

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.)	Burst Wall (In.)	Pressure (PSI)	Min. Bend Radius	Wt. (Lb/Ft)	Price per Ft.
05-01009	1/8	.026	1500	3/8"	.004	\$0.40
05-01010	3/16	.039	1500	5/8"	.008	\$0.05
05-01011	1/4	.050	1500	7/8"	.015	\$0.68
05-01012	3/8	.075	1500	1-1/2"	.032	\$1.34

NSR TUBING

Part No.	O.D. (In.)	Burst Wall (In.)	Pressure (PSI)	Min. Bend Radius	Wt. (Lb/Ft)	Price per Ft.
04-00907	1/8	.026	2500	3/8"	.004	\$0.37
04-00908	1/4	.050	2500	7/8"	.015	\$0.69
04-00909	3/8	.075	2500	1-1/2"	.032	\$1.51



NYLAFLOW NYLON TUBING

Nylon Polypenco® 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.

1/8" O.D. x .096 I.D.....P/N 05-00105\$0.10 Ft
3/16" O.D. x .138 I.D.....P/N 05-00110\$0.18 Ft
1/4" O.D. x .190 I.D.....P/N 05-00115\$0.33 Ft

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	\$0.63
1/4"	1/16"	05-00300	\$0.64
3/8"	1/16"	05-00400	\$0.65



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\$1.13 Ft
1/2" O.D. X 3/8" I.D.....P/N 05-00945\$2.35 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.

3/8" x 1/4".....P/N 05-00500\$1.67
1/4" x 1/8".....P/N 05-00560\$0.72

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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.	O.D. (In.)	Burst Wall (In.)	Min. Pressure (PSI)@75°F	Bend Radius	Wt. (Lb/Ft)	Price per Ft.
44-P	1/4	.040	400	1"	.14	.14
66-P	3/8	.062	350	1-1/4	.025	.42

CHEMICAL RESISTANCE

	Poly-Flo	Nylo-SealNSR
Chemical (at 72°F.)	(Polyethylene)	(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*	Max. Work Pressure*	Burst Pressure*	Max. Work Pressure*
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. Unaffected by oils, fuels, ozone and a wide range of corrosives down to -100°F. Tensile strength 5900 PSI. Used as fuel lines and engine breather lines in the VariEze. 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 0585-071\$1.19 Ft
1/2" O.D. x 3/8" I.D.....P/N 0585-107\$1.54 Ft
7/8" O.D. x 5/8" I.D.....P/N 0585-165\$4.80 Ft
7/8" O.D. x 5/8" I.D.(PVC).....P/N 0500-165\$1.61 Ft
1" O.D. x 3/4" I.D.(PVC).....P/N 0500-180\$1.77 Ft

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HOSE - HOSE FITTINGS

MIL-DTL 6000 OIL AND COOLANT HOSE



Inside and out, Aeroduct MIL-DTL 6000 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	\$3.55
6000-5	5/16	11/16	1,000	.16	\$3.80
6000-6	3/8	3/4	1,000	.18	\$3.80
6000-8	1/2	7/8	1,000	.22	\$3.95
6000-10	5/8	1	1,000	.26	\$4.45
6000-12	3/4	1-1/8	1,000	.27	\$5.50
6000-14	7/8	1-1/4	1,000	.32	\$5.60
6000-16	1	1-3/8	1,000	.38	\$5.90

MIL-H-6000 HOSE AVAILABLE IN 10 FT MAXIMUM LENGTHS

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	\$4.20
306-4	1/4	15/32	1,000	.072	\$2.30
306-6	3/8	19/32	1,000	.096	\$3.15
306-8	1/2	3/4	750	.144	\$4.40
306-10	5/8	7/8	700	.168	\$5.40



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	\$7.28
471-4D	1/4	7/16-20	\$4.86
471-6D	3/8	9/16-18	\$5.99
471-8D	1/2	3/4-16	\$17.39

*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*	\$26.70	1/2"	491-8	S-1051-8	\$30.80
1/4"	491-4	S-1051-4*	\$32.80	5/8"	491-10	S-1051-10	\$34.40
5/16"	491-5	S-1051-5*	\$24.50	3/4"	491-12	S-1051-12	\$34.60
3/8"	491-6	S-1051-6*	\$28.90				

*With Removable mandrel.

Aeroquip Qty. Discount: 15% for 20 ft.; 20% for 50 ft.; 25% for 100 ft. or more (Per Item)

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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 MILH-8794 (supersedes MIL-H-5511A). Used with Aeroquip 491 hose fittings.

Hose Part No.*	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	\$4.35
303-4	1/4	3/16	3,000	.132	\$4.65
303-5	5/16	1/4	3,000	.156	\$5.30
303-6	3/8	5/16	2,000	.228	\$5.70
303-8	1/2	13/32	2,000	.264	\$6.00
303-10	5/8	1/2	1,750	.372	\$7.10
303-12	3/4	5/8	1,500	.456	\$7.20

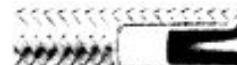
* Corresponds to dash no. of Aeroquip 491 hose fittings. ** Safety factor of 4.

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	\$11.60
601-6	3/8	11/32	1,000	.156	\$9.80
601-8	1/2	7/16	1,000	.168	\$11.80
601-10	5/8	11/16	1,000	.204	\$13.70

* Corresponds to dash no. of Aeroquip 816 hose fittings. ** Safety factor of 4.



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 used 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 used 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	\$6.60
666-5	.250	.375	1500	.09	\$7.10
666-6	.313	.466	1500	.11	\$9.10
666-8	.406	.562	1500	.14	\$11.90
666-10	.500	.656	1500	.19	\$14.50
666-12	.625	.789	1000	.24	\$15.90

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	\$36.20	666-8	05-01323	\$52.50
666-5	05-01321	\$37.20	666-10	05-01324	\$59.00
666-6	05-01322	\$41.70	666-12	05-01325	\$68.75



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	\$17.50	AE21502-H	666-8	\$17.90
AE21502-F	666-5	\$19.90	AE21502-J	666-10	\$27.10
AE21502-G	666-6	\$18.20	AE21502-K	666-12	\$26.90

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HOSE FITTINGS - ASSEMBLIES



AEROQUIP 816 & 8891 HOSE FITTINGS

Used with Aeroquip 601 Hose

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 Fittings		Size*	Nut Thread Size**	Aeroquip 8891 Fittings	
Part No.	Price Each			Part No.	Price Each
816-4	\$15.30	1/4	7/16-20	8891-4	\$38.80
816-6D	\$14.90	3/8	9/16-18	8891-6D	\$49.15
816-8D	\$17.95	1/2	3/4-16	8891-8D	\$60.50
816-10D	\$23.70	5/8	7/8-14	8891-10D	\$61.75

*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.

P/N 900591B-1C	\$1.56
P/N 900591B-2C	\$1.76
P/N 900591B-3C	\$1.85

Part No.	Use With Hose #		900591B Clamp Dash #	Price Per Ft.	Use With Hose #		900591B Clamp Dash #	Price Per Ft.
	303	601			303	601		
AE102-8	-3	-4	-1C	\$5.90	AE102-16	-10	-10	-3C \$9.90
AE102-9	-4	-5	-2C	\$6.10	AE102-18	-12	-	-3C \$10.40
AE102-10	-5	-	-2C	\$6.70	AE102-20	-	-12	-3C \$11.50
AE102-12	-6	-6	-2C	\$7.30	AE102-22	-16	-16	-3C \$14.40
AE102-14	-8	-8	-2C	\$8.85				

Quantity Discounts Same As Aeroquip Hose

Firesleeve Clamp Installation Tool P/N 05-00447 \$114.95
 Economy Firesleeve Clamp Tool P/N 12-00684 \$16.90

AEROQUIP AE466

INTEGRAL FIRESLEEVE TEFLON HOSE ASSEMBLIES



These Teflon hose assemblies have brown or blue Silicone firesleeves extruded directly to the hose and the fitting, forming a tight smooth bond that meets fire test requirements TSO-C53A and TSO-C75 III and B. These hoses are non-age sensitive for long life, have excellent chafe resistance, are lightweight and have a smaller envelope for better hose flexibility. End fittings are stainless steel (MIL-H-25579) Hose conforms to Teflon MIL-H-27287. Available in brown or blue. Measurements are taken from sealing surface to sealing surface.

Size	Aeroquip P/N	Base Price Blue & Brown	Blue Add / Inch	Brown Add / Inch
-3	AE3663161BXXXX	\$31.50	1.53	1.20
-4	AE3663161EXXXX	\$24.00	1.71	1.33
-5	AE3663161FXXXX	\$35.50	--	1.53
-6	AE3663161GXXXX	\$31.55	2.14	1.65
-8	AE3663161HXXXX	\$37.25	2.66	2.24
-10	AE3663161JXXXX	\$58.60	3.28	2.39
-12	AE3663161KXXXX	\$66.75	--	2.71



AEROQUIP 491 HOSE FITTINGS

Used with Aeroquip 303 Hose

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.

*Corresponds to tube O.D. of AN-type flared tube fittings. Not an Aeroquip dimension.

** Same thread size as AN818 nut of same dash number.

Part No.	Tube Size (In.)*	AN818 Nut Thread Size**	Price Each
491-3	3/16	3/8-24	\$8.38
491-4	1/4	7/16-20	\$7.04
491-5	5/16	1/2-20	\$8.29
491-6	3/8	9/16-18	\$8.66
491-8D	1/2	3/4-16	\$10.89
491-10D	5/8	1-1/16-12	\$16.46
491-12D	3/4	1-1/16-12	\$22.80

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 from sealing surface to sealing surface.

Size	Aeroquip P/N	Base Price	Add/Inches	Add/F.S.
-3	AE3660000BXXXX	\$33.50	.53	1.21
-4	AE3660000EXXXX	25.95	.54	.56
-5	AE3660000FXXXX	37.50	.63	.57
-6	AE3660000GXXXX	35.50	.79	.70
-8	AE3660000HXXXX	41.25	1.03	.77
-10	AE3660000JXXXX	62.50	1.31	.84
-12	AE3660000KXXXX	70.55	1.55	.94

AEROQUIP MS28741 CUSTOM RUBBER HOSE ASSEMBLIES

All hose assemblies are special-order and non-returnable.

Custom-fabricated MS28741 hose assemblies fabricated (Aeroquip #303 or equivalent) from MIL-H-8794 hose and MS24587 fittings (Aeroquip #491 or equivalent). All assemblies proof tested in accordance with specification MIL-H-3795. Specify hose size and length of assembly in inches & eighths of an inch from sealing surface to sealing surface.

Aeroquip P/N	Base Price	Add/Inches	Add/F.S.
350-3-XXXX	\$24.35	.40	.56
350-4-XXXX	19.25	.43	.56
350-5-XXXX	27.65	.46	.64
350-6-XXXX	24.95	.50	.73
350-8-XXXX	32.60	.54	.85

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 \$6.95



SILICONE HOSE

ID	OD	Wt/Ft. (Lb.)	Part No.	Price / Ft
1/4"	0.45"	.064	05-00659	\$2.55
3/8"	0.67"	.144	05-00660	\$6.00
5/8"	0.82"	.220	05-00661	\$6.85
3/4"	1.07"	.276	05-00671	\$7.50

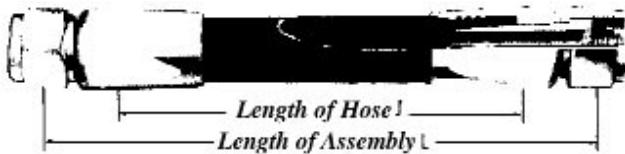
Temp. range -65°F to +350°F. Color; Blue

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.

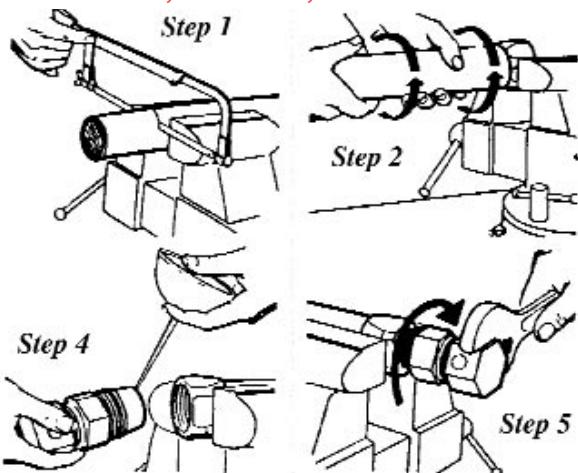


Hose & Fitting Dash No.	-3	-4	-5	-6	-8	-10	-12
Fitting Allowance* (In.)	1.30	1.30	1.48	1.54	1.88	2.00	2.00

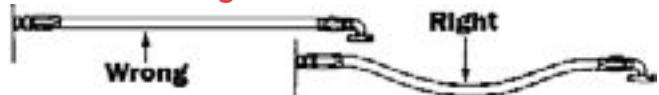
*Allowance for 2 fittings.

- 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, petroleum 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.

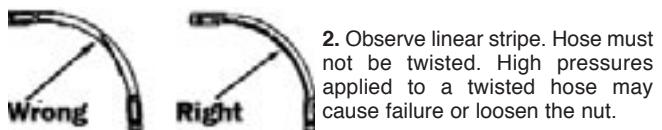
CLEAN, INSPECT, PROOF TEST



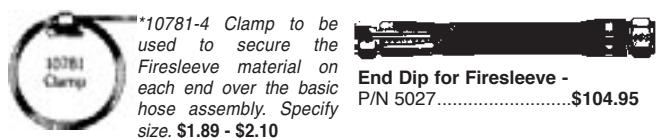
Planning hose line installations



1. Provide slack or bend in the hose line to provide for changes in length that will occur when pressure is applied.



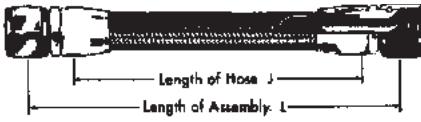
2. Observe linear stripe. Hose must not be twisted. High pressures applied to a twisted hose may cause failure or loosen the nut.



*10781-4 Clamp to be used to secure the Firesleeve material on each end over the basic hose assembly. Specify size. \$1.89 - \$2.10

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.

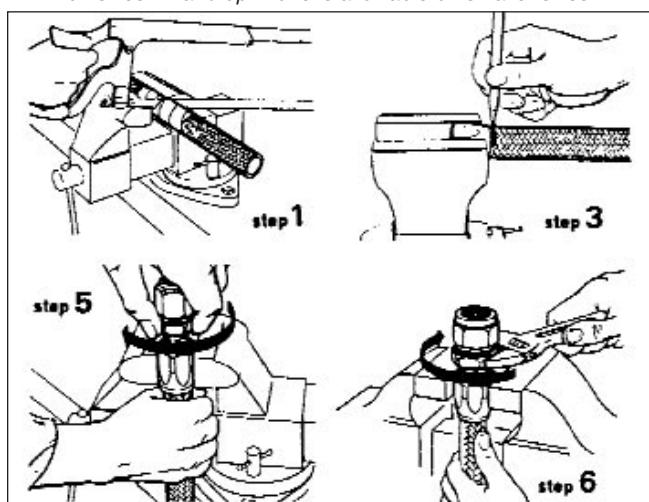
step 6 - Complete assembly using wrench while continuing to hold in position. Maximum allowable gap is .041" in sizes 3, 4, & 5, and .031" in size 6 & up.

step 7 - IMPORTANT—check for hose push-out by observing hose position mark. None should be evident.

AP

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 w/Hose No.				*10781-4 Clamp	Price Per Ft.
	124	193	11	156		
2650-6	-4					
2650-8	-6	-3	-	-4	22CR	\$5.90
2650-9	-	-4	-	-5	22CR	\$9.10
2650-10	-8	-	-4	-6	22CR	\$7.85
2650-11		-6				
2650-12	-10		-5,-6	-8	22CR	\$8.00
2650-13		-8	-8			
2650-14	-12	-	-	-	22CR	\$9.70
2650-16	-	-10	-10	-10	32CR	\$10.10
2650-18	-	-	-	-12	32CR	\$11.50
2650-20	-16	-	-12	-	32CR	\$12.50
2650-22	-	-	-16	-16	32CR	\$14.60

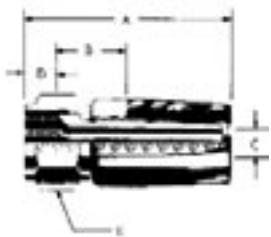
STRATOFLEX HOSE & FITTINGS

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	\$5.90
111-5	.312	.250	3000	.0130	\$8.00
111-6	.375	.312	2000	.0190	\$6.90
111-8	.500	.406	2000	.0220	\$7.10
111-10	.625	.500	1750	.0310	\$8.20
111-12	.750	.625	1500	.0380	\$12.80
111-16	1.00	.875	800	.0368	\$14.70

STRATOFLEX 300 STRAIGHT FLARED FITTINGS FOR 111 HOSE



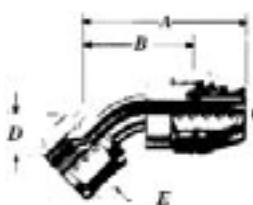
Part No.	Tube O.D.	Thread	Price Ea.
300-3S	.188	3/8-24	\$13.40
300-4S	.200	7/16-20	\$10.40
300-5S	.312	1/2-20	\$13.60
300-6S	.375	9/16-18	\$13.40
300-8D	.500	3/4-16	\$17.50
300-10D	.625	7/8-14	\$23.10
300-12D	.750	1-1/16-12	\$26.30
300-16D	1.00	1-5/16-12	\$41.70

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	\$10.40
156-4	.250	.219	1500	2.00	\$15.40
156-5	.312	.281	1500	2.25	\$12.00
156-6	.375	.344	1500	2.50	\$11.40
156-8	.500	.438	1250	3.50	\$18.60
156-10	.625	.562	1250	4.00	\$20.10
156-12	.750	.688	1250	4.50	\$22.50
156-16	1.000	.875	1000	5.50	\$28.50

STRATOFLEX 678 45° ELBOW FLARED FITTINGS FOR 156 HOSE



Part No.	Tube O.D.	Thread	Price Ea.
678-3S	.188	3/8-24	\$99.95
678-4S	.250	7/16-20	\$45.40
678-6D	.375	9/16-18	\$54.25
678-8D	.500	3/4-16	\$62.75
678-10D	.625	7/8-14	\$83.75
678-12D	.750	1-1/16-12	\$83.25
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	\$5.30
193-3	.41	.188	250	.0050	\$2.60
193-4	.48	.250	200	.0058	\$2.75
193-6	.60	.375	150	.0079	\$3.80
193-8	.75	.500	150	.0015	\$5.20
193-10	.87	.625	150	.0138	\$6.10

STRATOFLEX 646/640 45° ELBOW FLARED FITTINGS FOR 111 HOSE



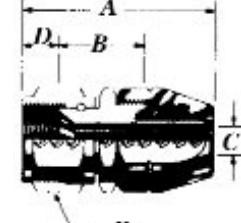
Part No.	Tube O.D.	Thread	Price Ea.
646-4S	.250	7/16-20	\$51.75
646-6S	.375	9/16-18	\$57.00
646-8D	.500	3/4-16	\$73.75
646-10D	.625	7/8-14	\$84.50
640-12D	.750	1-1/16-12	\$159.95
640-16D	1.00	1-5/16-12	\$209.65

STRATOFLEX 649/643 90° ELBOW FLARED FITTINGS FOR 111 HOSE



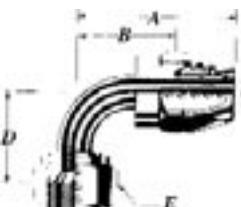
Part No.	Tube O.D.	Thread	Price Ea.
649-4S	.250	7/16-20	\$49.10
649-6S	.375	9/16-18	\$78.50
649-8D	.500	3/4-16	\$67.50
649-10D	.625	7/8-14	\$87.00
649-12D	.750	1-1/16-12	\$142.95

STRATOFLEX 676 STRAIGHT FLARED FITTINGS FOR 156 HOSE



Part No.	Tube O.D.	Thread	Price Ea.
676-3S	.188	3/8-24	\$27.80
676-4S	.250	7/16-20	\$17.60
676-5S	.312	1/2-20	\$51.25
676-6D	.375	9/16-18	\$16.40
676-8D	.500	3/4-16	\$18.90
676-10D	.625	7/8-14	\$24.20
676-12D	.750	1-1/16-12	\$30.40
676-16D	1.000	1-5/16-12	\$58.50

STRATOFLEX 680 90° ELBOW FLARED FITTINGS FOR 156 HOSE



Part No.	Tube O.D.	Thread	Price Ea.
680-4S	.250	7/16-20	\$54.00
680-5S	.312	1/2-20	\$116.95
680-6D	.375	9/16-18	\$52.00
680-8D	.500	3/4-16	\$60.00
680-10D	.625	7/8-14	\$66.25
680-12D	.750	1 1/16-12	\$99.95
680-16D	1.000	1 5/16-12	\$110.95

STRATOFLEX 311 STRAIGHT FLARED FITTING FOR 193 HOSE

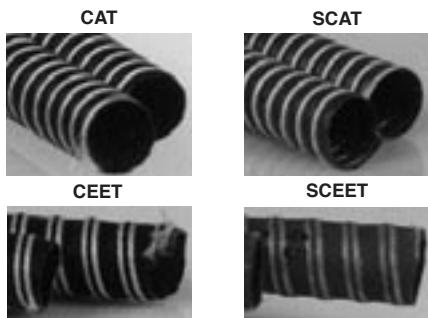


Part No.	Tube O.D.	Thread	Price Ea.
311-2D	.125	5/16-24	\$13.90
311-3D	.188	3/8-24	\$9.10
311-4D	.250	7/16-20	\$8.50
311-6D	.375	9/16-18	\$9.90
311-8D	.500	3/4-16	\$24.50
311-10D	.625	7/8-14	\$97.75

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



AERODUCT FLEXIBLE DUCTING

"CAT" - Aeroduct "CAT" type flexible hot or cold air ducting is 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. It will withstand temperatures from -65° to over 300°F.

