFT - Today the name Vultee is not as well known as, say, Douglas or Northrup but Gerard Vultee was the equal of the better-known names as an engineer and director, rapidly advancing the design of aircraft with aerodynamic all-metal structures and retractable landing gear in the 1930s.

P/N 13-06195



STINSON'S GOLDEN AGE - BY JOHN C. SWICK - This is the history of the Stinson 108 series airplane (the Voyager), although the 105, 10, 10A and L-5 are covered in great detail. The story begins with the three-place 105 in 1938 and concludes with the sale of the last Stinson 108-3 from Willow Run in 1950. Mr. Swick is well known for his particular attention to detail and historical accuracy. He spent hundreds of hours carefully researching the Stinson history, and has a very readable style in weaving together the details of Stinson's Golden Age.

P/N 13-06176



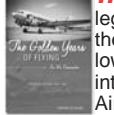
FAIRCHILD'S GOLDEN AGE - BY ALAN ABEL A young Sherman Fairchild quit college in 1917 to start a company to build aerial cameras. After 3 years, Fairchild built the first successful large, high-speed between-the-shutter camera that was a major breakthrough in aerial photographic technology. Fairchild found airplanes of the day not suitable for the photographic mission. Sherman decided to build one himself. During the design of the plane, Fairchild decided to build a multi-purpose plane suitable for other piloting needs and to market these airplanes to the public.

P/N 13-06177



HOWARD'S GOLDEN AGE ART HALL - After building four of the most successful and famous air racers in the world, in the 1930s, Pete, Mike, Ike and Mr. Mulligan, Benny Howard's fame increased with each passing year. With such notoriety, Benny was able to realize his dream -- that of manufacturing and selling commercial aircraft to the flying public throughout the world. Howard was also a highly acclaimed test pilot, having test flown many aircraft for several aircraft manufacturers during his career. This Benny Howard story is a story of struggle, fame, fortune, love, depression, failure and success.

P/N 13-06178



THE GOLDEN YEARS OF FLYING - As We Remember is the legacy of an earlier day in aviation history, recorded by one of the pilots who shared this experience and wrote down his fellow pilots' stories. Captain Tex Searle corresponded with and interviewed several retired DC-3 pilots from the old Frontier Airlines days, and brought all their tales together in one place for a vivid historical account. Covers from 1946 to 1986, and in her early days, crews hand-flew DC-3s over the high Rockies, in and out of small airports hidden deep in mountain canyons with approaches often referred to as "black holes" due to their almost ominous darkness and lack of reliable visual references.

P/N 13-06412



LUSCOMBE'S GOLDEN AGE - BY JOHN SWICK. Luscombe's Golden Age is the fifth book in The Golden Age of Aviation Series. John Swick, the author, has completely revised and updated the original The Luscombe Story published in 1987, including approximately 100 new pages of text, dozens of never-before published photographs and Luscombe magazine ads from that era. Included in this book are detailed accounts and descriptive 3-view scale drawings of each Luscombe model manufactured, including the early models: Phantom, Ghost, Spectre, Harpie, Small Transport and Sprite.

P/N 13-06180



CUBS ON THE LOOSE - Join this Cub, NC87881, as she takes her pilot flying like the old days - without modern instrumentation. "A heartwarming story of flight in its purest form. A totally different perspective... a cross-country trip from the eyes of the airplane. In this story, the J-3 Cub becomes human. To many of us who have flown the airplane, we felt that way all the time. Flying at its best. Simple, fun and relaxing."

Tom Poberezny, president, EAA. P/N 13-06182



THE HEATH STORY BY CHET PEEK - Chronicles the life of Edward Baird Heath and his famous "parasol" kiplanes. It spans the years from his first Bleriot flight in 1910 to the fatal test of his experimental Low Wing in 1931. He is best remembered for his introduction and promotion of the kiplane concept, powered by a Henderson 4-cylinder motorcycle engine. From 1927 to 1931, 1000s of air-minded young Americans bought his kits, then spent endless hours handcrafting a plane in barns and basements.

P/N 13-06184



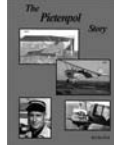
BY CHET PEEK & GEORGE GOODHEAD - Chronicles humble beginnings of the Spartan Company in the "Roaring Twenties," and its travails during the Great Depression and its growth and prosperity during and after World War II. Every Spartan aircraft model is detailed. Includes 3-view drawings.

P/N 13-06185



THE TAYLORCRAFT STORY CHET PEEK - C.G. Taylor, Taylor/Piper business, Taylor/Piper split, and the Taylorcraft airplanes. Story opens with the December 1935 separation when Wm. T. Piper forced Taylor out of the company that bore his name, Taylor Aircraft Company, manufacturer of the "Cub." Name was changed to Piper Aircraft Corporation when Piper moved his reorganized business to Lock Haven, Pennsylvania in mid-1937. Traces C.G. Taylor's design and manufacture of the various Taylorcraft airplanes.

P/N 13-06186



THE PIETENPOL STORY BY CHET PEEK - The Atlantic had proved a graveyard for many ships, and when the first butterfly craft began to fly it after the World War I, all the omens warned that it would swallow up planes as well. Nonetheless, the pioneers - Read, Alcock, Brown and Lindbergh, as well as many who gambled and lost - continued to pit themselves against the odds.