"SCAT" - "SCAT" type ducting has the same type construction as "CAT" except with red silicone rubber impregnation. Withstands temperatures from -80° to over 450°F.

"CEET" - Aeroduct "CEET" type ducting has two plies of neoprene-impregnated fiberglass, similar to CAT except wire between plies. Withstands temperatures from -65° to over 350°F.

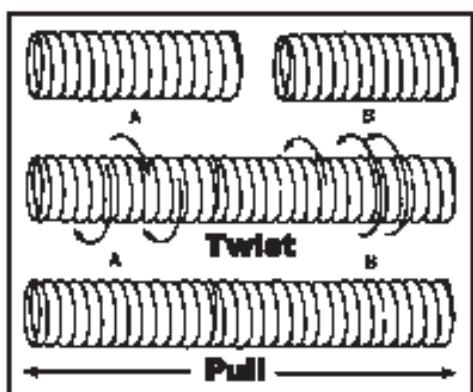
"SCEET" - "SCEET" type ducting has two plies of silicone rubber-impregnated fiberglass, similar to SCAT except wire between plies. Withstands temperatures from -80° to over 500°F.

Aeroduct Dash No.	Inside Diameter	CAT		SCAT		CEET		SCEET	
		Part Number	Price Per Foot						
-2A	5/8"	05-29801	\$3.75	05-29901	\$3.10	05-30501	\$4.10	05-30601	\$3.85
-3	3/4"	05-29802	\$3.25	05-29902	\$3.15	05-30502	\$3.90	05-30602	\$3.95
-3A	7/8"	05-29803	\$3.20	05-29903	\$3.35	05-30503	\$3.95	05-30603	\$4.40
-4	1"	05-29804	\$3.50	05-29904	\$3.30	05-30504	\$4.45	05-30604	\$4.90
-5	1-1/4"	05-29805	\$3.60	05-29905	\$3.60	05-30505	\$5.20	05-30605	\$5.50
-6	1-1/2"	05-29806	\$3.95	05-29906	\$3.85	05-30506	\$5.20	05-30606	\$6.10
-7	1-3/4"	05-29807	\$4.25	05-29907	\$4.15	05-30507	\$5.30	05-30607	\$6.80
-8	2"	05-29808	\$4.15	05-29908	\$4.70	05-30508	\$5.60	05-30608	\$7.40
-9	2-1/4"	05-29809	\$4.45	05-29909	\$5.10	05-30509	\$5.20	05-30609	\$8.10
-10	2-1/2"	05-29810	\$5.10	05-29910	\$5.60	05-30510	\$6.20	05-30610	\$8.50
-11	2-3/4"	05-29811	\$5.30	05-29911	\$6.10	05-30511	\$6.50	05-30611	\$8.90
-12	3"	05-29812	\$5.95	05-29912	\$6.20	05-30512	\$6.70	05-30612	\$9.30
-13	3-1/4"	05-29813	\$6.70	05-29913	\$6.60	05-30513	\$7.80	05-30613	\$9.80
-14	3-1/2"	05-29814	\$6.90	05-29914	\$7.35	05-30514	\$7.90	05-30614	\$10.20
-15	3-3/4"	05-29815	\$7.00	05-29915	\$7.40	05-30515	\$7.80	05-30615	\$10.80
-16	4"	05-29816	\$7.65	05-29916	\$8.50	05-30516	\$8.30	05-30616	\$12.30
-18	4-1/2"	05-29818	\$7.90	05-29918	\$8.70	05-30518	\$9.00	05-30618	\$12.60
20	5"	05-29820	\$8.20	05-29920	\$9.40	05-30520	\$10.10	05-30620	\$16.30
24	6"	05-29824	\$8.85	05-29924	\$11.40	05-30524	\$12.60	05-30624	\$17.60

Diameters not listed are available as a special order in full lengths only. Order CAT 2-3/4" diameter for Whisperflow air vents. Minimum order length on all aeroduct ducting is 2 ft. 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	\$6.70
1-1/4"	10350-5	\$10.10
1-1/2"	10350-6	\$7.10
1-3/4"	10350-7	\$10.50
2"	10350-8	\$7.30
2-1/4"	10350-9	\$10.90
2-1/2"	10350-10	\$7.60
2-3/4"	10350-11	\$16.35
3"	10350-12	\$8.40

Discount: 10% On 20; 15% On 50,
20% On 100 (Assorted)

**Visit www.aircraftspruce.com
For Product Information
24 Hours a Day**

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.....\$47.00

AP

SOUNDPROOFING – INSULATION

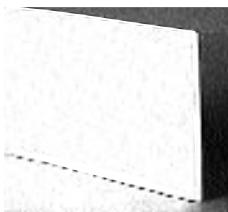


E-A-R-COMPOSITE DAMPING FOAM

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\$98.25 / sheet

Less 10% discount on 10 or more sheets

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 builtts. Apply to firewall, fuselage — anywhere a vibration problem exists. Wt.4 oz./sq. ft., 1/4" thick, 6" x 48" (2 sq. ft.)

P/N 09-30200\$19.50/ea.
P/N 09-30212\$19.50/ea.
P/N 09-30218\$19.50/ea.

Less 15% on 12 or more pieces

AP



ALUMINUM FOIL TAPE

The ultimate in moisture vapor protection! A dead soft aluminum foil tape which is an excellent reflective heat shielding. Effective sound and vibration damping tape. High-tack adhesive backing adheres tightly when smoothed down. Practically non-aging because of stability of aluminum foil. Meets specification L-T-80B. Often used to overlap edges of sound and vibration tape described above.

1" x 60 Yd. RollP/N 09-30300\$26.70
2" x 60 Yd. RollP/N 09-30400\$59.75



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 and is FAA/PMA approved. Operable temperature range: -100°F to +500°F. Width: 1". Roll length: 6 yds. Tkns: .012"

P/N 09-31805\$27.30/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 tapeP/N 05-01024\$31.50/roll
10 Mil Anti-Chafe tapeP/N 05-01025\$44.95/roll



SUPER 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. Odorless and non-toxic when dry. Shelf life: 1-year. Not FAA approved.

Gallon.....P/N 09-00772\$19.30



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" wideP/N 09-42745\$12.50/ea.

1" wideP/N 09-00381\$8.40/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. Sold by lineal foot. **FAA approved.**

P/N 09-42750\$14.60 / lin.ft.

Floormat 4" wide X 25' RollP/N 09-00433\$38.50 / roll

Floormat without foam backing ..P/N 09-42751\$12.10 / 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 09-42755FREE

SUPER SOUNDPROOFING SHEET

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. Comes complete with instructions and lab flammability test reports from FAA certified lab.

Thick-ness	Wt. per 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	\$5.50	3/4"	1.4 lbs.	42727	\$18.70
1/4"	.60 lbs.	42720	\$9.70	1"	2.0 lbs.	42730	\$20.80
3/8"	.80 lbs.	42723	\$11.85	1-1/2"	3.0 lbs.	72731	\$33.40
1/2"	1.0 lbs.	42725	\$14.60	2"	4.0 lbs.	42760	\$29.75

SUPER SOUNDPROOF SHEET WITH ADHESIVE BACKING

3/8" Thick09-00443\$19.95 / ft.

1/2" Thick09-00444\$22.40 / ft.



UNI-WRAP SILICONE 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 unlimited shelf life and after fusing is unaffected by moisture, cold, heat, ozone shock, or vibration. Meets MIL-I-46852 Types I and 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\$9.95



COWLING CHAFE SEAL

Off-white, 100% non-asbestos woven tape. Unaffected by most chemicals and temperatures. 15' roll. 1"....P/N 09-31800 ..\$15.90 rl

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 plies 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	\$26.80 ea
Insulator – two ply 4' x 6' sheet	P/N 09-27405	\$56.75 ea
Insulator – two ply 2' x 6' sheet	P/N 09-00282	\$33.10 ea
Insulator – three ply 4' x 6' sheet	P/N 09-27410	\$83.00 ea
Insulator – three ply 2' x 6' sheet	P/N 09-00283	\$46.00 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	\$4.10 /ft.
Double side foil, single layer #6016; 2 ft wide P/N 09-00275	\$2.30 /ft.
4 ft wide P/N 09-06016	\$4.55 /ft.

Double side foil, double layer #3200 P/N 09-00226	\$9.85 /ft.
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Discount: less 15% for 100 ft. (per P/N)



STICKY STUFF ADHESIVE

Stick 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

\$9.80/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\$3.35/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, dispenser box/work platform 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-16 (2"), utility knife, dispenser box/work platform
P/N 09-95505

\$1,138.00/box

2" blanket-in-a-box contains 1 roll (2"x20"x50') Orcotek strip blanket
1 roll of Orcotape OT-16 (3"), utility knife, dispenser box/work platform
P/N 09-45010

\$995.00/box



AIRCRAFT CARPET TAPE

Orcotape OT-60 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" widthP/N 09-45035\$16.90



INSULATION REPAIR & FABRICATION TAPE

Orcotape OT-16 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" widthP/N 09-45040

\$64.85/ea.

3" widthP/N 09-45045

\$97.30/ea.

AP

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-16 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" wideP/N 09-45015

\$8.35/linear ft.

2" thick x 20" wideP/N 09-45020

\$12.70/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. tubeP/N 09-00277

\$5.60

7 oz. tubeP/N 09-00278

\$13.90

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 970F \$3.75 Lin ft.
1/8" Thick P/N 970J \$6.65 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 \$19.85
Fiberfrax Adhesive Gal P/N 05-00900 \$124.75

AP



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 \$4.85/ft.
3/4" Th x 3" W P/N 05-02100 \$9.75/ft.

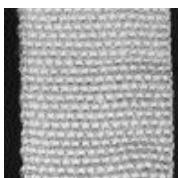


RUBBER SHEET PACKING

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 \$7.95

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.

P/N 09-31500 \$0.95/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 \$38.60

Less 15% on 25ft. roll



FIREWALL 2000 CAULK

For sealing or joining seams; it is applied like standacaulk but will expand under direct flame to insulate. Flammable.

P/N 05-00949 \$18.90

FIREWALL 2000 KIT

Contains 24"x48" sheet of Firewall 2000 and one tube of firewall caulk. Flammable. P/N 05-00950 \$173.30

FIREWALL BLANKET

Firewall blanket is black in color and comes 54" 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.

P/N 09-00276 \$19.85 /Linealft.



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 \$28.50/lin ft.

Beige P/N 09-01277 \$28.50/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 \$29.95 ft.

PRE-CUT PYROGLASS CLOTH BAFFLE STRIP

Cut from Pyroglass cloth above.

3"x 84" P/N 05-00700 \$15.85



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 \$9.50

Flat Black 16 oz. aerosol spray P/N 08-00714 \$9.50

Flat Black Quart Can P/N 08-00716 \$49.65



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.

Qt. P/N 09-05760 \$13.92

Gal. P/N 09-00274 \$51.75

**SEE THE ENGINE PARTS SECTION OF THE CATALOG
FOR MORE INSULATION PRODUCTS!**

RUBBER CHANNEL - COWL SEAL



HIGH QUALITY RUBBER CHANNEL

Good-grade neoprene. Soft, flexible, oil-resisting.

- Style B: 1/2" high on right, 3/8" high on left, 1/16" groove 05-00596 ..\$0.80/ft
 Style C: 3/8" high, 1/8" groove, 1/4" across bottom05-00597 ..\$0.85/ft
 Style D: 1/2" high on left, 3/16" on right05-00598 ..\$0.88/ft
 Style E: 1-1/8" overall05-00599 ..\$1.86/ft



U CHANNEL

Black 65 duro EPOM U-channel.

Groove	P/N	Height	Price / Ft.
1/16"	05-01600	9/16"	\$1.32
1/16"	05-02200	3/8"	\$1.13
1/8"	05-00951	5/16	\$0.76
1/4"	05-00952	9/16"	\$0.99

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 AMS3220. Available in red, blue & black.

IRON OXIDE RED

- 3/32" thick x 3" wide x 9' longP/N 05-00775\$20.54
 3/32" thick x 36" wideP/N 05-00781\$22.50 /ft
 1/8" thick x 2" wide x 9' longP/N 05-00795\$11.60
 1/8" thick x 3" wide x 9' longP/N 05-00755\$18.05
 1/8" thick x 4" wide x 9' longP/N 05-00760\$27.65
 1/8" thick x 36" wideP/N 05-00772\$23.80 /ft
 1/8" thick x 3"W x 9' (w/fiberglass mat)P/N 05-00770\$44.63
 1/8" thick x 36"W (w/fiberglass mat)....P/N 05-00771\$45.50 /ft

LIPSTICK RED

- 3/32" thick x 36" wideP/N 05-00786\$29.00 /ft

BLUE

- 3/32" thick x 3" wide x 9' longP/N 05-00790\$23.69
 3/32" thick x 36" wideP/N 05-00806\$29.00 /ft
 1/8 " thick x 3"W x 9' (w/fiberglass mat) ..P/N 05-00792\$33.90
 1/8 " thick x 36"W (w/fiberglass mat).....P/N 05-00791\$45.20 /ft

BLACK

- 3/32" thick x 3" wide x 9' longP/N 05-00810\$16.64
 3/32" thick x 36" wideP/N 05-00811\$24.90 /ft
 1/8 " thick x 3"W x 9' (w/fiberglass mat) ..P/N 05-00826\$37.97
 1/8 " thick x 36"W (w/fiberglass mat).....P/N 05-00825\$43.20 /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.

CALL FOR PRICE AND P/N FOR KIT FOR YOUR AIRCRAFT

BAFFLE FASTENER KIT

This engine baffle fastener kit makes attaching baffle material much easier. The kit includes 12 soft aluminum fasteners in two lengths.

- 1 Set.....P/N 05-56140\$0.26
 Pkg. of 12 SetsP/N 05-01829\$3.12

COWL SEAL HARDWARE & TOOLS

GB4-3A: Rivet - (Buttonhead) 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 100P/N 05-56100\$4.25

GB-A4: Back-up Washers 1/8" Dia. x 1/4" Grip

Pkg of 150P/N 05-56130\$4.25

GB-SF- 3/16: Screw Fastener (Post Type) Used for joining sides or overlapping of baffle material.

.....P/N 05-56140\$0.26

GB4-3AW: Rivet (white) 1/8" Dia. x 3/16"Grip (button head)

Qty. 100P/N 05-56132\$4.25

GB4-3AB: Rivet (black) 1/8" Dia. x 3/16"Grip (button head)

Qty. 100P/N 05-56133\$4.25

GBL4-3A: Rivet (Large Flange) 1/8" Dia. x 3/16"Grip

Qty. 100P/N 05-56134\$4.25

GBL4-2AW: Rivet (Large Flange white) 1/8" Dia. x 1/8"Grip

Qty. 100P/N 05-56135\$4.25

Silicone Revolving Punch Tool Makes various size holes in baffle material.

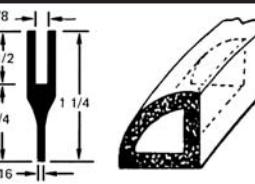
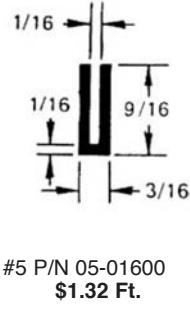
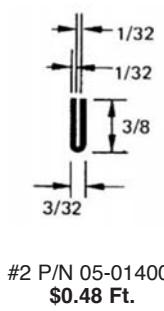
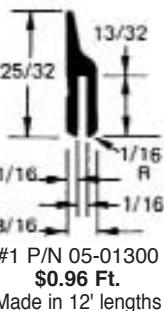
P/N 72\$8.90

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

RUBBER CHANNELS & MOLDING

Soft, flexible oil-resistant black rubber molding for use in fitting windshields and as an anti-chafe strip for fairings. Order by number. Illustrations are approximately full size.



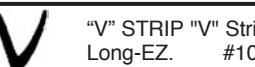
Open Center

1/2" Legs 3/4" Curve
 3/8" Radius
 Made in 10' Lengths
#4 P/N 05-01500\$1.10 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.#7P/N 05-01700\$0.99 Ft



Anti-Chafe Molding for fuel tank straps. Neoprene channel accommodates metal straps 1" wide.
#9 P/N 05-01800\$1.82 ft



"V" STRIP "V" Strip Canopy Channel 20 Ft. required for Long-EZ. #10P/N 05-01900\$0.60 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. RollP/N 05-00000\$41.20



PIPER DOOR SEAL - Used on Piper, Mooney and others, small cell sponge rubber. Packaged in 25 foot rolls JM189139. 25 ft. RollP/N 05-00010\$59.95



BAGGAGE DOOR SEAL - Flexible small cell sponge rubber seal used on many aircraft baggage doors. Packaged in 25 foot rolls. 25 ft. RollP/N 05-00020\$56.85



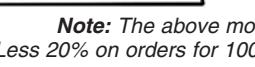
PIPER WING ROOT SEAL - Black packaged in 12-foot lengths, adequate for one wing root. 12 ft. RollP/N 05-00030\$35.75



BEECH WING ROOT SEAL - Black, packaged in 12-foot lengths, adequate for one wing root. 12 ft. RollP/N 05-00040\$46.85



J-3, PA-18 DOOR GAP SEAL - 24" length Standard color, black. P/N 05-00953\$5.69



Note: The above moldings are not FAA approved.
 Less 20% on orders for 100 ft. or more per style. (All channels)

SILICONE BAFFLE SEALS

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. **NOTE:** 15% discount for full 80 yd. rolls of 1-1/2 x3" wide material or 3 or more 36"x38" sheets.

Description	P/N	Price	Description	P/N	Price
Black, 3"W	05-01675	\$2.22	Drk blue,36"x38"shrt	05-01771	\$91.93
Blk,36"x38"shrt	05-01676	\$78.93	Med blue, 3" wide	05-01772	\$3.16
Black,1-1/2"W	05-01677	\$1.36	Med blue,36"x38"shrt	05-01773	\$91.93
Red,3" wide	05-01768	\$2.84	Orange, 3" wide	05-01774	\$2.74
Red,36"x38"shrt	05-01769	\$91.93	Orange,36"x38"shrt	05-01775	\$71.33
Dark Blue,3"W	05-01770	\$0.99			

CHAFE SEAL -BOOTS - COVERS

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

P/N 05-01200\$6.70 Ea.

D-STRIP WEATHERSEAL

17' Roll 5/16" thick x 23/64" wide.

P/N 05-00897\$7.40 Ea.

ALL STRIP WEATHERSEAL

17' Roll 5/16" thick x 19/64" wide.

P/N 05-00898\$9.50 Ea.

AP

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\$35.95

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\$21.50



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 closedP/N 05-00667\$35.95



BEECHCRAFT TAIL ROOT SEAL

A set of two tail root seals for models 33-36.

P/N 05-00669\$38.50



BEECHCRAFT RUDDERVATOR SEAL

A set of two ruddervator seals for model 35.

P/N 05-00670\$35.95



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\$74.95



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\$12.50



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 #S2729-1P/N 05-00663\$5.00/ft.



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\$12.50



GB56 SILICONE ANTI-CHAFE SEAL

This black silicone anti-chafe seal is 1/16" thick and 1" wide. Comes with silicone adhesive.