P/N 13-06187



THE TIGER MOTH STORY BY ALAN BRAMSON - The Tiger Moth is one of the major aviation success stories. Developed by Geoffrey de Havilland during the early 1930s and flown for the first time on October 26th, 1931, the biplane became the most important elementary trainer used by Commonwealth forces. More than 1,000 Tiger Moths were delivered before WWII, and subsequently around 4,000 were built in the UK with an extra 2,000 being manufactured in Canada, Australia and New Zealand.

P/N 13-06189



TRAVEL AIR: WINGS OVER THE PRAIRIE BY ED PHILLIPS - Travel Air achieved worldwide fame by 1929 as a builder of high quality commercial biplanes and monoplanes. Every facet of the company's history is chronicled, including the "Mystery Ship" racers. Includes technical and construction data on every model and the people that made it happen. Also includes scale 3-view drawings and more. 128 pgs, SB, 8.5 x 11, 200 photos

P/N 13-06190



THE RISK TAKERS: RACING & RECORD SETTING AIRCRAFT, 1908-1972 - By: Hugh Cowin Book focuses upon two distinct but complementary - and in certain cases overlapping - aspects of aviation. At the Reims Air Show in 1909, the American Glenn Curtiss and Frenchman Louis Bleriot vied with each other for the speed record and Henry Farman won the distance prize. The first official air races were held in 1911. There were a staggering 32 aviation fatalities in 1910; CS Rolls (co-founder of Rolls-Royce) was the first to perform a non-stop return crossing of the English Channel; but his Wright Flyer would break up in mid-air a month later. This book illustrates and analyzes all such pioneering achievements in precise technical detail.

P/N 13-06197





THE COMPLETE GUIDE TO CESSNA AIRCRAFT BY TOM MURPHY - Ready to buy a new or pre-owned Cessna? This updated second edition includes (1) original in-depth info about older Cessna models (2) updated info on Cessnas being offered today and (3) buying advice on AD's, inspection of aircraft and its logbooks and how to choose the right model for your needs. P/N 13-06179



CARAVAN CESSNA'S SWISS ARMY KNIFE WITH WINGS - Affectionately called "a Swiss Army Knife with Wings", the Cessna Caravan can evoke a sense of adventure in almost all that lay eyes on this rugged and reliable SUV of the air." Join authors LeRoy Cook and J. D. Lewis as they combine their experience and skills in the first-class review of an amazing airplane. Includes beautiful photography throughout. P/N 13-06226



THE COMPLETE GUIDE TO PIPER AIRCRAFT - Are you ready to buy a new or pre-owned Piper? This updated second edition includes the original in-depth info about Piper models along with purchasing advice on ADs, inspections, the importance of logbooks, and how to choose the right Piper aircraft for your wants and needs. This informative narrative includes information on models from the Piper Cub, to the various Piper Indians such as the Cherokee, the Cheyenne, the Comanche, and the agricultural Pawnee. P/N 13-06181



VINTAGE AIRCRAFT OVER AMERICA - Just Published. Journey through time looking at several of the most evocative civil and general aviation airplanes built from the 1920s to 1950s. Book is packed full of color photos of many classic American airplanes. Most were photographed in the air between 1998-2002. P/N 13-06191



WINGS OF YESTERYEAR BY GEZA SZUROVY - Nostalgic look at the Golden Age of personal flight, when incredible aircraft of the 1920s, '30s, and '40s were pushing every known limit, and doing it with flair. The impeccable style and ever-increasing performance of stunning open-cockpit and cabin-class monoplanes and biplanes such as the Curtiss Jenny, Beech Staggerwing, Stinson Reliant, Luscombe Phantom, and Spartan Executive are all captured here. Also includes Stearman, Taylor, Piper, Lockheed and Waco. A detailed text traces the evolution of the airplanes. Exceptional collection showcases rare, vintage private airplanes through modern color photography (air-to-air) of restored aircraft. P/N 13-06192



BUSHPLANES BY GEZA SZUROVY - Colorful book examines the duties bushplanes help carry out around the world and the development of the greatest examples still plying the skies, including DeHavilland Beavers and Otters, Piper Cubs, Stinson Reliants, and Cessna Skywagons. P/N 13-06193



OF WINGS & THINGS BY PETER BOWERS - Peter Bowers is a foremost aviation historian and author. His byline has appeared hundreds of times as Peter Bowers has written numerous books, articles, columns, and stories for a variety of aviation periodicals over the last 70 years! In the process, Bowers has acquired one of the world's largest private collections of airplane photos and reference data. Authors and publishers worldwide draw from his research files. This particular book is a potpourri of Bowers' writings, as his aviation historical columns have appeared in General Aviation News over past years. P/N 13-06183



X-PLANES: PUSHING THE ENVELOPE OF FLIGHT - Since the first edition of X-Planes at Edwards (0-87989-85-0) was published in 1995, many new types of civilian (Rutan-types, 717 and 777), military (Bombers, Fighters, Reconnaissance Drones and Transports) and dedicated research aircraft (X-planes) have been created by numerous manufacturers and then flight-tested at the Air Force Flight Test Center (AFFTC) and NASA Dryden Flight Research Center (DFRC) at Edwards Air Force Base in the Mojave Desert of California. P/N 13-06196



PAN, PAN, PAN! A SURVIVOR'S STORY - "A Survivor's Story" Pan, Pan, Pan is the story of how I dreamed of being a pilot and never gave up on that dream. It is also an account of having crashed into the ocean twice and living to tell about it. Pan, Pan, Pan shares my love of flying and my desire to do all that I can to help keep the airways safe. Author: Captain Denis G. Murphy Pages: 168 P/N 13-06104