Sold in 15ft. rolls.P/N 05-00664\$21.70



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\$11.30

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE



TAILWHEEL BOOTS

Cessna 195P/N 09-17350\$20.30
StaggerwingP/N 09-17352\$54.25
StearmanP/N 09-17355\$29.90

PIPER SHOCK BOOTS / COVERS

Aircraft	Description	Part No.	Price
PA-221	Piece Control Col. Boot	09-17410	\$18.30
PA-25	Gate Control Rod Boot	09-17375	\$19.80
PA-25,SN25-2000—4171	Shock Strut Boots, pair	09-17377	\$24.40
PA-12		09-17357	\$29.80
J-3		09-17360	\$33.80

MISCELLANEOUS BOOTS / COVERS

Aircraft	Description	Part No.	Price
Aeronca 7AC	Joy Stick Covers	09-17362	\$20.40
Cessna172 (also fits 182)	Steering Linkage Covers	09-17365	\$8.80
Citabria	Interior Boots	09-17367	\$26.50
Beech Bonanza	Gear Boots for Main Gear	09-17370	\$33.00
Beech Bonanza	Dust Boot for Retract. Nose Gear	09-17372	\$10.15



SQUEEZE-OUT DOOR SEAL KITS

This door seal, manufactured by Aero-PMA-Parts, is made from a material that has "micro-memory fibers" to allow a perfect fit. It is larger than the original factory door seal which allows it to completely hug the door to leave no gaps. It is installed on the door itself, in the door channel, which prevents the seal from tearing or falling out. The Squeeze-Out Door Seal keeps water, cold, wind and noise out of your aircraft. The seal is designed for use on multiple aircraft make/model applications. Currently approved for Piper Cherokee, with FAA approval for more Piper, Cessna, Mooney, and Beech aircraft expected soon.P/N05-01504\$112.50



PIPER DOOR SEALS

This new seal was developed from a special rubber compound that meets military specifications and FAA requirements for aircraft seals. The rubber compound developed for the seal has a memory, compresses and conforms to the sealing surface providing a perfect seal. The seal comes with pressure sensitive adhesive that makes it easy to apply and bonds well with any metal surface painted or bare. The new seal does not install on the door, but instead installs in the channel on the fuselage opening, which allows for complete closing and sealing of the doors. This provides for an air- and water-tight seal. A seal kit was also designed for the baggage doors that have had a history of leaking water. FAA-PMA approved. Each seal kit contains 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). A tube of super glue is also provided to bond the cut ends.

Description	Part No.	Price
PA-28 Front Entry Door	05-01240	\$69.95
PA-28 Rear Baggage Door	05-01241	\$69.95
PA-32 Front Entry Door	05-01242	\$69.95
PA-32 Front Baggage Door	05-01243	\$69.95
PA-32 Rear Entry Door-No Cargo Door	05-01244	\$69.95
PA-32 Rear Entry Door w/Cargo Door	05-01245	\$69.95
PA-34 Front Entry Door	05-01246	\$69.95
PA-34 Front Baggage Door	05-01247	\$69.95
PA-34 Rear Entry Door w/Cargo Door	05-01248	\$69.95
Mooney Baggage Door	05-02481	\$69.95
Mooney Vent Window	05-02483	\$69.95
Mooney Baggage Door	05-02482	\$69.95
Experimental	05-01249	\$69.95

• Mooney Door Seals

• Experimental

• Call for Quotation

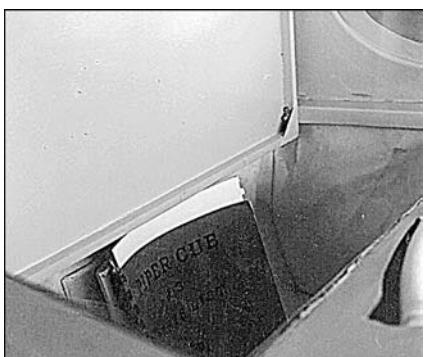
• Provide Door Dimensions for Quotation

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 SealP/N 05-01610\$69.95
Cessna Window SealP/N 05-01611\$39.95
Cessna Baggage Door SealP/N 05-01612\$39.95
Cessna AFT ENT/CARGO Door SealP/N 05-01613\$79.50
Cessna 207 Front Bag Door SealP/N 05-01614\$39.95

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	Aircraft	Part No.	Price
Aeronca 7AC	09-17265-	\$93.25	Luscombe 8A	09-17302-	\$168.95
Aeronca 11AC	09-17270-	\$163.95	Piper J3	09-17305-	\$82.75
Aeronca 120/140*	09-17275-	\$92.00	Piper J4	09-17307-	\$82.75
Cessna 150*	09-17280-	\$92.25	Piper J5	09-17310-	\$111.95
Cessna 172*	09-17285-	\$87.75	Piper PA12	09-17312-	\$107.95
Cessna 310*	09-17290-	CALL	Stearman	09-17315-	\$61.25
Ercoupe	09-17295-	\$94.25	Taylorcraft	09-17317-	\$36.20
Fairchild 24	09-17300-	\$239.95			

*Available in Off-white (-1), Off-white wool (-2), Tan Wool (-3), Grey Wool (-4).

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

- | | |
|--|--|
| • CESSNA, 310, 320 | • PA32, 34 REAR AND CARGO DOORS WHEN
- ADDED TO THE EXISTING SYSTEM |
| • CESSNA, 170, 175, 180, 182, 185, 206, 210 | • PIPER PA31 CABIN DOOR |
| • CESSNA P210, CABIN & EMGCY, EXIT | - CREW DOORS - BOTH DOORS |
| • BEECH 33, 35, 36, 50, 55, 56, 95, 58 | • BEECH 36, 58 CABIN & REAR DOORS |
| • MOONEY ALL MODELS | - ELECTRIC ONLY |
| • PIPER PA23 SERIES | • REAR DOORS ADDED TO EXISTING
SYSTEM |
| • PIPER PA24, 30, 39, 40 | • BFA 3000 COMPRESSOR NEW |
| • PIPER PA28, 32, 34, 44 | • RH50 RESISTOR PAK |
| • BELLANCA | • BEECH 58 P SERIES SEAL |
| • PIPER AEROSTAR 601P, 602P, 700P | • CESSNA P337 |
| - CABIN DOOR - EMERGENCY EXIT | |
| • PIPER PA32, 34, CABIN,
REAR & CARGO DOORS | |

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 \$35.95



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-	\$254.95	Piper J-3	09-17330-	\$80.89
Bellanca	09-17322-		Piper J-5	09-17332-	\$280.95
\$1,344.00			Piper PA-12	09-17335-	
Citabria	09-17325-	\$163.95	Piper PA-22	09-17337-	\$139.95
KR-1 & 2	09-17327-	\$133.95			

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....\$47.00



AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE



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 AERCEM \$9.90

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

AP

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	AIRCRAFT	PART NO.	PRICE	AIRCRAFT	PART NO.	PRICE
Aeronca			Cessna			Piper		
7AC	09-17454	\$176.95	182 (56)	09-17492	\$304.95	PA-16 Clipper*	09-17532	\$231.95
11AC	09-17455	\$173.95	182 (57-59)	09-17494	\$304.95	PA-18 Super Cub*	09-17534	\$140.95
15AC	09-17456	\$233.95	182 (60-61)	09-17495	\$305.95	PA-20/22 (51-52)*	09-17535	\$222.95
Chief 65CA	09-17458	\$168.95	182 (62, Omnidvision)	09-17496	\$304.95	6 bows, 2 zippers		
Chief LA65	09-17460	\$199.95	185 (75)	09-17498	\$305.95	PA-20/22 (52-58)*		
L-3 Defender	09-17462	\$216.95	206/207	09-17510	\$308.95	8 bows, 3 zippers	09-17536	\$272.95
Bellanca Scout			210 (75)	09-17512	\$309.95	Colt 108*	09-17538	\$237.95
w/Greenhouse	09-17464	\$184.95	310	09-17514	\$309.95	PA-23/250 (early 1960)	09-17540	\$298.95
Super Viking 1730	09-17466	\$167.95	Citabria	09-17515	\$182.95	PA-24 ² (thru 1965)	09-17542	\$298.95
Cessna			w/Greenhouse	09-17516	\$217.95	PA28/32 ³	09-17544	\$204.95
120/140	09-17468	\$246.95	Commonwealth	09-17518	\$330.95	PA-31	09-17545	\$408.95
150 (59)	09-17470	\$207.95	Skyranger			Stinson		
150 (60)	09-17472	\$206.95	Fairchild	24		108 ⁴	09-17546	\$246.95
150 (61-63)	09-17474	\$206.95	Mauler	09-17520	\$249.95	10A	09-17548	\$278.95
150 (64-65)	09-17475	\$206.95	Piper	09-17522	\$303.95	105-HW75	09-17550	\$177.95
150 (66-68)	09-17476	\$207.95	J-4 Coupe*	09-17525	\$155.95	Taylorcraft	BC12	09-17552 \$196.95
150 (69)	09-17478	\$207.95	PA-12 ^{1/2} /J-5*	09-17526	\$227.95			
170A/170B	09-17480	\$304.95	PA-14*	09-17528	\$155.95			
172 (56-58)	09-17482	\$304.95	PA-15 Vagabond*	09-17530	\$155.95			
72 (59-60)	09-17484	\$305.95						
72 (61-62)	09-17485	\$305.95						
172 (63-70)	09-17486	\$305.95						
175	09-17488	\$306.95						
180	09-17490	\$305.95						

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.

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	\$59.75
Cessna 120/140	09-35915	\$59.75
Piper PA20/22	09-35925	\$59.75
Piper PA18	09-35930	\$59.75
Piper PA28/140	09-35935	\$59.75



CITABRIA

Bulkhead and wrap-around pad 3 piece set.
P/N 09-35950\$108.25

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\$59.75
w/Dishpan addP/N 09-35945\$59.75



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\$12.90/Lineal Ft.

UPHOLSTERY HARDWARE

82° CSK Washer

Size 4P/N WF-4\$0.03 Size 6P/N WF-6\$0.02

82° Oval Head Screw

4x1/2 - A-OV P/N O4X8\$0.05 6x1/2 - A-OV..P/N O6X8\$0.04
6x3/3 - A-OV ..P/N O6X12 ..\$0.05 6x1P/N O6X16 ..\$0.05

Snap Studs - Males snaps attached to self-tapping phillips head screws. For canopies

#7 x 3/8"SNAP38\$0.21 #7 x 5/8"SNAP58\$0.20

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

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\$25.10/yd.

3M HEADLINER CEMENT

Headliner, rubber & gasket adhesive.

QuartP/N 09-17570\$22.85

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. CanP/N 09-42652\$7.60 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....\$15.00/yd.

PERRONE INTERIOR PRODUCTS

The ideal choice for creating outstanding aircraft interiors.

SKYLINE LEATHER - Skyline leather is aniline-dyed leather. This style of lightly textured-enhanced grain is designed for unsurpassed durability while fulfilling the need for a more price sensitive application. A supple hand adds to the enrichment always associated with quality leather. Available in several colors 90"-98" wide. Call for color samples and pricing.

VINYL - MSG vinyl's are the result of product evolution from over 30 years of field use. Extensive evaluation of independent test labs in line with the CFA test parameters guarantees lasting quality. Available in several colors. 54" wide.

Free color samples\$15.75 / yd.

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" wideP/N 09-00462\$19.95 / yd.

Tan 60" wideP/N 09-00461\$21.85 / yd.

3M LEADING EDGE TAPES - PROTECTIVE BOOTS

3M 8672/8672GB 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. Polyurethane Protective Tape 8672 GB is a glossy black tape with a paper liner on the adhesive side. Furnished in 36 yard rolls except PN 09-20110 (18 yards).

Width / Description	Part No.	Price
1" Clear Leading edge tape	09-00841	\$47.60
2" Clear Leading edge tape	09-20140	\$84.75
3" Clear Leading edge tape	09-00843	\$132.95
4" Clear Leading edge tape	09-20145	\$168.50
6" Clear Leading edge tape	09-00845	\$245.95
6" Light A/C Kit - 18yd	09-20110	\$122.95
1" Gloss Black Tape	09-00842	\$42.50
2" Gloss Black Tape	09-00811	\$70.25
3" Gloss Black Tape	09-00844	\$133.95
4" Gloss Black Tape	09-00812	\$163.95
6" Gloss Black Tape	09-00846	\$245.95

3M 8674/8674DL 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. Furnished in 36 yard rolls.

Width / Description	Part No.	Price
1" Clear Leading edge tape	09-00847	\$43.95
2" Clear Leading edge tape	09-00813	\$98.50
3" Clear Leading edge tape	09-00849	\$134.95
4" Clear Leading edge tape	09-00814	\$172.95
6" Clear Leading edge tape	09-00850	\$269.95
1" Double Lined Tape	09-00851	\$74.50
2" Double Lined Tape	09-00815	\$148.95
3" Double Lined Tape	09-00852	\$223.95
4" Double Lined Tape	09-00816	\$297.95
6" Double Lined Tape	09-00853	\$446.95

AP



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	ACS P/N	Price
Aero Commander			
500-1000, Radome	FP-20	09-00854	\$195.95
Shrike, Radome	FP-91	09-00855	\$266.95
Aerostar			
601 P Radome	FP-127	09-00856	\$266.95
Beechcraft			
Baron Norton Radome (Honeycomb)	FP-55	09-00857	\$266.95
Baron Non-Honeycomb (#58-410015-613)	FP-68	09-00858	\$201.95
Baron Honeycomb Nose (#58-410017-603)	FP-69	09-00859	\$266.95
Beech/Mitsubishi Diamond Radome	FP-84	09-00860	\$266.95
Duchess Radome	FP-129	09-00861	\$195.95
Duke Radome	FP-179	09-00862	\$201.95
90,100,200,1300,1900,Most King Air, 65/A65,70,80, A80,B80,U-8F, U-21A	FP-5	09-00863	\$351.95
99	FP-35	09-00864	\$201.95
1900& King Air Series Vertical Fairing Dome	FP-173	09-00865	\$193.95
Bombardier			
Learjet 23,24,25,Radome (PN2411241-1)	FP-7-1	09-00866	\$199.95
Learjet 33, 36 Wing Tip	FP-13-1	09-00867	\$195.95
Learjet M-45 Navigational Lens Ass'y	FP-195-1	09-00868	\$266.95
Learjet M-45 Radome	FP-174-1	09-00869	\$266.95
Learjet 50, 55, 60, (PN5411212-1)	FP-14-1	09-00870	\$201.95

Boot Application	3M P/N	ACS P/N	Price
Cessna			
208 Wing Mounted Radome	FP-34	09-00871	\$195.95
208 Prop Spinner	FP-87	09-00872	\$439.95
335,340A,401-421 Radome Long Nose	FP-25	09-00873	\$195.95
303 Crusader Radome	FP-28	09-00874	\$201.95
310K-Q w/Norton Rad, 320, 310R (#4096)	FP-90	09-00875	\$201.95
310q w/Norton Radome PN4131	FP-130	09-00876	\$201.95
310R w/Norton Radome PN4096	FP-114	09-00877	\$201.95
Citation S, I, II, IV, V	FP-29	09-00878	\$201.95
Citation II, IV, VII	FP-70	09-00879	\$439.95
210 Centurian,182,206,337 w/Wing Pod	FP-126	09-00880	\$201.95
425-441 Series Radome	FP-41	09-00881	\$195.95
Piper			
Aztec (Turbo) "C" non Coleman/Apache	FP-143	09-00882	\$201.95
Aztec E-F Radome	FP-136	09-00884	\$351.95
Cheyenne I, PA31P, Mojave, PA31T1/3, etc.	FP-12	09-00885	\$201.95
Cheyenne II	FP-4	09-00886	\$266.95
Cheyenne III, IV	FP-24	09-00887	\$201.95
Navajo (except PA31P)	FP-23	09-00888	\$201.95
Seneca	FP-54	09-00889	\$202.95

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\$32.00



Tape Adhesion Promoter 86A

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\$25.50

LEADING EDGE TAPE - WINGWALK



LEADING EDGE TAPE

Black or 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	Width	Color	P/N	Price/roll
2"	Clear	09-31610	\$19.95	2"	Black	09-31630	\$13.90
3"	Clear	09-31615	\$27.50	3"	Black	09-31635	\$24.95
4"	Clear	09-31620	\$36.80	4"	Black	A-10	\$27.30
6"	Clear	09-31625	\$48.50	6"	Black	09-31640	\$44.00

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" wideP/N 09-20140\$84.75
4" wideP/N 09-20145\$168.50
6" wideP/N 09-20110\$122.95

AEROSHIELD 2604 LEADING EDGE TAPE

Known as Rotunda 2604, this tape is available in both clear and black, and is manufactured from tough, tear and abrasion resistant, thermoplastic polyurethane film, protected by an easy release silicone liner. The principal use of the tape in the aircraft industry is to protect the leading edges of wings, tail fins and propellers of both civil and military aircraft from erosion and pitting during hail and rain storms. Protection of propellers is obviously vital, not only in the air but at ground level, mainly from loose particles and gravel. Aeroshield 2604 tape offers a substantial improvement in the operational life of aircraft wings, tail fins and propellers. It can be replaced easily and at low cost. Note: Polyurethane will yellow under UV exposure. Thickness: 0.350 mm. Furnished in 36 yd. rolls.

Width	Color	P/N	Price/ roll	Width	Color	P/N	Price/ roll
2"	clear	09-20120	\$128.95	4"	clear	09-20124	\$259.95
2"	black	09-20121	\$128.95	4"	black	09-20125	\$256.95
3"	clear	09-20122	\$186.95	6"	clear	09-20126	\$342.95
3"	black	09-20123	\$186.95	6"	black	09-20127	\$342.95



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\$2.40

DUCT TAPE

A general-purpose gray cloth tape with good adhesive qualities.
2" x 60 Yd. RollP/N 09-30900\$6.50

MASKING TAPE

Armak general or 3M purpose crepe masking tape. Long shelf life.
1/4" x 60 yd. RollP/N 09-20101\$3.85 ea.
3/4" x 60 Yd. RollP/N 09-20100\$1.35 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. RollP/N 09-17100\$7.30

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\$0.91



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. RollP/N 09-31300\$1.75

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, as an upholstery and rug attachment. An effective fastening material - applications unlimited. P/N 09-31400\$2.52 Yd.

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE



CLEAR SLIP RESISTANT WING WALK

This newly patented slip-resistant material is an excellent alternative to black Wing Walk which has been used on aircraft for many years. This material is clear 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\$32.85 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	\$3.40	12"	White	09-31660	\$3.90
12"	Clear	09-31650	\$3.90	6"	Black	09-31665	\$1.90
6"	White	09-31655	\$2.05	12"	Black	09-31670	\$3.70
24"	Clear	09-31685	\$10.95	24"	White	09-31680	\$9.30
24"	Black	09-31675	\$7.40				

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\$15.85 Gal.P/N X-1567-1G\$47.60



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\$3.70 /Ft.
Pliobond adhesive }	1/2 pt.P/N 09-28000\$5.95
	1 pt.P/N 09-28100\$8.95
	1 qt.P/N 09-28200\$15.80

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. TubeP/N 09-32300\$9.90



MAC WING WALK

MAC wing walks are not made from the usual, sandpaper-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 MAC 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.

BlackP/N 09-28210\$16.70 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 CanP/N 09-28000\$5.95
Pt. CanP/N 09-28100\$8.95
Qt. CanP/N 09-28200\$15.80

Discount Less 15% on 12 (Assorted)

GASKETS - O-RINGS -GROMMETS

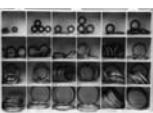


AN900 GASKETS

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	\$0.64	-17	-24	1-1/16	\$0.70
-4	-2	1/4	\$1.82	-18	-26	1-1/8	\$0.80
-5	-5	5/16	\$1.00	-19	-29	1-3/16	\$0.68
-6	-6	3/8	\$0.38	-20	-31	1-1/4	\$0.68
-7	-8	7/16	\$0.45	-21	-33	1-5/16	\$0.64
-8	-9	1/2	\$0.29	-22	-35	1-3/8	\$0.70
-9	-10	9/16	\$0.56	-23	-38	1-7/16	\$3.75
-10	-11	5/8	\$0.46	-24	-39	1-1/2	\$0.54
-11	-13	11/16	\$0.56	-25	-41	1-9/16	\$0.73
-12	-15	3/4	\$0.56	-26	-42	1-5/8	\$1.89
-13	-17	13/16	\$0.49	-27	-46	1-11/16	\$0.55
-14	-18	7/8	\$0.86	-28	-48	1-3/4	\$0.40
-15	-20	15/16	\$0.80	-29	-51	1-13/16	\$0.73
-16	-21	1	\$0.39	-30	-52	1-7/8	\$0.98

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....\$98.50



AN901 O-RINGS

AN901 tube connection seals are fabricated from type 1100 alum., H14 temper.

AN901 Dash No.	Tube O.D.	Price Each	AN901 Dash No.	Tube O.D.	Price Each
-4A	1/4	\$0.18	-8A	1/2	\$0.36
-5A	5/16	\$0.14	-10A	5/8	\$1.60
-6A	3/8	\$0.56	-12A	1-1/16	\$1.89

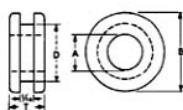
Discount Less 20% For 100 Per Size

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 Each	MS28778 Dash No.	Tube O.D.	Price Each
-2	1/8	\$0.47	-5	5/16	\$0.42
-3	3/16	\$0.69	-6	3/8	\$0.52
-4	1/4	\$1.27			



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	\$0.55
AN931-2-16	-3	1/8	1-1/4	1	1/4	\$0.61
AN931-3-5	-4	3/16	7/16	5/16	3/16	\$0.12
AN931-3-9	-134	3/16	3/4	9/16	3/16	\$0.24
AN931-4-7	-6	1/4	5/8	7/16	3/16	\$0.10
AN931-4-12	-7	1/4	1	3/4	1/4	\$0.49
AN931-4-16	-8	1/4	1-1/4	1	1/4	\$0.58
AN931-5-9	-9	5/16	13/16	9/16	5/16	\$0.16
AN931-5-12	-10	5/16	1	3/4	5/16	\$0.37
AN931-6-10	-11	3/8	7/8	5/8	5/16	\$0.24
AN931-6-16	-12	3/8	1-1/4	1	1/4	\$0.28
AN931-7-11	-13	7/16	15/16	11/16	5/16	\$0.44
AN931-8-13	-14	1/2	1-1/16	13/16	5/16	\$0.25
AN931-8-20	-15	1/2	1-1/2	1-1/4	1/4	\$0.36
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	\$0.63
AN931-10-20	-18	5/8	1-1/2	1-1/4	1/4	\$0.75
AN931-11-16	-19	11/16	1-5/16	1	3/8	\$0.97
AN931-12-17	-20	3/4	1-3/8	1-1/16	3/8	\$0.97
AN931-12-20	-135	3/4	1-5/8	1-1/4	1/4	\$0.97
AN931-12-23	-21	3/4	1-13/16	1-7/16	3/8	\$1.58
AN931-14-20	-22	7/8	1-5/8	1-1/4	7/16	\$1.20
AN931-16-22	-23	1	1-3/4	1-3/8	7/16	\$1.55
AN931-20-38	-1	1-1/4	2-3/4		7/16	\$1.62

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE



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.)			AN6227B Dash #	Dimensions (In.)			AN6227B Price Each
	W	I.D.	O.D.		W	I.D.	O.D.	
1	1/16	1/8	1/4	24	1/8	1-5/16	1-9/16	\$0.38
2	1/16	5/32	9/32	25	1/8	1-3/8	1-5/8	\$0.33
3	1/16	3/16	5/16	26	1/8	1-7/16	1-11/16	\$0.35
4	1/16	7/32	11/32	27	1/8	1-1/2	1-3/4	\$0.43
5	1/16	1/4	3/8	28	3/16	1-1/2	1-7/8	\$0.58
6	1/16	5/16	7/16	29	3/16	1-5/8	2	\$0.58
7	1/16	3/8	1/2	30	3/16	1-3/4	2-1/8	\$0.61
8	3/32	3/8	9/16	31	3/16	1-7/8	2-1/4	\$0.40
9	3/32	7/16	5/8	32	3/16	2	2-3/8	\$0.60
10	3/32	1/2	11/16	33	3/16	2-1/8	2-1/2	\$0.61
11	3/32	9/16	3/4	34	3/16	2-1/4	2-5/8	\$0.98
12	3/32	5/8	13/16	35	3/16	2-3/8	2-3/4	\$0.59
13	3/32	11/16	7/8	36	3/16	2-1/2	2-7/8	\$0.98
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	\$0.71
16	1/8	13/16	1-1/16	39	3/16	2-7/8	3-1/4	\$0.95
17	1/8	7/8	1-1/8	40	3/16	3	3-3/8	\$0.95
18	1/8	15/16	1-3/16	41	3/16	3-1/8	3-1/2	\$0.78
19	1/8	1	1-1/4	42	3/16	3-1/4	3-5/8	\$1.30
20	1/8	1-1/16	1-5/16	43	3/16	3-3/8	3-3/4	\$0.92
21	1/8	1-1/8	1-3/8	44	3/16	3-1/2	3-7/8	\$0.90
22	1/8	1-3/16	1-7/16	45	3/16	3-5/8	4	\$1.69
23	1/8	1-1/4	1-1/2	46	3/16	3-3/4	4-1/8	\$1.00



This new MS/AN O-Ring Kit includes over 460 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 An6227-1, -30) P/N 05-02210 \$69.75

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 No.	Nominal Size			Price Each
	I.D.	O.D.	W	
MS29513-006	1/8"	1/4"	1/16"	\$0.18
MS29513-007	5/32"	9/32"	1/16"	\$0.30
MS29513-008	3/16"	5/16"	1/16"	\$0.23
MS29513-009	7/32"	11/32"	1/16"	\$0.16
MS29513-010	1/4"	3/8"	1/16"	\$0.22
MS29513-011	5/16"	7/16"	1/16"	\$0.18
MS29513-012	3/8"	1/2"	1/16"	\$0.22
MS29513-110	3/8"	9/16"	3/32"	\$0.16
MS29513-111	7/16"	5/8"	3/32"	\$0.16
MS29513-112	1/2"	11/16"	3/32"	\$0.22
MS29513-113	9/16"	3/4"	3/32"	\$0.16
MS29513-114	5/8"	13/16"	3/32"	\$0.22
MS29513-115	11/16"	7/8"	3/32"	\$0.14
MS29513-116	3/4"	15/16"	3/32"	\$0.22

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.

AP

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!

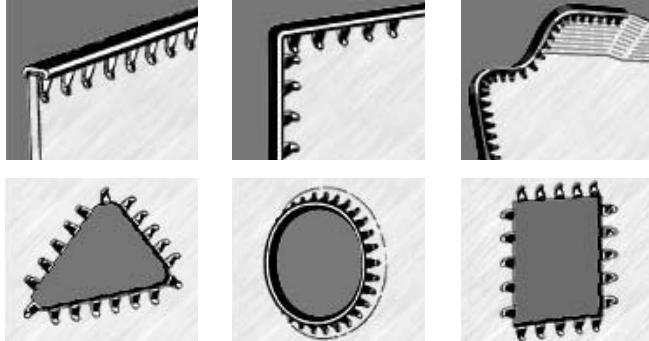
AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

Prices Subject to Change Without Notice

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AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

SPRING-FAST GROMMET EDGING



Smoothing the sharp edges that come in contact with wires and cables used to require numerous additional procedures, decreasing manufacturing productivity and increasing costs. Spring-Fast Composite Grommet Edging covers sharp edges and mechanically locks on any two-axis contour with finger pressure in only seconds per foot, a significant time reduction, eliminating solvents, adhesives, ancillary materials and volatile organic compounds; i.e. DFM/A (Designed For Manufacturing & Assembly). Provides for long-term reliability under shock, vibration, salt spray and immersions and improves cosmetic appearances by eliminating adhesive drips.

Spring-Fast grommet quickly snaps into place on openings in avionics racks, ribs, bulkheads intercostals and other airframe structures, using only the pressure applied by an installer's fingers. Once mounted, it remains indefinitely in position to provide a cushion between sharp metallic edges and an aircraft's wiring, cabling and tubing. Replaces traditional nylon grommets, which require toxic adhesives to install. Nylon grommets eventually can dry out and become brittle, causing them to crack or fall off the installed surface & leaving wires or tubing exposed to sharp-edged metallic surfaces.

The product is a composite of polymer encapsulated spring stainless steel enhanced by a protective cushion. Spring-Fast has been approved by the U.S. Defense Department and Federal Aviation Administration per NASM 22529/2 for all aircraft applications.

Spring-Fast is available in edging for 8 different sheet thickness ranges and can be purchased in either by the foot, 10 piece packs of 12.75" long pieces of edging or in 25ft. rolls.

Spring-Fast is used in a wide variety of aviation and aerospace applications:

- ✓ Lightening Holes
- ✓ Navigation Systems
- ✓ Wing Sections
- ✓ Electrical Power Centers
- ✓ Seating
- ✓ Racks
- ✓ Intercostals
- ✓ Fuselage
- ✓ Avionics
- ✓ Tail Sections
- ✓ IFE (In-Flight Entertainment)
- ✓ Bulkheads
- ✓ Ground Control
- ✓ Tactical Satellite Emulators
- ✓ Ferrules
- ✓ Space Shuttle Ground Systems
- ✓ Air Traffic Control
- ✓ EAU (Electrical Avionic Units)
- ✓ PSU (Personal Safety Units)
- ✓ APU (Auxiliary Power Units)

M Number	Sheet Thickness	Package Size	Our P/N	Price Ea.
M22529/2-1R	.025-.036	Per Foot	05-00673	\$7.70
M22529/2-1R-10PK	.025-.036	10pcs/12.75"l	05-00674	\$75.50
M22529/2-2R	.036-.063	Per Foot	05-00675	\$7.80
M22529/2-2R-10PK	.036-.063	10pcs/12.75"l	05-00676	\$75.50
M22529/2-3R	.059-.074	Per Foot	05-00677	\$7.70
M22529/2-3R-10PK	.059-.074	10pcs/12.75"l	05-00678	\$75.50
M22529/2-4R	.070-.093	Per Foot	05-00679	\$6.60
M22529/2-4R-10PK	.070-.093	10pcs/12.75"l	05-00680	\$75.50
M22529/2-5R	.090-.111	Per Foot	05-00681	\$6.80
M22529/2-5R-10PK	.090-.111	10pcs/12.75"l	05-00682	\$75.50
M22529/2-6R	.105-.134	Per Foot	05-00683	\$7.70
M22529/2-6R-10PK	.105-.134	10pcs/12.75"l	05-00684	\$75.50
M22529/2-7R	.178-.198	Per Foot	05-00685	\$9.80
M22529/2-7R-10PK	.178-.198	10pcs/12.75"l	05-00687	\$88.25
M22529/2-8R	.240-.260	Per Foot	05-00688	\$9.60
M22529/2-8R-10PK	.240-.260	10pcs/12.75"l	05-00690	\$87.75



25ft. rolls are 20% discount off per foot prices

Special Spring-Fast full bypass cut-off shears.
P/N 05-00689\$27.90

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			Stainless Steel Thimbles		
AN Part No.	Price Each	Price Per 100	Cable Size	AN Part No.	Price Each
AN100-3	\$0.12	\$9.60	1/16"	AN100C-3	\$0.20
AN100-4	\$0.11	\$8.80	3/32", 1/8"	AN100C-4	\$0.17
AN100-5	\$0.25	\$20.00	5/32"	AN100C-5	\$0.37
AN100-6	\$0.18	\$14.40	3/16"	AN100C-6	\$0.48
AN100-7	---	---	7/32"	AN100C-7	---
AN100-8	\$0.36	\$28.80	1/4"	AN100C-8	\$0.99
AN100-12	\$0.77	\$61.60	3/8"	AN100C-12	\$2.30



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"	\$1.38
-4	1/8"	\$1.59
-5	5/32"	\$1.79
-6	3/16"	\$1.54

Less 20% for 100

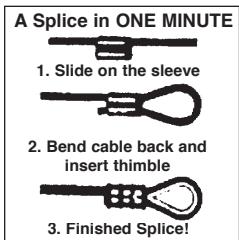
AN115 CABLE SHACKLES

Made of cadmium plated forged steel per specification MIL-S-5675.

AN 115 Dash Number	Shackle Strength Lbs.	Cable Size	Used With		
			Thimble	Clevis Pin	Price Each
-8	800	1/16"	AN100-3	AN393-9	\$19.10
-21*	2100	3/32", 1/8"	AN100-4	AN393-11	\$10.80
-32	3200	5/32"	AN100-5	AN394-15	\$31.30
-46	4600	3/16"	AN100-6	AN395-17	\$32.60
-61	6100	7/32"	AN100-7	AN396-19	\$17.70

*Replaces AN115 - 16.

DISCOUNT: Less 10% for 12, 15% for 25, 20% for 50 or more. May be assorted.



NICOPRESS SLEEVES

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	Cable Dia.	Rated Strength of Cable Lbs.	Tested Strength of Nicopress Splice Lbs.	Price	
				Each	100
18-1-C	1/16"	480	550	\$0.11	\$9.35
18-2-G	3/32"	920	1180	\$0.13	\$11.05
18-3-M	1/8"	2000	2300	\$0.21	\$17.85
18-4-P	5/32"	2800	3050	\$0.38	\$32.30
18-6-X	3/16"	4200	4350	\$0.76	\$64.60
28-1-C	1/16"	480	550	\$0.10	\$8.00
28-2-G	3/32"	920	1180	\$0.15	\$12.00
28-3-M	1/8"	2000	2300	\$0.29	\$23.20
28-4-P	5/32"	2800	3050	\$0.39	\$31.20
28-6-X	3/16"	4200	4350	\$0.84	\$67.20

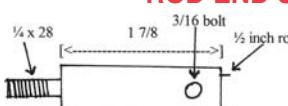
NICOPRESS STOP SLEEVES

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	\$49.50
3/32"	ST2-3	04-00901	\$49.50
1/8"	ST2-4	04-00902	\$49.50
5/32"	ST2-5	04-00903	\$49.50

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\$23.85



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.



Part No.	Clevis Pin Hole Dia.	Fork		Price Each
		Overall Width	Inside Width	
AN481-1P	1/4"	1/2"	17/64"	\$16.30
AN481-2P	1/4"	5/16"	9/64"	\$16.45
AN481-3P	3/16"	1/2"	17/64"	\$16.90
MS27976-4 (AN481-4P)	3/16"	5/16"	9/64"	\$13.80

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.



Part No.	Clevis Pin Hole Dia.	Fork		Price Each
		Overall Width	Inside Width	
AN486-1P	1/4"	1/2"	17/64"	\$15.10
AN486-2P	1/4"	5/16"	9/64"	\$15.10
AN486-3P	3/16"	1/2"	17/64"	\$15.30
AN486-4P	3/16"	5/16"	9/64"	\$15.40

SPECIAL 10-32 ROD END - Same as AN486-3P except w/ 10-32 threads. P/N AN486-1032\$9.75 Ea.

AP

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.



Part Number	Thread Size	Used With Tube Size	Price Each
AN490HT5P	1/4-28	5/16"x.035	\$4.45
AN490HT6P	1/4-28	3/8"x.035	\$9.45
AN490HT8P	1/4-28	1/2"x.035	\$8.95
AN490HT10P	5/16-24	5.8"x.035	\$9.90
AN490HT11P	5/16-24	3/4"x.035	\$9.75
AN490HT14P	3/8-24	3/4" x .035	\$23.30
AN490HT15P	5/16-24	1/2"x.058	\$27.90
AN490HT16P	3/8-24	1/2"x.058	\$28.35

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 righthand 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	Sgt. (Lbs.)	AN665 Rt. only Price Ea.	AN665 Lt. only Price Ea.
-10R	-10L		.6-40	.190"	.109"	1200	\$11.35	\$11.35
-21R	-21L		10-32	.190"	.150"	2400	\$11.40	\$11.40
-34R		-34L	1/4-28	.250"	.203"	4200	\$19.85	\$19.85
-46R	-46L		5/16-24	.313"	.203"	4600	\$16.60	\$23.85
-61R	-61L		5/16-24	.375"	.203"	6900	\$27.50	\$27.40
-80R	-80L		3/8-24	.375"	.266"	10000	\$36.40	\$36.40

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	\$11.13	AN665-10L	05-02400	\$12.32
AN665-21R	05-02500	\$11.80	AN665-21L	05-02600	\$12.45
AN665-34R	05-02700	\$16.53	AN665-34L	05-02800	\$20.54
AN665-46R	05-02900	\$17.15	AN665-46L	05-03000	\$24.84
AN665-61R	05-03100	\$41.41	AN665-61L	05-03200	\$28.54
AN665-80R	05-03300	\$44.89	AN665-80L	05-03400	\$45.40

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	\$0.52
3	3/32	.250	730	\$0.65
4	1/8	.315	1050	\$0.79



**MS20664C
BALL &
SINGLE
SHANK**

Dash No.	Cable Dia.	Sphere Dia. after Swage	Breaking Strength Lbs.	Price
2	1/16	.190	480	\$0.52
3	3/32	.253	920	\$0.74
4	1/8	.315	2000	\$0.85
5	5/32	.379	2800	\$1.18
6	3/16	.442	4200	\$1.62



**MS20663C
BALL &
DOUBLE
SHANK**

Dash No.	Cable Dia.	Sphere Dia. after Swage	Breaking Strength Lbs.	Price
2	1/16	.190	480	\$0.65
3	3/32	.253	920	\$0.97
4	1/8	.315	2000	\$1.23
5	5/32	.379	2800	\$2.05
6	3/16	.442	4200	\$2.50

AP

MS20667 FORK END



Dash No.	Cable Dia.	Breaking Strength Lbs.	Pin Hole Dia.	Fork Width "G"	Price
2	1/16	480	.190	.093	\$5.90
3	3/32	920	.190	.108	\$6.40
4	1/8	2000	.190	.195	\$8.20
5	5/32	2800	.250	.202	\$10.50
6	3/16	4200	.313	.260	\$12.80

MS20668 EYE END



Dash No.	Cable Dia.	Breaking Strength Lbs.	Pin Hole Dia.	Eye End Width "J"	Price
2	1/16	480	.190	.088	\$2.85
3	3/32	920	.190	.103	\$3.30
4	1/8	2000	.190	.190	\$4.10
5	5/32	2800	.250	.197	\$5.70
6	3/16	4200	.313	.255	\$8.40

MS 21259 STUD END



Dash No.	Cable Dia.	Breaking Strength Lbs.	Thread Size NF-3	Price
2	1/16	480	6-40	\$2.95
3	3/32	920	10-32	\$3.05
4	1/8	2000	1/4-28	\$4.15
5	5/32	2800	1/4-28	\$4.25
6	3/16	4200	5/16-24	\$5.40

Add "RH" or "LH" after dash numbers for right or left hand threads

MS21260 TURNBUCKLE END



S=Short
L=Long

Turnbuckle Component	Part No.	Cable Dia.	Thread Size	Min. Breaking Strength (lbs)	Price Each
Cable Swage End (Supercedes AN669)	MS21260-S2RH -S2LH -S3RH -S3LH -S4RH -S4LH -S5RH -S5LH	1/16" 3/32" 1/8" 5/32"	6-40 10-32 1/4-28 1/4-28	480 920 2000 2800	\$3.50 \$3.30 \$3.85 \$3.75 \$4.40 \$4.30 \$4.20 \$4.70

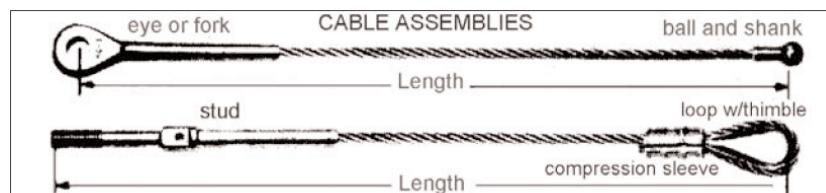
Discounts:
All Items This Section:
Less 10% For 12 Ea.
15% On 50 Or More (Per Size)

EYE END		FORK END	
Dash No.	Cable Dia.	Pin Hole Width	Eye End Width
2	1/16	.188	.088
3	3/32	.188	.103
4	1/8	.188	.190

**SA 361 EYE END &
SA 362 FORK END**

* AN100 thimble not included.
** For short barrels listed above. Use two per assembly.

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.

To determine cost of custom-made cable assembly, add cost of selected fittings and cable plus swages at \$6.95 each, plus \$20.00 setup charge for each cable of different length. 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 \$6.75 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 MS21259-4 stud end is 10 x .22/ft. for cable plus \$6.21 and \$2.85 for the fittings plus \$6.95 per swage + \$20.00 setup = \$45.16 total cost. For added MS20663C-4 ball add \$6.95 for swage plus \$.65 for ball.

SWAGING SERVICE - For cable assemblies requiring swaged fitting on one end only. \$6.95/swage plus cost of cable and fittings.

NICOPRESS SWAGES - Performed for \$4.95/Swage plus cost of Nicopress sleeve.

CABLE - FORKS - SADDLES

CONTROL CABLE

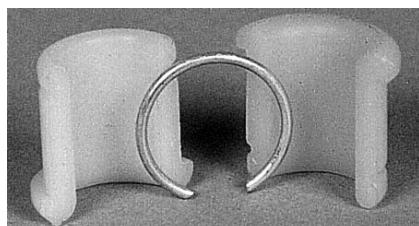


Cable Dia. (In.)	Con- Struc- tion	Breaking Strength (Lbs.)		Part Number		Price/Ft.	
		Galva- nized	Stain- less	Galvan- ized	Stain- less	Galva- nized	Stain- less
1/16	7x7	480	480	05-03600	05-03500	\$0.19	\$0.20
3/32	7x7	920	920	05-03800	05-03700	\$0.15	\$0.31
3/32	7x19	1000	920	05-04000	05-03900	\$0.41	\$0.49
1/8	1x19	2100	2100	05-04200	05-04100	\$0.31	\$0.65
1/8	7x19	2000	1760	05-04400	05-04300	\$0.42	\$0.56
5/32	1x19	3300	3300	05-04600	05-04500	\$0.48	\$0.85
5/32	7x19	2800	2400	05-04800	05-04700	\$0.46	\$0.70
3/16	7x19	4200	3700	05-05000	05-04900	\$0.53	\$1.03
1/4	7x19	7000	6400	05-05200	05-05100	\$0.90	\$1.44

CABLE SPECIFICATIONS

Galvanized - MIL-DTL-83420 replaces MIL-2-83420
Stainless - MIL-DTL-83420 replaces both Galvanized & Stainless

CABLE FAIRLEADS



Nylon construction for external use. Two halves with retaining clip.
Less 15% 3/4"O.D. x 3/4"LP/N 05-05500\$2.51 Set
for 3/4"O.D. x 1" LP/N 05-05600\$2.37 Set
12 or more Clips OnlyP/N 05-05700.....\$0.33 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 retapping after welding. All forks have rolled threads and 100% mag-fluxed. FAA Approved.