FLYING WITH 40 HORSES - THE CONTINENTAL A-40 ENGINE - The Continental A-40 Engine was the answer to the continuing problem of finding suitable and inexpensive powerplants for lightplane manufacture during the Golden Age. The Aeronca E-113 of 36-hp was close, but the next generation, the Continental A-40 filled the bill. It was light, could power a 2-place airplane, and cost less than \$500. P/N 13-06194



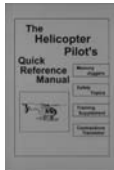
THE STORY OF TRANSATLANTIC FLIGHT BY DAVID BEATTY - The Atlantic had proved a graveyard for many ships, and when the first butterfly craft began to fly it after the World War I, all the omens warned that it would swallow up planes as well. Nonetheless, the pioneers - Read, Alcock, Brown and Lindbergh, as well as many who gambled and lost - continued to pit themselves against the odds. P/N 13-06188



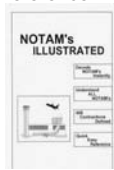
SPORT PILOT AIRPLANE: A COMPLETE GUIDE - By: by Carol and Brian Carpenter Book provides an in-depth understanding of light-sport aviation complexities. Clarifies points commonly misunderstood, provides a wealth of information on subjects such as: Selecting an Aircraft, Pilot and Aircraft Certification, Weather, Flight Principles, and more. The material presents the experience of thousands of flight hours and contains valuable lessons for all pilots and would-be pilots. Book is engaging, comprehensive, and well-illustrated for the veteran aviator and newcomer alike! P/N 13-06203



PREFLIGHT WEATHER ANALYSIS MADE EASY - This highly detailed, easy to follow guide carefully leads you through the preflight weather analysis process in plain everyday language. No critical weather hazard will be overlooked when following this manual's very systematic examination of weather and its potential hazards. Includes detailed reference materials and decoders to provide a complete preflight weather picture. P/N 13-06129



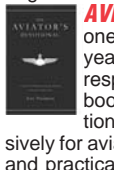
THE HELICOPTER PILOT'S QUICK REFERENCE MANUAL - Student pilots will find The Helicopter Pilot's Quick Reference Manual essential reading, and an excellent learning device to increase and simplify their understanding of helicopter flight. The more experienced helicopter pilot will benefit from the memory joggers and reference materials in this unique and handy resource - a real time saver! Flight schools will enhance their training program by offering The Helicopter Pilot's Quick Reference Manual as a supplemental handout to reinforce instruction to student pilots. Helicopter operators will substantially strengthen their safety program by giving each of their pilots a copy of this manual to help increase safety awareness. The Helicopter Pilot's Quick Reference Manual is more than a memory jogger - it's an everyday reference! P/N 13-06130



NOTAM'S ILLUSTRATED - NOTAM's Illustrated is a quick reference manual that can be used by pilots and airport operations personnel to rapidly decipher or format NOTAMs. This resource book features over 400 Notice to Airmen contractions-- that's 140 more contractions above those offered in the official FAA NOTAMs manual. The many NOTAM examples of airport movement areas, approach and lighting aids, navigational aids, airspace restrictions, and temporary flight restrictions allow the reader to completely understand Distant NOTAMs, Local NOTAMs, and FDC NOTAMs in their entirety. P/N 13-06131



THE METAR & TAF QUICK REFERENCE MANUAL - Every pilot will become an instant weather expert when using the METAR & TAF Quick Reference Manual. This indispensable guide defines over 250 METAR and TAF terms in a convenient dictionary-like format, providing all pilots with an instant understanding of this often-times puzzling weather language. Associated page references point toward more in-depth information, as well. A comprehensive glossary further aids aviators in developing an extensive knowledge base of all METAR and TAF terms. P/N 13-06132



AVIATOR'S DEVOTIONAL - The Aviator's Devotional, has been one of the top selling books at the Oshkosh AirVenture two years consecutively. It was the second and fourth best seller respectively in 07 and 08 at the EAA Author's Corner among books by over 40 popular aviation authors. The Aviator's Devotional is unique, as the only inspirational book of its kind exclusively for aviators. The book presents adventurous stories, aviation trivia, and practical flying pointers to illustrate valuable lessons on life from a Christian perspective. P/N 13-06140



AIR SCAN 5TH EDITION - AIR-SCAN Guide to Aeronautical Communications, 5th Edition by Tom Kneitel This unique book is the most comprehensive guide to monitoring aeronautical communications yet compiled. It covers HF (2 to 30 MHz), VHF aero (118 to 137 MHz), as well as other VHF/UHF bands 137 to 174 MHz, 406 to 512 MHz, and the 800 MHz band. P/N 11-18920



FLYING & LEARNING: BASICS FOR EVERY PILOT (WILLIAM HEITMAN)

Heitman uses simple terms and personal experiences to lay basics which students can use to get their feet wet. By keeping things simple, he also keeps the new student interested, which can be difficult when teaching something as complicated as flying. This is an excellent primer for students who are just beginning their flight training or pilots who have been away from flying for a while.

P/N 13-15129



CHINO: WARBIIRD TREASURES PAST & PRESENT

From the day it was founded as Cal Aero Flight Academy 60 years ago, Southern Californians Chino Airport has been the world's center for warbird restoration. This hardcover 198-pg book contains some 400 color and black & white photos, most of which have never been seen before. Joe Cupido spent years assembling materials for this book, interviewing hundreds of people and flying dozens of air to air photo sessions. Printed on high quality chrome-coated paper, photos in this book are exceptional.