BarrelsP/N 05-05900\$14.85 ea
Forks w/ 5/16" dia. hole (equivalent to Piper P/N 13770-00 priced at \$82.45 ea.)P/N 05-06000\$87.50 ea
Use AN25-14 clevis bolt\$1.12 ea
Forks with 3/8" dia. hole (equivalent to Piper P/N 14481-00 priced at \$103.60 ea.)P/N 05-06100\$85.50 ea

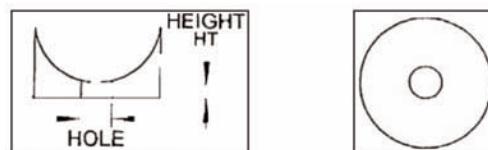
CONTROL CABLE SPECIFICATIONS

- **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.

CONTROL CABLE FAIRINGS

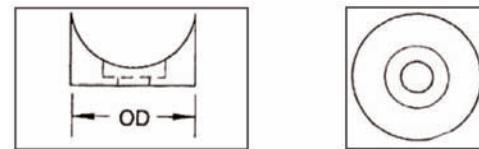
Injection molded ABS plastic fairings used to cover hole in airframe where control cables emerge such as the rudder cables at the rear of the fuselage. May be installed on any airframe surface but is most normally used on fabric covered aircraft where they are bonded on with fabric cement and covered with a fabric patch. P/N 05-05750\$4.35 pair

ULTRALIGHT SADDLES



SUPER-TOUGH SADDLES - TYPE I

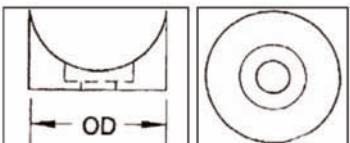
P/N	MAXAIR#	FITS	OD	HOLE	HT	EACH
S4436	---	.875	0.875	.260	.125	\$0.79
S4352	---	1.00	1.00	.260	.125	\$0.80
S4350	---	1.00	1.00	.340	.125	\$0.84
S4353	---	1.00	1.00	.260	.250	\$0.79
S4326	---	1.125	1.00	.260	.125	\$1.52



SUPER-TOUGH SADDLES - TYPE II

P/N	MAXAIR#	FITS	OD	HOLE	HT	EACH
S4451	S-24	1.500	1.375	.266	.188	\$0.90
S4453	S-84	1.625	1.375	.266	.188	\$1.49
S4456	S-44	1.750	1.375	.266	.188	\$0.89
S4459	S-74	1.875	1.375	.266	.188	\$0.89
S4462	S-94	2.000	1.375	.266	.188	\$0.89

ULTRALIGHT TANGS - CONNECTORS - BRACKETS

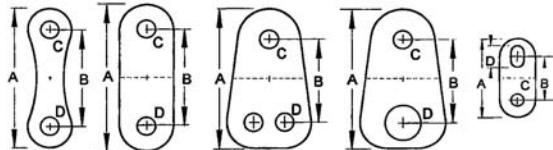


**SUPER-TOUGH
STANDOFF
SADDLES -TYPE II**

P/N	MAXAIR#	Fits	O.D.	Hole	HT	Price
S4471	S01-14	1.000	1.000	.266	.188	\$0.78
04-00921	S04-04	1.125	1.000	.266	.188	---
S4476	S01-24	1.500	1.000	.266	.188	\$0.78
S4479	S01-84	1.625	1.000	.266	.188	\$0.78
04-00922	S01-44	1.750	1.000	.266	.188	\$1.25
S4484	S01-74	1.875	1.000	.266	.188	\$1.50
S4487	S01-94	2.000	1.000	.266	.188	\$1.80
S4489	S04-94	2.000	1.000	.266	.440	\$1.64

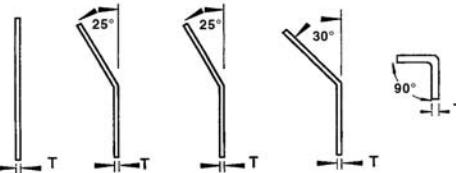
ALUMINUM SADDLES

P/N-Type	Our P/N	Fits	Base OD	Hole	Height	Price
4300/I	04-00923	1.00	1.00	.266	.125	\$3.20
4327/I	04-00924	1.13	1.00	.266	.125	\$4.25
4328/I	04-00925	1.25	1.00	.266	.125	\$2.20
4310/II	04-00926	1.50	1.00	.266	.250	\$5.00
4315/I	04-00927	1.63	1.00	.266	.125	\$2.25
4320/III	04-00928	1.63	1.50	.378	.125	\$2.50
4325/I	04-00929	1.88	1.00	.266	.125	\$2.95
4329/I	04-00930	2.00	1.00	.266	.125	\$3.20



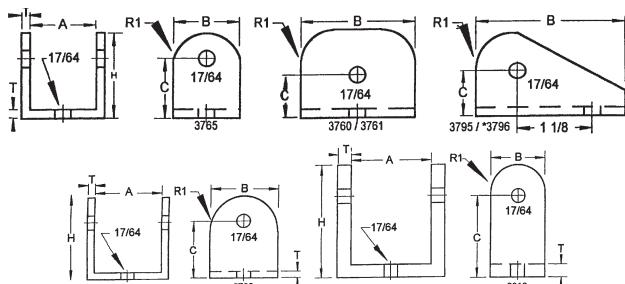
TANGS

Made of 304 stainless steel.
All measurements are in inches.

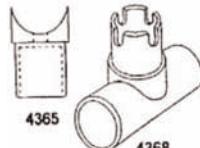


P/N	Description	Maxair #	T	A	B	C	D	Each
T2876	Figure 8	T12-HT4	14G	2.00	1.38	0.266	0.266	\$1.10
T2850	2-Hole Flat	---	18G	2.17	1.25	0.266	0.266	\$1.14
T2861	2-Hole Flat	T0-FT	13G	2.17	1.25	0.315	0.266	\$1.15
T2866	2-Hole Bent	T2-Flat	13G	2.17	1.25	0.266	0.266	\$1.25
T2867	2-Hole Bent	---	12G	2.17	1.25	0.266	0.266	\$1.34
T2878	3-Hole Flat	T11-DFT	14G	1.97	1.09	0.266	0.266	\$3.25
T2880	3-Hole Flat	T8-DFT	12G	1.97	1.09	0.315	0.266	\$3.25
T2883	3-Hole Bent	T9-DAT	14G	1.97	1.09	0.266	0.266	\$3.25
T2885	3-Hole Bent	T6-DAT	12G	1.97	1.09	0.315	0.266	\$3.75
T2887	Anchor Tang	---	14G	1.91	1.09	0.266	0.5	\$3.25

ALUMINUM BRACKETS

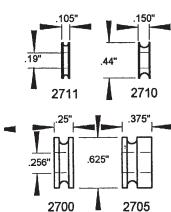


P/N	A	B	C	H	T	R1	ALLOY	Each
B3772	.500	.750	.500	.750	.125	---	6061-T6	\$4.20
B3765	1.000	1.000	.875	1.250	.125	.500	6063-T5	\$4.95
B3760	1.000	1.750	.625	1.250	.125	.500	6063-T5	\$5.90
B3761	1.000	1.750	.906	1.250	.125	.750	6063-T5	\$7.50
B3795	1.000	2.250	.670	1.250	.125	.500	6063-T5	--
B3766	1.250	1.250	1.062	1.500	.125	.750	6063-T5	\$6.30
B3796	1.250	2.375	.875	1.500	.125	.500	6063-T5	--
B3810	1.500	1.000	1.500	2.000	.250	.500	6061-T6	\$9.90



TUBE CONNECTORS - NYLON

Fits 1 x .049 TubeP/N TC4365 ..\$1.14
Fits 3/4 x .049 TubeP/N TC4357 ..\$1.90
Fits 1 x .049 (Maxair TC-1).....P/N TC4368 ..\$1.36



CABLE FITTINGS

.1/16" Cable, Steel, AN111-3P/N CF2710 ..\$2.50
3/32" Cable, AluminumP/N CF2700 ..\$2.25
3/32" Cable, AluminumP/N CF2705 ..\$1.75
1/16" Cable, Stainless, AN111C-3 P/N CF2710S \$1.38

REAR SPAR CONTOUR FITTING

Maxair#WT262, Contour
P/N CF001\$1.08



AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

140

Prices Subject to Change Without Notice



POLY TIP RIB END FITTING

Maxair#PT-1
Poly TipP/N BAT01\$0.57

STAINLESS STEEL BRACKETS

Fits 1.000" TubP/N B3740 ..\$4.20
Fits 1.125" TubeP/N B3742 ..\$4.20
Fits 1.250" TubeP/N B3744....\$5.70
Fits 1.375" TubeP/N B3746 ..\$6.30

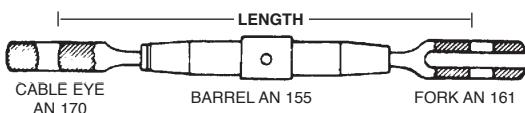
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

TURNUCKLE COMPONENTS

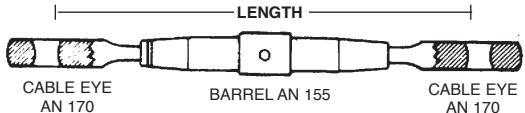
TURNUCKLES COMPLETE ASSEMBLIES

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.

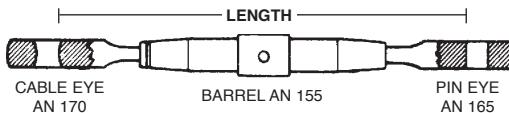
AN 130 ASSEMBLY



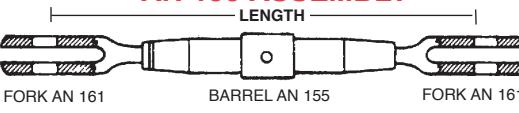
AN 140 ASSEMBLY



AN 135 ASSEMBLY



AN 150 ASSEMBLY



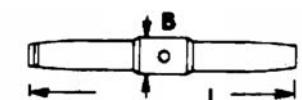
AN 146 Assembly consists of 1 - AN 155 barrel, 1-AN161 Fork and 1 MS21260 Turnbuckle End.

Dash	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	\$24.35	\$21.85	\$21.75	\$28.00
-16S	4-1/2	4-1/2	4-1/2	4-1/2	1600	\$25.30	\$20.10	\$21.00	\$29.80
-16L	8	8	8	8	1600	\$28.30	\$26.70	\$25.70	\$31.30
-22S	4-17/32	4-17/32	4-1/2	4-17/32	2200	\$28.65	\$24.35	\$24.35	\$29.05
-22L	8-1/32	8-1/32	8	8-1/32	2200	\$33.40	\$30.00	\$26.00	\$37.00
-32S	4-19/32	4-19/32	4-1/2	4-19/32	3200	\$27.60	\$24.30	\$24.40	\$32.00
-32L	8-7/64	8-7/64	8	8-7/64	3200	\$32.50	\$30.50	\$30.50	\$37.20
-46S	4-21/32	4-21/32	4-1/2	4-21/32	4600	\$47.60	\$32.30	\$25.80	\$41.60
-46L	8-5/32	8-5/32	8	8-5/32	4600	\$41.90	\$41.10	\$40.80	\$49.80
-61L	8-9/32	8-9/32	8	8-9/32	6100	\$50.00	\$51.10	\$56.90	\$59.70
-80L	8-5/16	8-5/16	8	8-5/16	8000	---	---	---	\$84.80

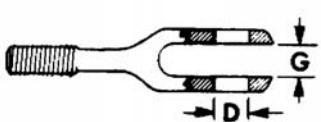
*Length measured with threads flush with ends of barrel.

**Less 10% for 6 or more assemblies, 15% for 12 or more assemblies. May be assorted.

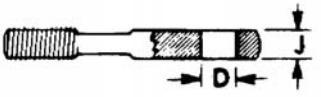
AP



**AN155
BARREL**



**AN161
FORK**



**AN165
PIN EYE**



**AN170
CABLE EYE**

TURNUCKLE 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	.188	.188	.188	.219
-16L	10-32	4	.344	.156	.188	.188	.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

TURNUCKLE PARTS PRICES

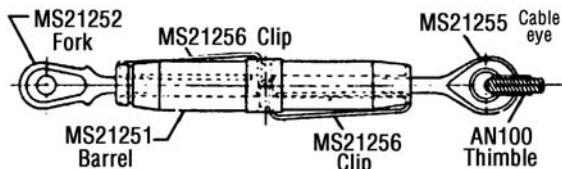
AN155 Dash No.	Barrel Price Each	TURNUCKLE ENDS		
		Dash No.	Price Each	
			AN 161	AN 165
-8S	\$6.00	-8RS	\$10.40	\$7.90
-8S	\$6.00	-8LS	\$11.60	\$7.70
-16S	\$6.00	-16RS	\$12.10	\$6.90
-16S	\$6.00	-16LS	\$11.70	\$7.50
-16L	\$7.10	-16RL	\$11.90	\$10.30
-16L	\$7.10	16LL	\$12.30	\$10.30
-22S	\$6.80	-22RS	\$12.95	\$8.30
-22S	\$6.80	-22LS	\$9.30	\$8.30
-22L	\$8.00	-22RL	\$13.80	\$10.40
-22L	\$8.00	-22LL	\$15.20	\$10.40
				\$11.60

AN155 Dash No.	Barrel Price Each	TURNUCKLE ENDS		
		Dash No.	Price Each	
			AN 161	AN 165
-32S	\$6.80	-32RS	\$12.00	\$8.70
		-32LS	\$13.20	\$8.60
-32L	\$8.00	-32RL	\$12.60	\$11.30
		-32LL	\$15.90	\$11.40
-46S	\$6.40	-46RS	\$20.50	\$11.50
		-46LS	\$20.70	\$15.50
-46L	\$9.40	-46RL	\$16.30	\$15.50
		-46LL	\$24.10	\$14.60
-61L	Use 6.95	-61RL	\$14.00	\$15.10
		-61LL	\$29.20	\$15.10
-80L	\$16.50	-80RL	\$35.60	\$30.20
		-80LL	\$32.70	\$17.45

Meeting or Beating Any Competitor's Prices Since 1965!

TURNBUCKLE COMPONENTS

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	\$4.75
1 MS21252-3LS Fork End	\$9.30
1 MS21254-3RS Pin Eye End	\$7.40
2 MS21256-1 Clips	\$0.45/ea.

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 (Supersedes AN155)	MS21251-B2S	1/16"	6-40	800	\$4.95
	-B3S	3/32"	10-32	1600	\$4.75
	-B5S	1/8", 5/32"	1/4-28	3200	\$5.40
Fork End (Supersedes AN161)	MS21252-2RS	1/16"	6-40	800	\$8.90
	-2LS	3/32"	10-32	1600	\$8.90
	-3RS	3/32"	10-32	1600	\$12.00
	-3LS	1/8", 5/32"	1/4-28	3200	\$9.30
	-5RS	1/8", 5/32"	1/4-28	3200	\$10.60
Pin Eye End (Supersedes AN165)	MS21254-2RS	1/16"	6-40	800	\$9.35
	-2LS	3/32"	10-32	1600	\$8.50
	-3RS	3/32"	10-32	1600	\$7.40
	-3LS	1/8", 5/32"	1/4-28	3200	\$7.10
	-5RS	1/8", 5/32"	1/4-28	3200	\$9.30
Cable Eye End (Supersedes AN170)	MS21255-2RS	1/16"	6-40	800	\$8.00
	-2LS	3/32"	10-32	1600	\$8.00
	-3RS	3/32"	10-32	1600	\$7.60
	-3LS	1/8", 5/32"	1/4-28	3200	\$7.90
	-5RS	1/8", 5/32"	1/4-28	3200	\$9.30
Cable Swage End (Supersedes AN669)	MS21260-S2RH	1/16"	6-40	480	\$3.50
	-S2LH	3/32"	10-32	920	\$3.30
	-S3RH	3/32"	10-32	920	\$3.85
	-S3LH	1/8"	1/4-28	2000	\$3.75
	-S4RH	1/8"	1/4-28	2000	\$4.40
Clip**	-S4LH	1/8"	1/4-28	2800	\$4.30
	-S5RH	5/32"	1/4-28	2800	\$4.20
Clip**	-S5LH	5/32"	1/4-28	2800	\$4.70
	MS21256-1	--	--	--	\$0.45



SAFETY WIRE

Available in Type 302/304 stainless steel (soft temper) per MS20995 and in soft annealed brass per specification QQ-W-321, Type A. Stainless steel safety wire furnished in convenient 1 lb. dispensing cans (center core).

Wire Dia. In.	Wire Type	Part No.	Price Per lb.
.020	Stainless Steel	01-15620	\$9.45
.032	Stainless Steel	01-15700	\$7.30
.032	Brass	05-06500	\$14.90
.041	Stainless Steel	01-15800	\$5.95
.041	Brass	05-06600	\$11.70

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	\$0.90
.041" Dia.	P/N 01-15825	\$0.77

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

Prices Subject to Change Without Notice

ADJUSTABLE CABLE CONNECTOR

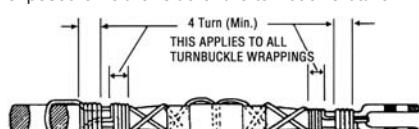


The ACC provides a strong positive connection with tensioning and maximum liner travel in a confined cable installation. Accommodates 3 standard cable terminals, (SA-110 plain ball, MS20664C ball & single shank, and AN111 cable bushing) including combinations of cable-to-cable & cable-to-bracket. It 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	01-15620	\$9.45
.032	.188	01-15700	\$7.30
.032	1/4"	05-06500	\$14.90
.041	5/16"	01-15800	\$5.95

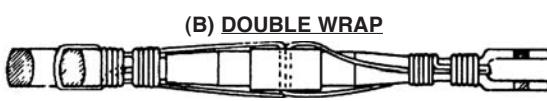
SAFETY METHODS FOR TURNBUCKLES

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

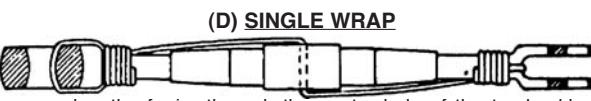
Another satisfactory double wrap method is similar to Method A, except that the spiraling of the wires is omitted as shown in figure (B).



(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.



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.

PULLEYS - PUSHROD FITTINGS

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 \$4.65 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 \$9.80 ea.



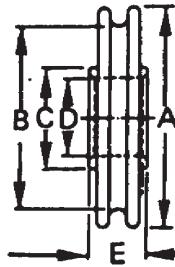
ASSORTED SPRINGS

Spring	Part No.	Application	Spring Type	Length	Price Each
Century Spring #186-C	01-27200	VarieEze "	Tension	2"	\$3.10
Rudder Return Spring	01-27300	"	Tension	4 1/2"	\$4.75
Landing Brake	01-27600	VE/Long-EZ "	Tension	10"	\$8.30
Tension Spring*	01-37500	"	Tension	30"	\$9.85
Landing Brake	01-27900	Cozy	Tension	12 1/2"	\$7.80

PHENOLIC PULLEYS

Part Number	Cable Size (In.)	A Dia.	B Dia.	C Dia.	D (Bore) Dia.	E	Allowable Load Limit (Lbs.)	Price Each
MS24566-1B	1/16, 5/64, 3/32	1.250	.972	.625	.1900	.297	185	\$12.95
MS24566-2B	1/16, 5/64, 3/32	2.500	2.222	.777	.297	500	\$14.90	
MS24566-3B	1/8, 5/32, 3/16	2.000	1.510	.901	.2500	.484	450	\$13.20
MS24566-4B	1/8, 5/32, 3/16	3.500	3.010	.901	.2500	.484	1200	\$16.50
MS20219-1	1/16, 3/32	1.312	1.000	.423	.2500	.438	480	\$14.20
MS20219-2	1/16, 3/32	1.750	1.438	.423	.2500	.438	480	\$14.00
MS20219-3	1/16, 3/32	1.750	1.438	.769	.6250	.438	480	\$30.50
MS20219-4	1/16, 3/32	2.625	2.312	.423	.2500	.438	920	\$14.20
MS20220-1	1/8, 5/32, 3/16	1.755	1.255	.475	.3125	.625	500	\$14.70
MS20220-2	1/8, 5/32, 3/16	3.005	2.505	.475	.3125	.625	1680	\$29.10
MS20220-3	1/8, 5/32, 3/16	4.255	3.755	.475	.3125	.625	2500	\$23.40
MS20220-4	1/8, 5/32, 3/16	5.505	5.005	.475	.3125	.625	2500	\$31.90
A-223	1/16, 3/32, 1/8	1.000	.688	---	.2500	.281	---	\$5.20
A-224	1/16, 3/32, 1/8	1.750	1.375	---	.2500	.250	---	\$4.95
A-138 (NAS)	1/16, 3/32, 1/8	1.250	.875	---	.2500	.265	---	\$5.50
A-123 (NAS)	1/16, 3/32,	2.000	1.500	---	.2500	.265	---	\$6.98
A-124 (NAS)	1/16, 3/32	2.500	2.000	---	.2500	.265	---	\$7.40
A-130 (NAS)	1/8, 5/32	2.000	1.375	---	.3750	.438	---	\$5.10
A-120 (NAS)	5/32, 3/16	3.000	2.375	---	.3750	.438	---	\$8.60
05-29710	3/16	2.500	1.875	---	.2500	.440	---	\$14.80
05-29720	3/16	3.000	2.375	---	.2500	.440	---	\$15.40

AP



ALUMINUM PULLEYS

Part No	Price Each
MS20219A1	\$18.40
MS20219A3	\$34.60
MS20220A1	\$17.50
MS20220A2	\$32.90
MS20220A3	\$46.70
MS20220A4	\$63.75

Dimensions of these aluminum pulleys are same as equivalent size of MS20219 and MS20220 Phenolic Pulleys in table.