P/N 13-01032

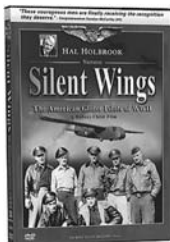
Ideal gift for any warbird fan.



50 AIRCRAFT THAT CHANGED THE WORLD

A close-up survey of 50 of the most remarkable and influential aircraft ever. For this book, the authors of the widely acclaimed Aviation Century series chose 50 of history's most influential aircraft, with profiles of their pilots and designers. They begin with the Wright Brothers' 1905 Flyer, then move on to the birth of aerial warfare in World War I, the trail-blazers of the interwar years, the first passenger flights, and the great flying boats. Classic World War II aircraft such as the Bf 109, Spitfire and Mustang are included among the stars of that time. Then come the jets of the Korean and Vietnam wars, modern commercial carriers, private jets, experimental designs, and new combat fighters featuring Stealth technology.

P/N 13-05248

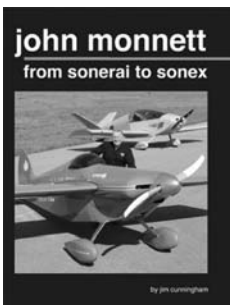


SILENT WINGS - THE AMERICAN GLIDER PILOTS OF WWII

From the early race to build gliders to the D-Day invasion at Normandy and Nazi Germany's final surrender, Silent Wings - The American Glider Pilots of WWII narrated by Hal Holbrook, reveals the critical role gliders played in World War II offensives. Through rare archival footage and photographs, the film places the audience right at the center of the action in the dangerous world of the

American glider pilot.

P/N 13-05133



JOHN MONNETT FROM SONERAI TO SONEX

This is the intriguing story of John Monnett and his airplanes. He is a kit plane designer, innovator, air racer, world record holder and member of the EAA Hall of Fame. While pursuing his own aviation interests, Monnett inspired and enabled thousands of others to build and fly affordable aircraft. From the Sonera, sketched at his kitchen table in 1964, to pioneering engine conversions, to the Sonex's simple construction methods, John Monnett is a flag-bearer for grassroots aviation. The book covers his early aviation designs and all of the airplanes he designed.

P/N 13-05052



FLIGHT: A CELEBRATION OF 100 YEARS IN ART AND LITERATURE

Documents the centennial since the Wright Brothers first flew with contributions from a stunning selection of writers from the worlds of science fiction, poetry, aviation, literature, science and politics including Robert Frost, Joni Mitchell, Chuck Yeager, Antoine de Saint-Exupery, John Travolta, John F. Kennedy, Walter Cronkite, Diane Ackerman and Ray Bradbury. The artists represented range the spectrum of the 20th century art from Richard

Serra, Robert Rauschenberg, Robert Delaunay, Fernand Leger, Henri Rousseau, Pablo Picasso to Roy Lichtenstein, Andy Warhol, Norman Rockwell, William Wegman & Annie Liebovitz.

This publication coincides with the centenary of the invention of the airplane in December of 2003. P/N 13-02461

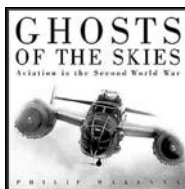
Pilot's Handbook



THE FLYING WINGS OF NORTHROP

Prepared by Northrop of Hawthorne, CA, The Flying Wings of Northrop is the actual pilot's handbook for model YB-49 airplane. Includes description, operating instructions, emergency operating instructions & operational equipment. 75 pgs.

P/N 13-24100



GHOST II - A TIME REMEMBERED (PHILIP MAKANNA)

Philip Makanna has flown with the Confederate Air Force for over 25 years and captured their rare planes with his extraordinary color photography. Makanna's breathtaking images capture the romance of 35 different American, British, German, & Japanese aircraft. In GHOST II he writes warmly of the men of the CAF, telling who they are and how they fly. Specifications and silhouettes are included as well as the famous WWII pamphlet "Fundamentals of Air Fighting". 128 pgs, 64 pgs, full color - 11-1/2" x 9" Hardbound. P/N 13-01957

Also available GHOST OF THE SKIES P/N 13-01319



GHOSTS OF THE GREAT WAR - AVIATION IN WORLD WAR ONE

GHOSTS of the Great War, Aviation in World War One is the fifth volume in Philip Makanna's classic series of books about aviation. "GHOSTS of The Great War" describes the sudden growth of aviation that began only ten summers after man's first flight and ended, four dark years later, with aircraft that had been hammered by war into reliable flying form. This edition of GHOSTS describes the beginnings of military aviation with Bleriot's wing-warping Model XI, Fokker's web of wires and sticks and Sopwith's simple seaplane racer. They began as sport planes and evolved in the deadly machines that swarmed over the trenches of Europe and altered the history of the world. They carried the dreams and nightmares of all mankind on their wings. Makanna's stunning color photographs of these aircraft in flight are woven with an extraordinary collection of archival duotones to describe the beauty, the romance and the tragedy of military aviation's earliest days. P/N 13-04016



ASA DREAM AIRCRAFT: THE MOST FASCINATING AIRPLANES I'VE EVER FLOWN

Join Barry Schiff on an amazing journey across time and space as he flies and brings home reports on some of aviation's most rare and popular aircraft. Dream Aircraft documents his lifelong voyage flying aircraft that pilot enthusiasts dream of flying. Some of these aircraft are so rare that most pilots have never even seen one, let alone had a chance to fly them. Each chapter is dedicated to a different aircraft as the author describes the unique aspects and performance characteristics: exactly how it feels to be behind the control wheel (or stick, as it may be). The book is dripping with detail and gorgeous images that will immerse the reader in an experience like no other. From the nostalgia of the Spirit of St. Louis, to the popular WWII fighter P-51 Mustang, to the exciting Lockheed U-2, this book is the who's who and how-to on some of the most remarkable aircraft ever developed.

P/N 13-05653



THE PHINEAS PINKHAM SCRAPBOOK

The "Phineas Pinkham" stories reprinted herein will bring back fond memories to aviation fans who were young in the 1930s. And they, in turn, may use this collection as a means of passing along to younger persons an appreciation for this obscure but quite amusing bit of aviation lore. Phineas is too fascinating a character to be forgotten by aviation enthusiasts! 64 pages.

P/N 13-06762



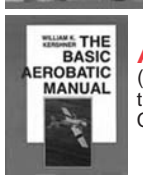
BOOKS



GOODYEAR & FORMULA ONE AIR RACING, VOL. 1, 1947-1967 — 202 pgs, 569 photos, 88 scale drawings, softbound. Learn how this exciting sport caught on, meet the early players and the governing organizations. This volume tracks technological developments which allowed faster speeds and greater safety. This volume covers early racers – Art Chester, Steve Wittman, Bill Falck, Tom Cassutt, Bob Downey, Bill Brennard and many other. P/N 13-00033



GOODYEAR & FORMULA ONE AIR RACING, VOL. 2, 1967-1995 — 170 pgs, 450 photos, 74 scale drawings, softbound. Air racing had its ups and downs but by 1967 it was firmly established as a sport here to stay. During this time, women pilots entered pylon racing, speeds continue to increase and concerns about safety led to additional equipment requirements. Bill, Ray Cote, Jim Miller, Jon Sharp and others contributed much to air racing's popularity. P/N 13-00034



AEROBATICS THE BASIC AEROBATIC MANUAL - (Kershner) – Step-by-step descriptions and 86 illustrations progress from simple through complex maneuvers. Cover loops, rolls, spins, stalls and much more. P/N 13-32210



BASIC AEROBATICS (GEZA SZUROVY & MIKE GOULIAN) — Enjoy the aerobatics experience with this complete guide from national champions who tell you not only how to perform the maneuvers, but why the airplane behaves as it does. A variety of maneuvers-loops, slow rolls, Cuban eights, inverted flight, and many more are discussed and illustrated with diagrams and in-flight photos. 288 pages, 90 illust., paperback. P/N 13-00677



SKYDANCING: AEROBATIC FLIGHT TECHNIQUES (DAVID ROBSON) – The book includes the terminology unique to aerobatics, and dedicates a chapter each to the physics and physiology of aerobatic flight. Mr. Robson explains how to prepare for an aerobatic sortie – including the aircraft involved, personal checklist, preflight requirements, and the regulations governing aerobatics. All the basic aerobatic maneuvers are covered, accompanied by easy-to-understand explanations, step-by-step instructions, and clear illustrations, to include the wing-over, aileron roll, loop, hammerhead, inverted flight, Immelmann turn, split-S, knife-edge flight, hesitation and snap rolls, the avalanche, and much more. The aerobatic sequence is explained, along with the Aresti Notation, which is used by aerobatic professionals and competitors in display and contests. P/N 13-00734

tions, step-by-step instructions, and clear illustrations, to include the wing-over, aileron roll, loop, hammerhead, inverted flight, Immelmann turn, split-S, knife-edge flight, hesitation and snap rolls, the avalanche, and much more. The aerobatic sequence is explained, along with the Aresti Notation, which is used by aerobatic professionals and competitors in display and contests. P/N 13-00734



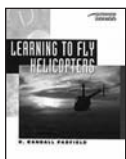
PRIMARY AEROBATIC FLIGHT TRAINING WITH MILITARY MANEUVERS (LT.COL. ART MEDORE) – Covers ground instruction, use of instruments in aerobatics, and contains a complete section on advanced maneuvers. Illust. 157pages. P/N 13-15100



HOMER THE HELICOPTER BOOK/CD - A ONE OF A KIND TALE OF HIGH-FLYING AVIATION ADVENTURE! From his pug nose, to his emerald green eyes and shiny blades, down his sleek frame to his tail rotor, this little 'copter will captivate you from the start. Follow Homer from his beginnings at the helicopter factory on an epic journey, as he learns the ropes of being a touring helicopter. Meet Homer's beautiful mother, Elsa, the golden helicopter, as she tries to discipline her rascal son. Learn along with Homer how to fly, as he's taught my ace pilots Hank & Jennie. Gasp as the quick-silver-streak 'copter pops out of the puffy clouds, spinning straight down! Dodge sharp spires & rugged chasms of the Grand Canyon as Homer thrills his passengers with the ride of their lives! Laugh with the children when they nick-name Homer "The Cliff-Hanging" 'copter."