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 \$10.85 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 \$9.90 ea.

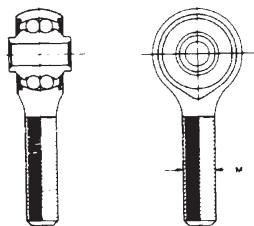
Fits: 5/8" x .058" tube.....P/N 05-01130 \$9.90 ea.

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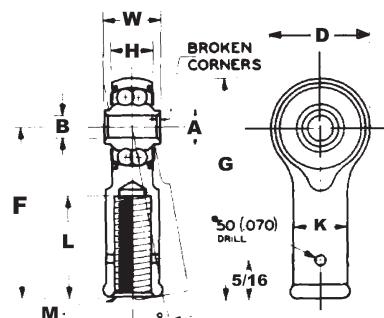
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BEARINGS



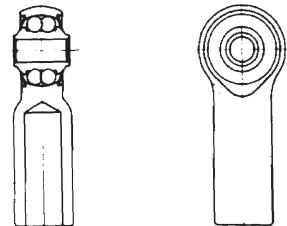
AN 946
MS 21151

Male Threaded Shank



AN 951
MS 21153

Female Threaded Shank



AN948 Hollow Shank
MS21152
MS21150

Hollow Shank Solid Shank

MALE THREAD Bearing No.	MS 21151	B	D	W	H	A	F	G	L	J	K	M	Thread or Drill Size Inches	Balls	Lbs	Weight Type Seal	Price Each
		Bore	Outside Diam.	Width Inner Ring	Width Outer Ring	Shoulder Diameter	Inner Ring (Approx.)	Bore Center to end of Shank	Overall Dimen- sion	Thread Length or Shank Hole Depth	Bead or Hex Diam. Across	Shank Diam.					
RE3ML3	-1	.1900	.781	.437	.328	.281	1.375	1.766	.750			10-32	.1697 LH .1667	20	1/8"	.04	Solid Seal \$29.90
RE3MR3	-2	.1900	.781	.437	.328	.281	1.375	1.766	.750			10-32	.1697 RH .1667	20	1/8"	.04	Solid Seal \$38.40
RAP3M4-2	-6	.1900	.781	.500	.438	.312	1.812	2.203	.938			1/4"-28	.2268 RH .2238	20	1/8"	.10	Plyo-Seal \$64.25
RE3M6A	-3	.1900	.969	.500	.407	.304	2.031	2.516	1.313			3/8"-24	.3479 RH .3449	24	1/8"	.05	Solid Seal \$37.00
RE3M6-2N	-4	.1900	.781	.437	.328	.281	1.375	1.766	.750			3/8"-24	.3479 RH .3449	20	1/8"	.05	Solid Seal \$34.10
RE3ML6-2N	-5	.1900	.781	.437	.328	.281	1.375	1.766	.750			3/8"-24	.3479 LH .3449	20	1/8"	.05	Solid Seal \$27.50
REP4M6	-8	.2500	.938	.593	.438	.345	1.875	2.344	1.125			RH	.3449	22	5/32"	.07	Plyo-Seal \$37.50
REP4ML6	-9	.2500	.938	.593	.438	.345	1.875	2.344	1.125			3/8"-24	.3479 LH .3449	22	5/32"	.07	Plyo-Seal \$48.00
REP5M6	-10											3/8"-24	.4050				\$69.50
REP5M7	-11	.3125	1.250	.870	.656	.506	2.438	3.063	1.563			7/16"-24	.3980	26	3/16"	.24	Plyo-Seal \$77.25
RE5M10												5/8"-18	.5889 RH				Solid Seal \$49.10

FEMALE THREAD MS 21153

REPB3N*	-1	.1900	.781	.437	.328	.281	1.375	1.766	.750	.438	.375	1/4"-28	.2298 RH .2268	20	1/8"	.05	Plyo-Seal \$37.00
REPB3N2***	-2	.1900	.781	.437	.328	.281	1.375	1.766	.750	.438	.375	5/16"-24	.2884 RH .2854	20	1/8"	.06	Plyo-Seal \$40.80
RE3F4	-3	.1900	.781	.500	.328	.281	1.375	1.766	.750	.438	.375	RH	.2268	20	1/8"	.06	Solid Seal \$42.20
RE3FL4	-4	.1900	.781	.500	.328	.281	1.375	1.766	.750	.438	.375	1/4"-28	.2298 LH .2268	20	1/8"	.06	Solid Seal \$68.50
REP3FL4-3	-5	.1900	.781	.437	.328	.281	1.375	1.766	.750	.438	.375	1/4"-28	.2298 LH .2268	20	/18"	.06	Plyo-Seal ---
REP4F5	-6	.2500	.938	.593	.438	.345	1.469	1.938	.750	.438	.438	5/16"-24	.2884 RH .2854	22	5/32"	.07	Plyo-Seal \$49.90
REP4FL5	-7											5/16"-24	.4080				\$39.35

HOLLOW SHANK MS 21152

REP3H5**	-1	.1900	.781	.437	.328	.281	1.375	1.766	.875		.435		.272	20	1/8"	.06	Plyo-Seal \$48.50
RE4H6																	\$65.75
REP4H6	-2	.2500	.938	.593	.438	.345	1.875	2.344	1.219		.625		.386	22	5/32"	.12	Plyo-Seal \$65.75
REP4H8	-3	.2500	.938	.593	.438	.345	1.625	2.093	.875		.625		.515	22	5/32"	.08	Plyo-Seal \$95.00

SOLID SHANK MS21150

REP3S7	-1	.1900	.781	.437	.328	.281	1.375	1.766			.430		SOLID	20	1/8"	.07	Plyo-Seal \$46.10
REP4S10	-2	.2500	.938	.593	.438	.345					.625		SOLID	22	5/32"	.16	Plyo-Seal \$39.80

*Dimensionally Same as Heim F34-14

**Dimensionally Same as Heim F31-14

***Dimensionally Same as Heim F35-14

We Will Not Be Undersold.

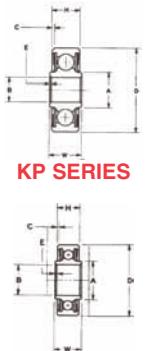
(a) See Page 144 for HM-6

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 MS 27640



KP SERIES

FAFNER ANDMS AFBMA BEARING No.	Bore 27640	B	D	W	H	A	E	C				Moment Constant	Weight Pounds	PRICE EACH
		Outside Diameter + .0000 - .0005 Inches	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 O. D. +.015 -.000 Inches	Outer Ring +.015 -.000 Inches						
					Balls		No.	Size	Inch-	1 Lbs.	Inch			
KP3L*	-3A	.1900	.6250	.245	.203	.280	.005	.010	10	5/32"	51.8	12.08	.01	\$16.40
KP3	-3	.1900	.7774	.297	.270	.331	.005	.022	12	5/32"	93.7	10.13	.03	\$28.40
KP4	-4	.2500	.9014	.484	.335	.390	.005	.032	11	1/4"	130	8.84	.04	\$13.60
KP5	-5	.3125	1.2500	.558	.375	.469	.015	.032	9	5/16"	335	6.77	.09	\$18.50
KP6	-6	.3750	1.4375	.620	.469	.591	.015	.032	10	11/32"	580	5.44	.15	\$21.40
KP8	-8	.5000	1.6875	.620	.500	.768	.015	.044	10	11/32"	1060	4.46	.21	\$22.40

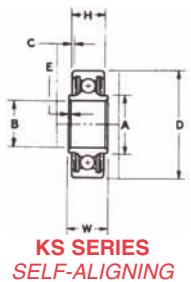
* Stainless steel shield (for "Plya-Seals" use KP3A which has same bore and O.D.)
Equivalent Thrust Load = Thrust + .8 Radial Load + Moment Constant x Moment in Inch Lbs.

KP-A SERIES

KP Series—AN201 MS 27641

FAFNER ANDMS AFBMA BEARING No.	Bore 27641	B	D	W	H	A	E	C				Maximum Static Non-Brinell Rating	Pure Moment Rating	Moment Constant	Weight Pounds	PRICE EACH
		Outside Diameter + .0000 - .0005 Inches	Inner Ring + .0000 - .0005 Inches	Width Outer Ring +.000 -.005 Inches	Width Inner +.000 -.005 Inches	Shoulder Diameter Bore Ring (Approx.) Inches	Corner Chamfer x 45° Inner Ring O. D. +.015 -.000 Inches	Outer Ring +.015 -.000 Inches								
					Balls		No.	Size	Radial Lbs.	Thrust Lbs.	Inch-Lbs.	1 Inch	(Approx.)			
KP3A	3	.1900	.6250	.297	.234	.297	.005	.016	10	1/8"	800	600	51.8	12.08	.01	\$13.40
KP4A	4	.2500	.7500	.281	.219	.380	.005	.016	12	1/8"	1100	900	73.8	10.17	.02	\$10.90
KP5A	5	.3125	.8125	.297	.234	.415	.015	.016	14	1/8"	1300	1000	100	8.76	.02	\$11.60
KP6A	6	.3750	.8750	.313	.250	.495	.015	.016	16	1/8"	1400	1100	130	7.68	.03	\$10.50
KP8A	8	.5000	1.1250	.375	.313	.616	.015	.016	16	5/32"	2200	1700	250	6.14	.05	\$16.35
EW1/2 NORMA		.5040	.9690	.250	.250											----

AP

KS SERIES
SELF ALIGNING

FAFNER ANDMS AFBMA BEARING No.	Bore 27645	B	D	W	H	A	E	C	F				Maximum Static Non-Brinell Rating	Weight Pounds	PRICE EACH		
		Outside Diameter + .0000 - .0005 Inches	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 O. D. +.015 -.000 Inches	Outer Ring +.015 -.000 Inches									
					Balls		No.	Size	Radial Lbs.	Thrust Lbs.	(Approx.)						
KSP3L	3A	.1900	.6250	.245	.203	.257	.005	.016				13	3/32"	400	100	.01	\$15.98
KSP3	3	.1900	.7774	.297	.270	.342	.005	.022	275			12	1/8"	800	200	.03	\$16.80
KSP4	4	.2500	.9014	.484	.335	.400	.005	.032				12	5/32"	1100	300	.04	\$17.85
KSP5	5	.3125	1.2500	.558	.375	.562	.015	.032				13	3/16"	1400	300	.10	\$18.20
KS6	6	.3750	1.4375	.620	.469	.612	.015	.032				13	7/32"	1700	400	.15	\$19.80
*KS6A	6A	.3750	.8750	.313	.250	.475	.016	.016	.277	15	1/8"	1000	200	.03	\$24.50		
KS8	8	.5000	1.6875	.620	.500	.798	.015	.044		16	7/32"	2100	500	.23	\$35.50		

* 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.

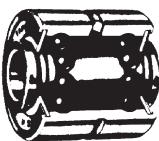
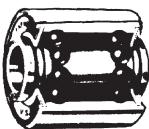
DP SERIES
DOUBLE ROW, BALL

DP Series—AN207 MS27644

FAFNER BEARING No.	MS 27644	B	D	W	H	A	E	C	F				Maximum Static Non-Brinell	Weight Pounds	PRICE EACH
		Outside Diameter + .0000 - .0005 Inches	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 O. D. +.015 -.000 Inches	Outer Ring +.015 -.000 Inches							
					Balls		No.	Size	Radial Lbs.	Thrust Lbs.	(Approx.)				
DPP3	-3	.1900	.7774	.495	.473	.302	.005	.022	20	5/32"	2500	1700	.04	\$35.50	
DPP4	-4	.2500	.9014	.620	.487	.464	.010	.032	22	5/32"	3000	1800	.06	\$21.40	
DPP5	-5	.3125	1.2500	.745	.687	.469	.015	.032	20	1/4"	6900	4200	.17	\$36.20	
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	\$77.86	

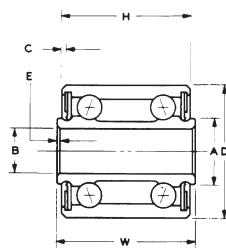
BEARINGS REGREASERS – GREASE FITTINGS

D W SERIES (MS 27647)



GDW

- Extra Wide, Double Row, Ball
- Equipped with removable Plya-Seals
- Dimensionally interchangeable with the DW series, the GDW series is lubricatable through holes and a groove in the outer ring.



FAFNER ANDMS AFBMA BEARING No.	Bore 27647	B	D	W	H	A	E	C	Balls		Pure Moment Rating	Moment Constant	Weight Pounds	PRICE EACH
		Outside Diameter + .0000 - .0005 Inches	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 O. D. +.015 -.000 Inches	Outer Ring +.015 -.000 Inches						
		No.	Size	Inch-Lbs.										
† DW4K2*	-4A	.2500	.6250	.562	.500	.344	.016	.016	16	3/32"	121	3.49	.025	\$81.25
DW4K*	-4	.2500	.7500	.875	.750	.435	.005	.016	14	9/64"	365	2.27	.04	\$31.45
DW5	-5	.3125	.8750	.9375	.8125	.472	.005	.016	26	9/64"	830	1.85	.07	\$31.70
DW6	-6	.3750	1.0625	1.1875	1.0625	.576	.005	.016	24	3/16"	1830	1.38	.12	\$61.50
DW8	-8	.5000	1.4375	1.5000	1.3750	.715	.005	.032	22	17/64"	4330	1.07	.29	\$63.25

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

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	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						
K3L3	.1900	.635	.245	.203	.280	.005	.020	Rad.	.550	10	1/8"	200	.01	\$41.20
KP3AR11-2	.1900	.718	.297	.265	.297	.005	.015	Rad.	.359	10	1/8"	300	.02	\$62.50
K3LR48	.1900	.687	.245	.203	.280	.005	.020	Rad.	3.015	11	5/32"	200	.20	\$55.86
KP4R16	.2500	.901	.484	.335	.390	.005	.005 x 45°	1.000	.015 x 45°	11	5/32"	400	.04	\$71.75
KP4R16-2	.2500	1.000	.390	.335	.390	.005	.015 x 45°	.990	.015 x 45°	11	5/32"	500	.06	\$44.30

The maximum safe working load is that radial load to obtain 100,000 feet peripheral travel life.

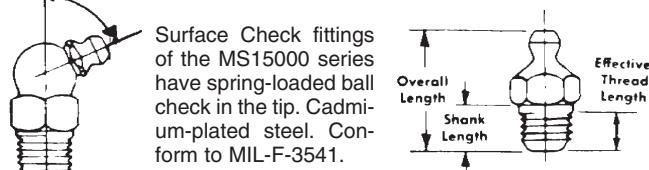
ACS BEARING REGREASERS



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"	\$8.90
4	10650-4	1"	1/4"	\$11.50
5	10650-5	1-1/4"	5/16"	\$12.60
6	10650-6	1-1/2"	3/8"	\$13.50
8	10650-8	1-1/2"	1/2"	\$13.40
Complete Set of Five		P/N 12-11500		\$59.90

GREASE FITTINGS

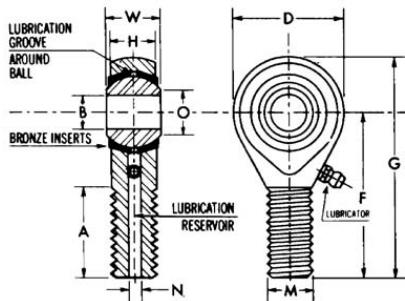


MS No.	Thread	Shank Length	Eff. Thread Length	Overall Length	Tip Angle	Price Each
MS15001-1	1/4-28	3/16"	.109	1/2"	0°	\$0.61
MS15001-4	Taper	3/16"	.109	1/2"	90°	\$1.61
MS15002-1	1/4-28	1/8"	.075	17/32"	0°	\$0.37
MS15003-5	1/8" Pipe	9/32"	.188	31/32"	65°	\$1.70
MS15003-6	1/8" Pipe	9/32"	.188	15/16"	90°	\$1.92

We Will Not Be Undersold.

BEARINGS

HEIM UNIBAL SPHERICAL BEARINGS AND ROD ENDS



ROD ENDS MALE THREADED M and HM SERIES

SPECIFICATIONS:

Outer Member: Aircraft Steel, Cadmium Plated.

Ball: SAE 52100 Steel. Heat Treated

Inserts: Naval Bronze

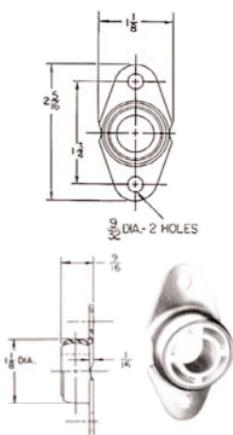


Heim "M" and "MD" series bearings are now manufactured in magnafluxed version only. As old stock is depleted, magnafluxed equivalents will be furnished as substitutes at current (higher) prices unless otherwise requested on the order.

"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 Add \$3.00 to price for lubricator (G) (FG).

ROD END NUMBER	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	M							
		+.0015	+.000	.005		+.010	+.010	+.010	Min	Drill Diam.	Class 3A							
M34-14M	NONE	.1900	.437	.328	.273	.750	1.560	1.935	1.000		33/64	1/4"-28	1,695	.05	\$20.20			
MD35-14 MDL35-14	NONE	.1900	.437	.328	.273	.875	1.375	1.812	.750	#33 .113	33/64	5/16"-24 UNF	2,184	.07	\$31.20 \$24.20			
MD36-14 MDL36-14	NONE	.1900	.437	.328	.273	.750	1.375	1.750	.750	#33 .113	33/64	3/8"-24 UNF	2,848	.07	\$29.60 \$23.30			
MD36-16M MDL36-16	NONE	.1900	.500	.375	.321	.812	1.812	2.219	1.062	#29 .136	19/32	3/8"-24 UNF	2,769	.08	\$28.90 \$30.80			
M44-14 ML44-14	NONE	.2500	.437	.304	.354	.812	1.562	1.968	1.000		9/16	1/4"-28 UNF	1,695	.06	\$30.30 \$26.00			
MD46-15	NONE	.2500	.484	.335	.395	.875	2.312	2.750	1.500	#29	5/8	3/8"-24	3,151	.10	\$32.10			
MD46-16 MDL46-16	NONE	.2500	.500	.335	.375	.875	2.062	2.500	1.500	#21 .159	5/8	3/8"-24 UNF	2,772	.09	\$40.10 \$33.00			
HM-2 HML-2	NONE	.1250	.250	.187	.187	.469	.937	1.172	.500		5/16	6-32 UNC	452	.02	\$24.50 \$19.40			
HM-2A HML-2A	NONE	.1562	.281	.219	.249	.562	1.125	1.406	.625		3/8	8-32 UNC	666	.02	---			
HM-3 HML-3	TRE-3 TREL-3	.1900	.312	.250	.306	.625	1.250	1.563	.750		7/16	10-32 UNF	910	.03	\$14.50 \$22.60			
HM-4 HML-4	TRE-4 TREL-4	.2500	.375	.281	.355	.750	1.562	1.937	1.000		33/64	1/4"-28 UNF	1,695	.05	\$13.90 \$19.70			
HM-5 HML-5	TRE-5 TREL-5	.3125	.437	.344	.447	.875	1.875	2.312	1.250	#33 .113	5/8	5/16"-24 UNF	2,205	.08	\$22.30 \$16.00			
HM-6 HML-6	TRE-6 TREL-6	.3750	.500	.406	.517	1.000	1.938	2.438	1.250	#21 .159	23/32	3/8"-24 UNF	3,172	.11	\$12.80 \$32.60			
HM-7 HML-7	TRE-7 TREL-7	.4375	.562	.437	.586	1.125	2.125	2.688	1.375	#21 .159	13/16	7/16"-20 UNF	4,633	.16	\$16.30 \$22.80			
HM-8 HML-8	TRE-8 TREL-8	.5000	.625	.500	.698	1.312	2.438	3.094	1.500	#3 .213	15/16	1/2"-20 UNF	5,876	.24	\$20.70 \$29.50			

UNF = Universal Fine, UNC = Universal Coarse

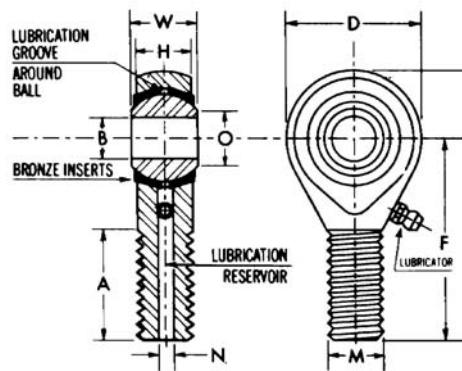


TRIANGLE MFG. BEARINGS

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	\$1.50	FM1508P	1/2"	Iron	\$1.15
FMN5	5/16"	Nylon	\$1.15	FM1408P	1/2"	Bronze	\$1.57
FMN6	3/8"	Nylon	\$1.05	FMN10	5/8"	Nylon	\$1.01
FM1406P	3/8"	Bronze	\$2.10	FM1510P	5/8"	Iron	\$1.58
FMN7	7/16"	Nylon	\$1.35	FM1410P	5/8"	Bronze	\$2.05
FMN8	1/2"	Nylon	\$1.29	FMN12	3/4"	Nylon	\$0.85
				FM1512P	3/4"	Iron	\$1.29

BEARINGS



ROD END MALE THREADED HMX 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.