BookP/N 13-05090

CDP/N 13-05091



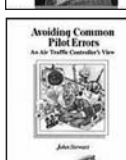
LEARNING TO FLY HELICOPTERS (R. RANDALL PADFIELD) - "Written in a conversational style that's both fun and easy to read... Even if you're a confirmed fixed-wing pilot and show no rotor-wing tendencies, you'll enjoy this book and gain an insight into your brother pilots' obsessions." AG-Pilot International. 354 pgs, 100 illust., paperback. P/N 13-29931



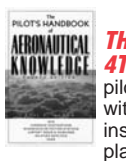
HANDLING IN-FLIGHT EMERGENCIES (JERRY EICHENBERGER) - Train and prepare for the unexpected with this thorough guide that builds your confidence and teaches you valuable techniques and procedures for coping with emergencies. 201 pages, 25 illust., paperback. P/N 13-70000



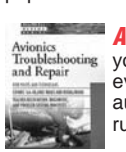
THE PILOT'S RADIO COMMUNICATIONS HANDBOOK, 5TH EDITION (PAUL E. ILLMAN) - "It should have a spot on your bookshelf right next to the airplane's service manual," said Private Pilot of this hands-on guide to equipment, techniques, regulations, and overcoming "mike fright." 232 pages, paperback. P/N 13-29944



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CHILDREN'S BOOKS



THE PILOT ALPHABET CHILDREN'S BOOK - Written by Sue Hughes Illustrated by Wang DaiYu of International Illustrators Join Claire Bear (Ursus Aviatrix) as she journeys from Alfa to Zulu to present The Pilot Alphabet! P/N 13-06343

MY FIRST LOG BOOK AND ACTIVITY BOOK® VOL.2 - A smaller



version of the original ...these new spiral-bound books have fewer pages than the original blue book, but they are still full of fun and a great keepsake! With 44 pages total (including cover) there are 6 journal pages and about 30 pages of activities. The books are designed for girls (pink) and boys (blue) with pictures inside geared to each

one. This is perfect for children who don't fly too often or who mainly fly commercial. Volume 2 (Blue)..... P/N 13-04299

Volume 2 (Pink)..... P/N 13-04301

U.S. AND METRIC SYSTEM EQUIVALENTS

LENGTH EQUIVALENTS

| Unit | Millimeters | Centimeters | Inches | Feet | Yards | Meters |
|---------------|-------------|-------------|--------|---------|---------|---------|
| 1 Millimeter= | 1 | .1 | .03937 | .003281 | .001094 | .001 |
| 1 Centimeter= | 10 | 1 | .3937 | .032808 | .010936 | .01 |
| 1 Inch= | 25.4001 | 2.54001 | 1 | .083333 | .027778 | .025400 |
| 1 Foot= | 304.801 | 30.4801 | 12 | 1 | .333333 | .304801 |
| 1 Yard= | 914.402 | 91.4402 | 36 | 3 | 1 | .914402 |
| 1 Meter= | 1000 | 100 | 39.37 | 3.28083 | 1.09361 | 1 |

| Unit | Feet | Yards | Meters | Rods | Furlongs | Miles (Statute) |
|-------------------|------|-------|---------|------|-------------|-----------------|
| 1 Rod= | 16.5 | 5.5 | 5.02921 | 1 | .025 (1/40) | .003125 (1/320) |
| 1 Furlong= | 660 | 220 | 201.168 | 40 | 1 | .125 (1/8) |
| 1 Mile (Statute)= | 5280 | 1760 | 1609.35 | 320 | 8 | 1 |

1 Nautical Mile = 6080.2 feet = 1.15155 statute miles = 1/3 league.
1 Light Year = 5.879 trillion miles = 9.46 trillion kilometers.

WEIGHT EQUIVALENTS

| Unit | Grains | Grams | Ounces (Troy) | Ounces (Avoir.) | Pounds (Troy) | Pounds (Avoir.) | Kilo-grams |
|-------------------|---------|---------|---------------|-----------------|---------------|-----------------|------------|
| 1 Grain= | 1 | .064799 | .002083 | .002286 | .000174 | .000143 | .000065 |
| 1 Gram= | 15.4324 | 1 | .032151 | .035274 | .002679 | .002205 | .001 |
| 1 Ounce (Troy)= | 480 | 31.1035 | 1 | 1.09714 | .083333 | .068571 | .031104 |
| 1 Ounce (Avoir.)= | 437.5 | 28.3495 | .911458 | 1 | .075955 | .0625 | .028350 |
| 1 Pound (Troy)= | 5760 | 373.242 | 12 | 13.1657 | 1 | .822857 | .373242 |
| 1 Pound (Avoir.)= | 7000 | 453.592 | 14.5833 | 16 | 1.21528 | 1 | .453592 |
| 1 Kilogram = | 15432.4 | 1000 | 32.1507 | 35.2740 | 2.67923 | 2.20462 | 1 |

| Unit | Kilograms | Pounds (Troy) | Pounds (Avoir.) | Metric Tons | Net (Short) Tons | Gross (Long) Tons |
|---------------------|-----------|---------------|-----------------|-------------|------------------|-------------------|
| 1 Metric Ton = | 1000 | 2679.23 | 2204.62 | 1 | 1.10231 | .984206 |
| 1 Net (Short) Ton= | 907.185 | 2430.56 | 2000 | .907185 | 1 | .892857 |
| 1 Gross (Long) Ton= | 1016.05 | 2722.22 | 2240 | 1.01605 | 1.12 | 1 |