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.

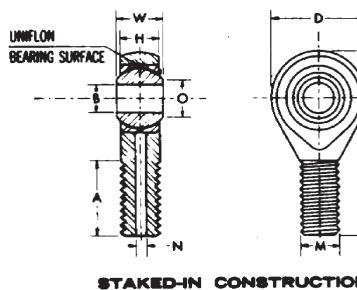
Example: HMX-4FG. Additional costs will apply.

Note: See Pg 146 for Aurora Equivalents to Heim HM & HF Series.



AP

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	Class 3A	Radial	Axial		
HMX-4G	ARE 4-20	.2500	.375	.281	.355	.750	1.560	1.937	1.000	#33	33/64	5/16"-24 UNF	5,390	1,710	.06	\$32.90
HMXL-4G	AREL-20								.113							\$31.90
HMX-5G	ARE-5-20	.3125	.437	.344	.447	.875	1.375	2.312	1.250	#21	5/8	3/8"-24 UNF	7,504	2,376	.09	\$23.70
HMXL-5G	AREL-5-20								.159							\$122.95
HMX-6G	ARE 6-20	.3750	.500	.406	.517	1.000	1.375	2.438	1.250	#21	23/32	7/16"-20 UNF	9,589	2,946	.13	\$31.10
HMXL-6G	AREL 6-20								.159							\$37.90
HMX-7G	ARE 7-20	.4375	.562	.437	.586	1.125	1.812	2.688	1.375	#21	13/16	1/2"-20 UNF	11,055	3,367	.18	\$32.20
HMXL-7G	AREL 7-20								.159							\$66.55
HMX-8G	ARE 8-20	.5000	.625	.500	.698	1.312	1.562	3.094	1.500	#3	15/16	5/8"-18 UNF	13,586	4,074	.30	\$35.10
HMXL-8G	AREL 8-20								.213							\$35.70



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.

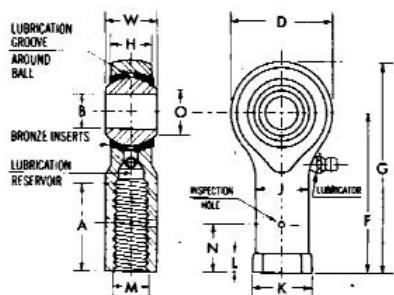
"R" in part number indicates woven uniflon. Example: HMR-3.

*Uniflon® — The Heim Universal Corporation's trademark for teflon® lined rod ends and spherical bearings.



ROD END NUMBER	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	M	Class 3A	Ball Diam.			
HMLE-3															\$40.85
HME-4	.2500	.375	.281	.355	.750	1.562	1.937	1.000		33/64	1/4"-28	1,550	.05		\$39.35
HME-5	.3125	.437	.344	.447	.875	1.875	2.312	1.250	#33	5/8	5/16"-24 UNF	2,080	.08		\$49.75
HMLE-5									.113						\$59.60
HME-6	.3750	.500	.406	.517	1.000	1.938	2.438	1.250	#21	23/32	3/8"-24 UNF	2,950	.11		---
HMLE-6									.159						\$47.85
HME-7	.4375	.562	.437	.586	1.125	2.125	2.688	1.375	#21	13/16	7/16"-20 UNF	3,160	.16		\$48.45
HMLE-7									.159						\$27.95
HME-8	.5000	.625	.500	.698	1.312	2.438	3.094	1.500	#3	15/16	1/2"-20 UNF	4,925	.24		\$57.60
HMLE-8									.213						\$35.15

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.



SAVE! NEW SURPLUS HEIM BEARINGS

These bearings are in like-new condition and are available in limited quantities at substantially lower prices than our new manufacture bearings. No certification available.

FL35-14P/N 05-00028\$14.95 ea.

AP

Rod End No.	Equiv. Spherco 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						
		+.0015	+.000	+.005		+.010	+.010	+.010	Min	+.010	+.010	+.005	+.010	Ball Diam.	Class 3B					
FL34-14		.1900	.437	.328	.273	.750	1.375	1.75	.75	.468	.375	.312	.187	33/64	1/4-28			\$40.00		
F34-16		.1900	.500	.375	.321	.812	1.375	1.781	.750	.468	.375	.312	.187	19/32	1/4"-28 UNF	2,769	.08	\$68.75 \$59.25		
FL34-16	NONE	.1900	.500	.375	.321	.812	1.375	1.781	.750	.468	.375	.312	.187	33/64	5/16"-24 UNF	2,848	.07	\$27.90 \$26.60		
F35-14**	NONE	.1900	.437	.328	.273	.750	1.375	1.750	.750	.500	.438	.312	.187	33/64	1/4"-28 UNF	2,948	.07	\$28.50 \$23.10		
FL35-14	NONE	.1900	.437	.328	.273	.750	1.375	1.750	.750	.468	.375	.312	.187	9/16	5/16"-24 UNF	3,723	.11	\$36.30 \$32.90		
F44-14	NONE	.2500	.437	.304	.354	.812	1.375	1.781	.750	.468	.375	.312	.187	11/16	6-32 UNC	1,201	.02	\$34.40 \$30.80		
FL44-14		.2500	.437	.304	.354	.812	1.375	1.781	.750	.468	.375	.312	.187	5/16"-24 UNF	1,695	.02	\$24.60 \$19.60			
F45-19	NONE	.2500	.593	.438	.347	.938	1.469	1.938	.750	.500	.438	.312	.187	11/16	8-32 UNC	1,872	.04	\$11.60 \$18.50		
FL45-19		.2500	.593	.438	.347	.938	1.469	1.938	.750	.500	.438	.312	.187	7/16	10-32 UNF	2,704	.05	\$26.90		
HF-2	NONE	.1250	.250	.187	.187	.469	.812	1.046	.375	.312	.250	.250	.187	5/16	5/16"-24 UNF	3,380	.08	\$9.98 \$41.60		
HFL-2		.1250	.250	.187	.187	.469	.812	1.046	.375	.312	.250	.250	.187	5/16	3/8"-24 UNF	4,451	.13	\$13.70 \$12.00		
HF-2A	NONE	.1562	.281	.219	.249	.562	.875	1.156	.375	.344	.281	.250	.187	3/8	7/16"-20 UNF	5,356	.18	\$16.20 \$20.80		
HFL-2A		.1562	.281	.219	.249	.562	.875	1.156	.375	.344	.281	.250	.187	3/8	1/2"-20 UNF	7,436	.29	\$17.30 \$17.80		
HF-3	TR-3	.1900	.312	.250	.306	.625	1.062	1.375	.562	.406	.312	.312	.187	7/16						
HFL-3	TRL-3	.1900	.312	.250	.306	.625	1.062	1.375	.562	.406	.312	.312	.187	7/16						
HFL-4	TRL-4	.2500	.375	.281	.355	.750	1.312	1.687	.750	.468	.375	.312	.187	33/64						
HF-5	TR-5	.3125	.437	.344	.447	.875	1.375	1.812	.750	.500	.437	.406	.187	5/8						
HFL-5	TRL-5	.3125	.437	.344	.447	.875	1.375	1.812	.750	.500	.437	.406	.187	5/8						
HF-6	TR-6	.3750	.500	.406	.517	1.000	1.625	2.125	.937	.687	.562	.469	.250	23/32						
HFL-6	TRL-6	.3750	.500	.406	.517	1.000	1.625	2.125	.937	.687	.562	.469	.250	23/32						
HF-7	TR-7	.4375	.562	.437	.586	1.125	1.812	2.375	1.062	.750	.625	.531	.250	13/16						
HFL-7	TRL-7	.4375	.562	.437	.586	1.125	1.812	2.375	1.062	.750	.625	.531	.250	13/16						
HF-8	TR-8	.5000	.625	.500	.698	1.312	2.125	2.781	1.187	.875	.750	.594	.250	15/16						
HFL-8	TRL-8	.5000	.625	.500	.698	1.312	2.125	2.781	1.187	.875	.750	.594	.250	15/16						

*F34-14 Dimensionally the same as Fafnir REPB3N. **F35-14 Dimensionally the same as Fafnir REPB3N2



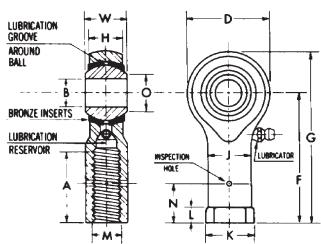
SEALS-IT ROD END SEALS

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	\$2.35
5/16	.325	.450	.710	.200	.047	05-3125	\$2.35
3/8	.386	.525	.775	.220	.047	05-3750	\$2.35
7/16	.445	.610	.910	.250	.047	05-4375	\$2.35
1/2	.515	.710	1.125	.250	.047	05-5001	\$2.35
5/8	.638	.900	1.250	.250	.047	05-6250	\$2.95
3/4	.763	1.00	1.375	.375	.047	05-7500	\$3.05

BEARINGS



UNIFLON LINED HFE SERIES

SPECIFICATIONS:

Outer Member: Carbon steel-protective coated for corrosion resistance.

Ball: Carbon steel-heat treated, chrome plated.

Race: Aluminum.

Liner: Self lubricating UNIFLON.

"L" in rod end number designates left hand thread.

"R" in part number indicates woven uniflon. Example: HFR-3.



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						
HFE-3	.1900	.312	.250	.306	.625	1.062	1.375	.562	.406	.312	.312	.187	7/16	10-32 UNF	865	.04	\$38.00		
HFLE-3	.1900	.312	.250	.306	.625	1.062	1.375	.562	.406	.312	.312	.187	7/16	10-32 UNF	865	.04	\$34.90		
HFE-4	.2500	.375	.281	.355	.750	1.312	1.687	.750	.468	.375	.312	.187	33/64	1/4"-28 UNF	1,550	.05	\$41.20		
HFLE-4	.2500	.375	.281	.355	.750	1.312	1.687	.750	.468	.375	.312	.187	33/64	1/4"-28 UNF	1,550	.05	\$26.90		
HFE-5	.3125	.437	.344	.447	.875	1.375	1.812	.750	.500	.437	.406	.187	5/8	5/16"-24 UNF	2,080	.08	\$38.70		
HFLE-5	.3125	.437	.344	.447	.875	1.375	1.812	.750	.500	.437	.406	.187	5/8	5/16"-24 UNF	2,080	.08	\$12.28		
HFE-6	.3750	.500	.406	.517	1.000	1.625	2.125	.937	.687	.562	.469	.250	23/32	3/8"-24 UNF	2,950	.13	\$46.60		
HFLE-6	.3750	.500	.406	.517	1.000	1.625	2.125	.937	.687	.562	.469	.250	23/32	3/8"-24 UNF	2,950	.13	\$26.30		
HFE-7	.4375	.562	.437	.586	1.125	1.812	2.375	1.062	.750	.625	.531	.250	13/16	7/16"-20 UNF	3,160	.18	\$45.00		
HFLE-7	.4375	.562	.437	.586	1.125	1.812	2.375	1.062	.750	.625	.531	.250	13/16	7/16"-20 UNF	3,160	.18	\$16.60		
HFE-8	.5000	.625	.500	.698	1.312	2.125	2.781	1.187	.875	.750	.594	.250	15/16	1/2"-20 UNC	4,925	.29	\$28.30		
HFLE-8	.5000	.625	.500	.698	1.312	2.125	2.781	1.187	.875	.750	.594	.250	15/16	1/2"-20 UNC	4,925	.29	\$18.88		

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.

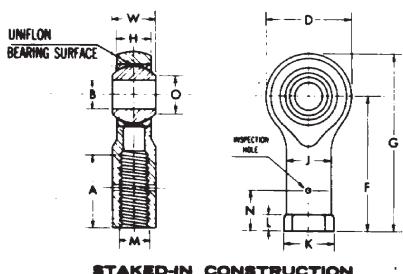
Inserts: Aluminum Bronze.

"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.

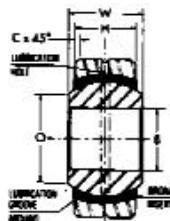
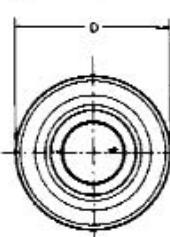
Example: HFX-4FG.



Add \$3.00 to price for lubricator (G) (FG).

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						
HFX-4G	.2500	.375	.281	.355	.750	1.312	1.687	.750	.468	.375	.312	.187	33/64	1/4"-28 UNF	5,390	1,710	.06	\$26.60	
HFXL-4G	.2500	.375	.281	.355	.750	1.312	1.687	.750	.468	.375	.312	.187	33/64	1/4"-28 UNF	5,390	1,710	.06	\$26.10	
HFX-5G	.3125	.437	.344	.447	.875	1.375	1.812	.750	.500	.437	.406	.187	5/8	5/16"-24 UNF	7,504	2,376	.08	\$21.50	
HFXL-5G	.3125	.437	.344	.447	.875	1.375	1.812	.750	.500	.437	.406	.187	5/8	5/16"-24 UNF	7,504	2,376	.08	\$15.30	
HFX-6G	.3750	.500	.406	.517	1.000	1.625	2.125	.937	.687	.562	.469	.250	23/32	3/8"-24 UNF	9,589	2,946	.14	\$35.20	
HFXL-6G	.3750	.500	.406	.517	1.000	1.625	2.125	.937	.687	.562	.469	.250	23/32	3/8"-24 UNF	9,589	2,946	.14	\$21.70	
HFX-7G	.4375	.562	.437	.586	1.125	1.812	2.375	1.062	.750	.625	.531	.250	13/16	7/16"-20 UNF	11,055	3,367	.18	\$32.10	
HFXL-7G	.4375	.562	.437	.586	1.125	1.812	2.375	1.062	.750	.625	.531	.250	13/16	7/16"-20 UNF	11,055	3,367	.18	\$54.50	
HFX-8G	.5000	.625	.500	.698	1.312	2.125	2.781	1.187	.875	.750	.594	.250	15/16	1/2"-20 UNC	13,586	4,074	.29	\$28.30	
HFXL-8G	.5000	.625	.500	.698	1.312	2.125	2.781	1.187	.875	.750	.594	.250	15/16	1/2"-20 UNC	13,586	4,074	.29	\$23.30	

BEARINGS

**SPECIFICATIONS:****LS SERIES****Outer Member:** Low Carbon Steel, Exposed Surfaces Cadmium Plated.**Ball:** SAE 52100 Steel, Heat Treated.**Inserts:** Naval Bronze.**LSS SERIES****Outer Member:** SAE 4130 Steel, Heat Treated to 175,000 PSI, Cadmium Plated.**Ball:** SAE 52100 Steel, Heat Treated Chrome Plated.**Inserts:** Aluminum Bronze.**LHA SERIES****Outer Member:** SAE 4130 Steel, Heat Treated to 175,000 PSI, Cadmium Plated.**Ball:** SAE 52100 Steel, Heat Treated Chrome Plated.

AP

SPHERICAL BEARING NUMBER	EQUIV. SPHERCO NO.	DIMENSIONS							Max. Static Radial Load in Pounds Approx.	Approx. Weight in Pounds	PRICE EACH
		Bore B + .0000 - .0005	Outside Diam. D + .0000 - .0005	Ball Width W + .000 - .005	Outer Member Width H + .000 - .005	Ball Flat Diam. O	Chamfer C + .015 - .000	Ball Diam.			
LS-3	NONE	.1900	.6250	.281	.187	.293	.016	13/32	2,961	.02	\$22.90
LS-4	NONE	.2500	.7500	.375	.281	.354	.016	33/64	5,246	.04	\$9.80
LS-5	NONE	.3125	.8750	.437	.313	.447	.016	5/8	6,554	.05	\$21.70
LS-6	NONE	.3750	1.0000	.500	.375	.517	.016	23/32	8,606	.08	\$15.40
LS-7	NONE	.4375	1.1875	.562	.437	.586	.032	13/16	11,100	.12	\$17.75
LS-8	NONE	.5000	1.3125	.687	.531	.637	.044	15/16	15,600	.18	\$23.30

LSS-2	NONE	.1650	.4687	.250	.187	.235	.020	11/32	2,000	.01	\$37.80
LSS-3	SBG-3	.1900	.5625	.281	.218	.293	.020	13/32	2,754	.02	\$21.50
LSS-6	SBG-6	.3750	.8125	.406	.312	.475	.032	5/8	7,150	.04	\$19.90
LSS-7	SBG-7	.4375	.9062	.4375	.343	.530	.032	11/16	8,625	.05	---
LSS-8	SBG-8	.5000	1.000	.500	.390	.600	.032	25/32	11,200	.07	\$26.40

LHA-2	NONE	.1650	.4687	.250	.187	.235	.020	11/32	4,400	.01	\$25.90
LHA-3	SBG-3S	.1900	.5625	.281	.218	.293	.020	13/32	6,480	.02	\$22.70
LHA-4	SBG-4S	.2500	.6562	.343	.250	.364	.022	1/2	10,000	.02	\$19.20
LHA-5	SBG-5S	.3125	.7500	.375	.281	.419	.022	9/16	13,900	.03	\$14.10
LHA-6	SBG-6S	.3750	.8125	.406	.312	.475	.032	5/8	18,750	.04	\$19.30
LHA-7	SBG-7S	.4375	.9062	.4375	.343	.530	.032	11/16	22,300	.05	\$11.60
LHA-8	SBG-8S	.5000	1.000	.500	.390	.600	.032	25/32	26,900	.07	\$14.60

The allowable static axial loads are one-fourth of radial loads given above.

LOW PRICE GUARANTEE

WE WILL MATCH ANY COMPETITOR'S CURRENT PRICE.
IF YOU FIND A LOWER PRICE, PLEASE TELL US.

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 - Alloy 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.