VOLUME AND CAPACITY EQUIVALENTS

| Unit | Cubic CM | Cubic In | Liters | Qts (Liq.) | Qts (Dry) | Gals. (Liq.) | Gals. (Dry) | Cubic Feet |
|--------------------|----------|----------|--------|------------|-----------|--------------|-------------|------------|
| 1 Cu. Centimeter= | 1 | .06102 | .001 | .00106 | .00091 | .00026 | .00023 | .00004 |
| 1 Cu. Inch= | 16.387 | 1 | .01639 | .01732 | .01488 | .00433 | .00372 | .00058 |
| 1 Gill= | 118.29 | 7.2188 | .125 | .10742 | .03125 | .02686 | .02686 | .00418 |
| 1 Pint (Liquid)= | 473.18 | 28.875 | .47318 | .5 | .42968 | .125 | .10742 | .01671 |
| 1 Pint (dry)= | 550.62 | 33.600 | .55062 | .58182 | .5 | .14546 | .125 | .01945 |
| 1 Liter= | 1000 | 61.023 | 1 | 1.0567 | .90808 | .26417 | .22702 | .03531 |
| 1 Quart (Liquid)= | 946.36 | 57.75 | .94636 | 1 | .85937 | .25 | .21484 | .03342 |
| 1 Quart (dry)= | 1101.2 | 67.201 | 1.1012 | 1.1637 | 1 | .29091 | .25 | .03889 |
| 1 Gallon (Liquid)= | 3785.4 | 231 | 3.7854 | 4 | 3.4375 | 1 | .85937 | .13368 |
| 1 Gallon (dry)= | 4404.9 | 268.80 | 4.4049 | 4.6546 | 4 | 1.1636 | 1 | .15556 |
| 1 Pack= | 8809.8 | 537.61 | 8.8098 | 9.3092 | 8 | 2.3273 | 2 | .31111 |
| 1 Cu. Foot= | 28317.0 | 1728 | 28.317 | 29.922 | 25.714 | 7.4805 | 6.4285 | 1 |
| 1 Bushel= | 35239.3 | 2150.4 | 35.239 | 37.237 | 32 | 9.3092 | 8 | 1.2445 |
| 1 Barrel= | 119241.2 | 7276.5 | 119.24 | 126 | 108.28 | 31.5 | 27.070 | 4.2109 |
| 1 Cu. Yard= | 764559.4 | 46656 | 764.56 | 807.90 | 694.28 | 201.97 | 173.57 | 27 |
| 1 Cu. Meter= | 1000000 | 61023.4 | 1000 | 1056.7 | 908.08 | 264.17 | 227.02 | 35.314 |

AREA EQUIVALENTS

| Unit | Square Inches | Square Feet | Square Yards | Square Meters |
|----------------------------|---------------|-------------|--------------|---------------|
| 1 Square Foot= | 144 | 1 | .1111 | .09290 |
| 1 Square Yard= | 1296 | 9 | 1 | .83613 |
| 1 Square Meter = | 1550 | 10.7639 | 1.19599 | 1 |
| 1 Square Rod= | 39204 | 272.25 | 30.25 | 25.293 |
| 1 Are= | 155000 | 1076.39 | 119.599 | 100 |
| 1 Acre= | 6272640 | 43560 | 4840 | 4046.86 |
| 1 Square Mile (640 Acres)= | - | 27878400 | 3097600 | 2589999 |
| 1 Square Kilometer= | - | 10763867 | 1195985 | 1000000 |

MISCELLANEOUS LIQUID MEASURE CONVERSIONS

| | |
|---------------------------|-------------------------|
| 1 Fl. Oz. = 1.805 Cu. In. | 1 Quart = 946 Cu. Cm. |
| 1 Fl. Oz. = 29.6 Cu. Cm. | 1 Gallon = 8 Pints |
| 1 Pint = 16 Fl. Oz. | 1 Gallon = 4 Quarts |
| 1 Quart = 32 Fl. Oz. | 1 Firkin = 9 Gallons |
| 1 Quart = 2 Pints | 1 Hogshead = 63 Gallons |

METRIC SYSTEM

LENGTH

| | | |
|-------------------|---|--|
| 1 Meter (m) | = | 10 decimeters (dm) 100 centimeters (cm) 1,000 millimeters (mm) |
| 1 dekameter (dkm) | = | 10 meters (m) |
| 1 hectometer (hm) | = | 100 meters (m) |
| 1 kilometer (km) | = | 1,000 meters (m) |

WEIGHT

| | | |
|------------|---|---|
| 1 gram (g) | = | 10 decigrams (dg) 100 centigrams (cg) 1,000 milligrams (mg) |
|------------|---|---|

| | | |
|------------------|---|-----------------|
| 1 dekagram (dkg) | = | 10 grams (g) |
| 1 hectogram (hg) | = | 100 grams (g) |
| 1 kilogram (kg) | = | 1,000 grams (g) |

| | | |
|--------------|---|---|
| 1 metric ton | = | 1,000 kilograms (kg) 1,000,000 grams (g) |
|--------------|---|---|

VOLUME & CAPACITY

| | | |
|-------------|---|---|
| 1 liter (l) | = | 1 cubic decimeter (dm ³) 10 deciliters (dl) 100 centiliters (cl) 1,000 milliliters (ml) 1,000 cubic centimeters (cm ³ or cc) |
|-------------|---|---|

| | | |
|-------------------|---|----------------|
| 1 dekaliter (dkl) | = | 10 liters (l) |
| 1 hectoliter (hl) | = | 100 liters (l) |

| | | |
|------------------|---|--|
| 1 kiloliter (kl) | = | 1 cubic meter (m ³) 1 stere (s) 1,000 liters (l) |
|------------------|---|--|

AREA

| | | |
|---------------------------------------|---|---|
| 1 centare (ca) | = | 1 square meter (m ²) 100 square decimeters (dm ²) 10,000 square centimeters (cm ²) 1,000,000 square millimeters (mm ²) |
| 1 are (a) | = | 1 square dekameter (dkm ²) 100 square meters (m ²) |
| 1 hectare (ha) | = | 100 ares (a) 10,000 square meters (m ²) |
| 1 square kilometer (km ²) | = | 1,000,000 square meters (m ²) |

Other prefixes occasionally used:

- micro—one millionth • myria—10,000 times
- deca—10 times (same as deka) • mega—1,000,000 times

AN/MS O-RING EQUIVALENTS

The AN6227B, AN6230B and MS28775 O-Rings have the same composition. For use in aircraft hydraulic systems using MIL-H-5606 petroleum base hydraulic fluid.

AN6227B/MS28775 Equivalents AN6230B/MS28775 Equivalents

| AN6227B Dash No. | MS28775 Dash No. | Nominal Size | | | AN6230B Dash No. | MS28775 Dash No. | Nominal Size | | |
|------------------|------------------|--------------|--------|---------|------------------|------------------|--------------|-------|-------|
| | | Width | I.D. | O.D. | | | Width | I.D. | O.D. |
| 1 | 6 | 1/16 | 1/8 | 1/4 | 1 | 223 | 1/8 | 1-5/8 | 1-7/8 |
| 2 | 7 | 1/16 | 5/32 | 9/32 | 2 | 224 | 1/8 | 1-3/4 | 2 |
| 3 | 8 | 1/16 | 3/16 | 5/16 | 3 | 225 | 1/8 | 1-7/8 | 2-1/8 |
| 4 | 9 | 1/16 | 7/32 | 11/32 | 4 | 226 | 1/8 | 2 | 2-1/4 |
| 5 | 10 | 1/16 | 1/4 | 3/8 | 5 | 227 | 1/8 | 2-1/8 | 2-3/8 |
| 6 | 11 | 1/16 | 5/16 | 7/16 | 6 | 228 | 1/8 | 2-1/4 | 2-1/2 |
| 7 | 12 | 1/16 | 3/8 | 1/2 | 7 | 229 | 1/8 | 2-3/8 | 2-5/8 |
| 8 | 110 | 3/32 | 3/8 | 9/16 | 8 | 230 | 1/8 | 2-1/2 | 2-3/4 |
| 9 | 111 | 3/32 | 7/16 | 5/8 | 9 | 231 | 1/8 | 2-5/8 | 2-7/8 |
| 10 | 112 | 3/32 | 1/2 | 11/16 | 10 | 232 | 1/8 | 2-3/4 | 3 |
| 11 | 113 | 3/32 | 9/16 | 3/4 | 11 | 233 | 1/8 | 2-7/8 | 3-1/8 |
| 12 | 114 | 3/32 | 5/8 | 13/16 | 12 | 234 | 1/8 | 3 | 3-1/4 |
| 13 | 115 | 3/32 | 11/16 | 7/8 | 13 | 235 | 1/8 | 3-1/8 | 3-3/8 |
| 14 | 116 | 3/32 | 3/4 | 15/16 | 14 | 236 | 1/8 | 3-1/4 | 3-1/2 |
| 15 | 210 | 1/8 | 3/4 | 1 | 15 | 237 | 1/8 | 3-3/8 | 3-5/8 |
| 16 | 211 | 1/8 | 13/16 | 1-1/16 | 16 | 238 | 1/8 | 3-1/2 | 3-3/4 |
| 17 | 212 | 1/8 | 7/8 | 1-1/8 | 17 | 239 | 1/8 | 3-5/8 | 3-7/8 |
| 18 | 213 | 1/8 | 15/16 | 1-3/16 | 18 | 240 | 1/8 | 3-3/4 | 4 |
| 19 | 214 | 1/8 | 1 | 1-1/4 | 19 | 241 | 1/8 | 3-7/8 | 4-1/8 |
| 20 | 215 | 1/8 | 1-1/16 | 1-5/16 | 20 | 242 | 1/8 | 4 | 4-1/4 |
| 21 | 216 | 1/8 | 1-1/8 | 1-3/8 | 21 | 243 | 1/8 | 4-1/8 | 4-3/8 |
| 22 | 217 | 1/8 | 1-3/16 | 1-7/16 | 22 | 244 | 1/8 | 4-1/4 | 4-1/2 |
| 23 | 218 | 1/8 | 1-1/4 | 1-1/2 | 23 | 245 | 1/8 | 4-3/8 | 4-5/8 |
| 24 | 219 | 1/8 | 1-5/16 | 1-9/16 | 24 | 246 | 1/8 | 4-1/2 | 4-3/4 |
| 25 | 220 | 1/8 | 1-3/8 | 1-5/8 | 25 | 247 | 1/8 | 4-5/8 | 4-7/8 |
| 26 | 221 | 1/8 | 1-7/16 | 1-11/16 | | | | | |
| 27 | 222 | 1/8 | 1-1/2 | 1-3/4 | | | | | |
| 28 | 325 | 3/16 | 1-1/2 | 1-7/8 | | | | | |
| 29 | 326 | 3/16 | 1-5/8 | 2 | | | | | |
| 30 | 327 | 3/16 | 1-3/4 | 2-1/8 | | | | | |

No MS28775 Equivalent for AN6230B-31 and Larger

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