AP

AURORA EQUIVALENTS TO HEIM HM & HF SERIES

MALE			FEMALE		
Aurora P/N	Heim P/N	Price Each	Aurora P/N	Heim P/N	Price Each
MM-2	HM-2	\$6.20	MW-2	HF-2	\$5.70
MB-2	HML-2	\$5.80	MG-2	HFL-2	\$5.90
MM-3	HM-3	\$5.90	MW-3	HF-3	\$5.40
MB-3	HML-3	\$5.80	MG-3	HFL-3	\$5.60
MM-4	HM-4	\$5.95	MW-4	HF-4	\$5.90
MB-4	HML-4	\$6.20	MG-4	HFL-4	\$5.95
MM-5	HM-5	\$6.70	MW-5	HF-5	\$6.20
MB-5	HML-5	\$7.00	MG-5	HFL-5	\$6.40
MM-6	HM-6	\$7.60	MW-6	HF-6	\$7.30
MB-6	HML-6	\$7.50	MG-6	HFL-6	\$7.60
MM-7	HM-7	\$9.40	MW-7	HF-7	\$9.00
MB-7	HML-7	\$9.40	MG-7	HFL-7	\$9.20
MM-8	HM-8	\$11.90	MW-8	HF-8	\$11.90
MB-8	HML-8	\$11.80	MG-8	HFL-8	\$12.50

AURORA EQUIVALENTS TO HEIM HMX & HFX SERIES

MALE			FEMALE		
Aurora P/N	Heim P/N	Price Each	Aurora P/N	Heim P/N	Price Each
XAM-4Z	HMX-4G	\$14.60	AW-4Z	HFX-4G	\$14.60
XAB-4Z	HMLX-4G	\$14.90	AG-4Z	HFLX-4G	\$13.80
XAM-5Z	HMX-5G	\$17.40	AW-5Z	HFX-5G	\$14.80
XAB-5Z	HMLX-5G	\$15.70	AG-5Z	HFLX-5G	\$14.20
XAM-6Z	HMX-6G	\$19.90	AW-6Z	HFX-6G	\$16.95
XAB-6Z	HMLX-6G	\$20.90	AG-6Z	HFLX-6G	\$15.50
XAM-7Z	HMX-7G	\$24.90	AW-7Z	HFX-7G	\$18.90
XAB-7Z	HMLX-7G	\$21.90	AG-7Z	HFLX-7G	\$14.74
XAM-8Z	HMX-8G	\$31.40	AW-8Z	HFX-8G	\$25.50
XAB-8Z	HMLX-8G	\$27.54	AG-8Z	HFLX-8G	\$22.60

AURORA EQUIVALENTS TO HEIM HMR & HFR SERIES

MALE			FEMALE		
Aurora P/N	Heim P/N	Price Each	Aurora P/N	Heim P/N	Price Each
MM-3T	HMR-3	\$8.95	MW-3T	HFR-3	\$8.85
MB-3T	HMRL-3	\$8.70	MG-3T	HFLR-3	\$8.00
MM-4T	HMR-4	\$9.40	MW-4T	HFR-4	\$8.90
MB-4T	HMRL-4	\$9.30	MG-4T	HFLR-4	\$8.90
MM-5T	HMR-5	\$10.50	MW-5T	HFR-5	\$9.40
MB-5T	HMRL-5	\$9.85	MW-6T	HFR-6	\$10.10
MM-6T	HMR-6	\$10.90	MG-6T	HFR-6	\$11.10
MB-6T	HMRL-6	\$10.60	MW-7T	HFR-7	\$11.23
MM-7T	HMR-7	\$12.90	MG-7T	HFLR-7	\$9.38
MB-7T	HMRL-7	\$11.60	MW-8T	HFR-8	\$14.50
MM-8T	HMR-8	\$14.20	MG-8T	HFLR-8	\$14.70
MB-8T	HMRL-8	\$14.80			

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	Heim P/N	Price	Aurora P/N	Heim P/N	Price
GMM-3M-470	M34-14M	\$10.70	GMW-3M-470	F34-14M	\$20.90
GMB-3M-470	ML34-14M	\$12.40	GMG-3M-470	FL34-14M	---
GMM-3M-570	MD35-14M	\$12.90	GMW-3M-471	F347-14M	\$66.75
GMB-3M-570	MDL35-14M	\$27.70	GMG-3M-471	FL347-14M	---
GMM-3M-670	MD36-14M	\$13.10	GMW-3M-480	F35-14M	\$27.90
GMB-3M-670	MDL36-14M	\$20.80	GMG-3M-480	FL35-14M	---
GMM-3M-680	MD36-16M	\$13.20	GMW-4M-470	F44-14M	---
GMB-3M-680	MDL36-16M	\$28.30	GMG-4M-470	FL44-14M	---
GMM-4M-470	M44-14M	\$15.40	GMW-4M-595	F45-19M	\$36.30
GMB-4M-470	ML44-14M	\$31.50	GMG-4M-595	FL45-19M	\$32.90
GMM-4M-675	MD46-15M	\$15.30			
GMB-4M-675	MDL46-15M	\$30.00			
GMM-4M-680	MD46-16M	\$16.40			
GMB-4M-680	MDL46-16M	\$60.50			



AP

AURORA EQUIVALENTS TO HEIM HFE & HME SERIES

MALE			FEMALE		
Aurora P/N	Heim P/N	Price	Aurora P/N	Heim P/N	Price
MW-3TM-125	HFE-3	\$54.75	MM-3TM-125	HME-3	\$38.30
MG-3TM-125	HFEL-3	\$55.00	MB-3TM-125	HMEL-3	---
MW-4TM-125	HFE-4	\$56.00	MM-4TM-125	HME-4	\$39.35
MG-4TM-125	HFEL-4	\$56.25	MB-4TM-125	HMEL-4	---
MW-5TM-125	HFE-5	\$58.50	MM-5TM-125	HME-5	\$49.75
MG-5TM-125	HFEL-4	\$58.75	MB-5TM-125	HMEL-5	---



AURORA EQUIVALENTS TO HEIM LS & LHA SERIES

MALE			FEMALE		
Aurora P/N	Heim P/N	Price	Aurora P/N	Heim P/N	Price
MW-3TM-125	HFE-3	\$54.75	MM-3TM-125	HME-3	\$38.30
MG-3TM-125	HFEL-3	\$55.00	MB-3TM-125	HMEL-3	---
MW-4TM-125	HFE-4	\$56.00	MM-4TM-125	HME-4	\$39.35
MG-4TM-125	HFEL-4	\$56.25	MB-4TM-125	HMEL-4	---
MW-5TM-125	HFE-5	\$58.50	MM-5TM-125	HME-5	\$49.75
MG-5TM-125	HFEL-4	\$58.75	MB-5TM-125	HMEL-5	---

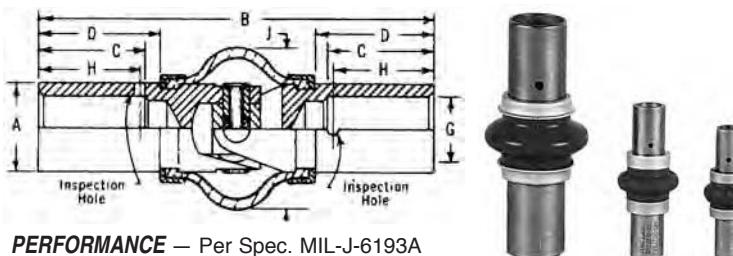


AURORA CM-5 & CB-5 MALE ROD ENDS WITH STUDS

Rod End no.		Dimension in inches									
Right Hand	Left Hand	H Ref.	A ± .015	D Ref.	C +.062 -.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	\$5.60
CM-4S*	CB-4S*	.250	1.562	.750	1.000	1.031	.562	.500	1/4-28	50	\$5.80
CM-5S*	CB-5S*	.312	1.875	.875	1.250	1.219	.687	.593	5/16-24	50	\$6.30
CM-6S	CB-6S	.3591	.938	1.000	1.250	1.562	.906	.812	3/8-24	50	\$7.00
CM-7S	CB-7S	.406	2.125	1.125	1.375	1.750	1.062	.937	7/16-20	50	\$8.30
CM-8S	CB-8S	.453	2.438	1.312	1.500	2.000	1.125	1.000	1/2-20	50	\$10.90
CM-10S	CB-10S	.484	2.625	1.500	1.625	2.500	1.500	1.375	5/8-18	50	\$15.80
CM-12S	CB-12S	.593	2.875	1.625	1.750	3.000	1.812	1.625	3/4-16	50	\$23.70

* Grease fittings not available on these sizes. Units are supplied without grease fittings.

BEARINGS – UNIVERSAL JOINTS



PERFORMANCE — Per Spec. MIL-J-6193A

SPECIFICATIONS — per Military Standard Drawing MS 20271

APEX 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	\$84.50
MS20271-B8	1/2	\$87.00
MS20271-B10	5/8	\$65.50
MS20271-B12	3/4	\$73.60
MS20271-B14	7/8	\$78.90

AP

*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 ultimates have been imposed without binding. These characteristics insure high safety factors under the most difficult operating conditions.

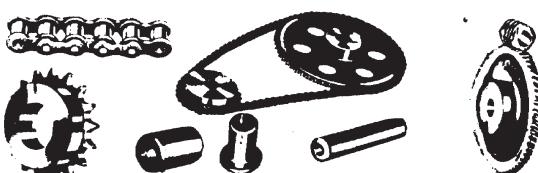
BALL JOINT ASSEMBLIES



COMMERCIAL

Ball Joint Style	Female End	Male End	Part No.	Price Each
AN276-6 Style	1/4-28	1/4-28	05-07300	\$6.95
Commercial	10-32	1/4-28	05-07400	\$3.80
Commercial	10-32	10-32	05-07500	\$1.90
Commercial	1/4-28	1/4-28	05-07600	\$16.60

GEARS, CHAINS, SPROCKETS AND BEARINGS



BOSTON GEAR PRODUCTS

STEEL SPROCKETS - These sprockets have many applications in a control system. Hub type.

Part No.	Size	No. of Teeth	Price
25B12	1/4"	12	\$11.90
25B15	1/4"	15	\$8.70
25B20	1/4"	20	\$14.20
35B14	3/8"	14	\$12.70

BUSHINGS - As used on the Solitaire Sailplane.

Bushing Part No.	Price
FF520-10	\$0.34
FF620	\$2.95

ROLLER CHAIN - These chains fit above sprockets.

1/4" Chain (10 Ft. Pkg. with 2 Links)	P/N 05-29325	\$39.00
3/8" Chain (10 Ft. Pkg. with 2 Links)	P/N 05-29335	\$31.95
Extra Links.....	P/N 05-29300	\$2.65

CD-1145	Gear	\$50.75
FB-35-1	Flange Bearing	\$0.96
FB-35-2	Flange Bearing	\$3.20
FB-1012-4 ..	Flange Bearing	\$2.90
FB-1013-8 ..	Flange Bearing	\$3.60
FB-1620-10	Flange Bearing	\$5.40
FB-2024-10	Flange Bearing	\$5.50
FB-46-2	Flange Bearing	\$1.40
FB-46-4	Flange Bearing	\$2.55

COMPLETE LINE OF BOSTON GEAR PRODUCTS AVAILABLE

SINTERED BRONZE OIL IMPREGNATED BEARINGS

Plain Bearings

Part Number	Hole ID	Hole OD	Length	Price
PB316	3/16	5/16	3/4"	\$1.91
PB14	1/4	3/8	1"	\$0.54
PB123	1/2	3/4	3/4"	\$0.90
PB127	1/2	3/4	3/4"	\$1.10
PB916	9/16	3/4	1"	\$1.20
PB58	5/8	3/4	1"	\$5.70
PB34	3/4	7/8	1"	\$1.45

Flange Bearings

Part Number	Hole ID	Hole OD	Length	Flange OD	Flange Thickness	Price
FB-14	1/4	3/8	1/4"	15/32	1/16	\$1.40
FB-122	1/2	5/8	1/2"	7/8	1/16	\$0.72
FB-121	1/2	5/8	1"	7/8	1/16	\$1.56
FB-123	1/2	3/4	1"	15/16	1/8	\$3.25
FB-581	5/8	3/4	1/2"	1	3/32	\$0.74
FB-582	5/8	3/4	1"	1	3/32	\$2.40
FB-34	3/4	7/8	3/4	1-1/8	1/8	\$1.58
FB-1	1	1-1/4	3/4	1-5/8	1/8	\$3.15

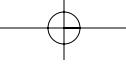


BELLCRANK BEARINGS

Part No.	Bore	Flange Dia.	Race Width	Price Each
BC4W10* (AN218-4)	1/4"	1-5/8"	5/8"	\$15.30
BC5W11	5/16"	1-11/16"	5/8"	\$21.60
BCP4W10-98-1110	1/4"	1-5/8"	5/8"	\$83.25

*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

Quantity discount quoted on request



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 Bulkhead Fittings	3.37"	0.35"
A-800	Friction Lock (10-32)	3.37**	0.35"				

*Length of exposed wire. **Recommended minimum bending radius for all controls is 5" (never less than 3")

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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)

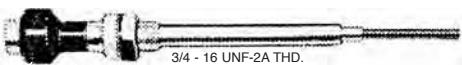


Prop Control
(Blue)

The FAA has recently adopted a standard configuration for cockpit control knobs in production aircraft type-certified 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.

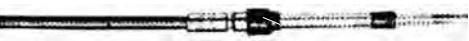
THROTTLES - CONTROLS



3/4 - 16 UNF-2A THD.

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	Length					
Color	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	\$55.95	\$57.20	\$58.25	\$59.30	\$59.90	\$60.95

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" longP/N 05-07980\$78.50



3/4 - 16 UNF-2A THD.

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	Length					
Color	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	\$52.20	\$52.50	\$52.90	\$53.30	\$53.90	\$54.25

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-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	Length					
Color	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	\$59.00	\$60.25	\$61.50	\$62.50	\$63.75	\$74.25

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	Length					
Color	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	\$51.20	\$52.30	\$53.20	\$54.60	\$58.25	\$59.25

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-810 FRICTION LOCK CONTROL

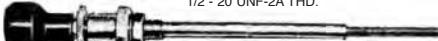
(1/4-28 Threaded End)



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	Length					
Color	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	\$54.25	\$55.50	\$56.50	\$57.75	\$58.75	\$59.90

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 A-820 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	Length					
Color	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	\$46.10	\$47.20	\$48.30	\$49.50	\$50.75	\$51.75

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 & A-800 CONTROLS

The A-790-12 vernier mixture control and the A-800-12 friction-lock throttle control are approved for Cessna 172, 172A thru Q; Cessna 150, 150A thru M, A150K, A150L, A150M; Cessna 152, A152. Other approvals pending. Order by Part Number and state Cessna model and serial number. A790-12 is 53" long. A800-12 length is based on serial number provided. Note: For Special Length Controls over 25 ft. Long, Add Extra \$15.00 to set-up fee.

P/N A-790-12.....\$110.95 P/N A-800-12\$110.95

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

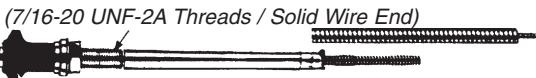
Prices Subject to Change Without Notice

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AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

THROTTLES – CONTROLS

A-700 BUTTON LOCK DASH CONTROL



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	\$42.70	\$43.40	\$44.20	\$45.60

A-770 BUTTON LOCK DASH CONTROL



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	\$50.75	\$52.00	\$53.25	\$56.00

A-780 BUTTON LOCK DASH CONTROL



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	\$53.50	\$54.50	\$55.75	\$58.50

A-1860 T-HANDLE BUTTON LOCK DASH CONTROL



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	\$53.00	\$53.75	\$54.25	\$58.50

A-1840 T-HANDLE BUTTON LOCK DASH CONTROL



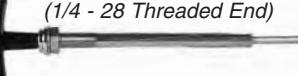
Same as A-700 control above except has black powder-coated aluminum T-handle with aluminum release button. Order by part number.

Knob Color	Length			
	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-13572	05-13584	05-13596	05-13520
Price	\$44.30	\$44.70	\$45.10	\$46.60

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. Also available with 2 female threaded ends. 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, -5 or -6 to Dash number for length. P/N 10376\$10.85/ea

A-1870 T-HANDLE BUTTON LOCK DASH CONTROL



Same as A-780 control above except has black powder-coated aluminum T-handle with aluminum release button. Order by part number.

Knob Color	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-16872	05-16884	05-16896	05-16820
Price	\$53.75	\$54.85	\$56.25	\$58.90

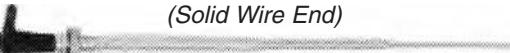
A-730 GLIDE FREE CONTROL (Solid Wire End)



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	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

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	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-13872	05-13884	05-13896	05-13820
Price	\$28.10	\$28.90	\$29.80	\$30.90

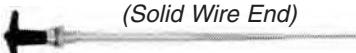
A-740 RATCHET CONTROL (Solid Wire End)



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	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

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	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-14272	05-14284	05-14296	05-14220
Price	\$29.20	\$29.85	\$30.90	\$31.90

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	\$32.20	96"	05-12796	\$37.90
48"	05-12748	\$34.70	108"	05-127108	\$38.85
60"	05-12760	\$34.35	120"	05-127120	\$39.95
72"	05-12772	\$35.40	132"	05-127132	\$42.40
84"	05-12784	\$37.80	144"	05-127144	\$43.50

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	\$34.70	96"	05-30096	\$40.30
48"	05-30048	\$36.40	108"	05-30108	\$40.70
60"	05-30060	\$38.00	120"	05-30120	\$41.90
72"	05-30072	\$37.50	132"	05-30132	\$43.50
84"	05-30084	\$39.70	144"	05-30144	\$44.50

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.	8Ft.
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	\$61.75	\$62.95	\$64.50	\$65.50	\$66.75	\$67.90

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.	8Ft.
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	\$62.50	\$63.75	\$65.00	\$66.00	\$67.25	\$68.50

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	\$24.50	96"	05-16996	\$30.50
48"	05-16948	\$25.60	108"	05-169108	\$31.40
60"	05-16960	\$26.70	120"	05-169120	\$32.80
72"	05-16972	\$28.10	132"	05-169132	\$33.60
84"	05-16984	\$29.20	144"	05-169144	\$34.70

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	\$25.60	96"	05-17096	\$31.40
48"	05-17048	\$26.80	108"	05-170108	\$32.50
60"	05-17060	\$27.60	120"	05-170120	\$41.70
72"	05-17072	\$29.10	132"	05-170132	\$34.70
84"	05-17084	\$30.30	144"	05-170144	\$35.80

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	Part No.	6 Ft.	7 Ft.	8 Ft.	10 Ft.	
A-1610	.078 Wire	05-17172	\$94.75	05-17184	\$95.75	05-17196	\$97.00
A-1620	10-32 Thread	05-17272	\$101.95	05-17284	\$102.95	05-17296	\$103.95
A-1630	1-1/4-28 Thread	05-17372	\$102.95	05-17384	\$103.95	05-17396	\$104.95

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	Part No.	6 Ft.	7 Ft.	8 Ft.	10 Ft.	
A-1640	.078 Wire	05-17472	\$118.95	05-17484	\$121.95	05-17496	\$123.95
A-1650	10-32 Thread	05-17572	\$123.95	05-17584	\$125.95	05-17596	\$127.95
A-1660	1-1/4-28 Thread	05-17672	\$125.95	05-17684	\$127.95	05-17696	\$129.95

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					
Color	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8Ft.
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	\$67.00	\$68.00	\$69.25	\$70.50	\$71.75	\$72.75

THROTTLES – CONTROL ATTACHMENTS



FRICITION 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	\$56.50	5 Ft.	05-13900	\$58.75
4 Ft.	05-13800	\$57.75	6 Ft.	05-14000	\$59.75

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/N 05-29100.....\$4.15

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	\$16.20
8 Ft. Dash Control	P/N 05-14300	\$20.70
10 20 30 40 50 60		

INSERTS ONLY - Round pressure-sensitive labels, 3/4" dia. White lettering on black back-



ground. 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". \$0.35 Ea

T-HANDLE DASH CONTROL

T-Handle dash control manufactured of duralumin 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 front or rear of instrument panel. Complete with wire and casing which may be shortened.

CONTROLS WITH SINGLE WIRE	
5 Ft. Control	P/N 05-15000
8 Ft. Control	P/N 05-15100
12 Ft. Control	P/N 05-15200

CONTROL WITH 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. requirements for shape and color. When ordering please provide: Make, Model, and Serial.

P/N 05-02486.....\$327.50

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° 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.

Dimensions: Backplate 2.0625 x 1.4375 Split eyeball1.00
Hole in pressure plates9375

Part No	Size	Price Each
05-00956	.125 Dia. installations	\$26.30
05-00957	.188 dia. installations (standard Bowden Cable)	\$26.30
05-00958	.250 dia. installations	\$26.30
05-00959	.260 diameter installations (Standard tach cable size)	\$26.30

SE 961 STEEL SERIES

Same as SE961B Series above but ball halves are manufactured from plain steel, plated and hollowed out reducing weight by 30%.

05-00764	.125 Dia. installations	\$29.50
05-00766	.188 Dia. installations	\$29.50
05-00767	.250 Dia. installations	\$29.50
05-00768	.260 Dia. installations	\$29.50

B=Screw Mount

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

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Prices Subject to Change Without Notice

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 cablesP/N 05-16000\$12.70

For .078 dia cablesP/N 05-16001\$12.70

(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\$15.30

P/N AN486-4P\$15.40



AN665-21R TERMINAL - Has 10-32 threads and 3/16" dia. fork hole. Furnished with clevis pin, cotter pin and lock nut.

P/N 05-02500\$11.90



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\$0.42



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.\$0.16

AN742-D4 for 1/4" O.D.\$0.15



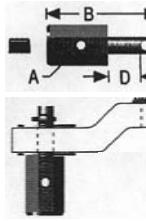
SLOTTED BRACKET CONTROL MOUNT - Notch of end fitting locks into slot of bracket to secure control. Steel Construction.

P/N 10465\$17.90



CLAMP STYLE CONTROL MOUNT - Protruding "fin ger" in clamp holds control in position. Two-piece steel clamp and base.

P/N 10464\$9.70



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	Description	Price
05-16210	.070	.825	.186	.241	Throttle, Wt..26 oz	P/N 05-16210\$7.80/ea.
05-16230	.066	.825	.249	.241	Mixture, Wt..29 oz	P/N 05-16230\$7.80/ea.
05-16240	.070	.645	.249	.093	Cabin Heat, Wt..26 oz	P/N 05-16240\$7.80/ea.
05-16245	.070	.645	.186	.093	Carb Heat	P/N 05-16245\$7.80/ea.

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 light-weight 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\$9.30/ea.

Adapter Bushing for 3/16" Cable Housings ..P/N 05-16251\$2.85/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 housingP/N 05-16252\$16.45/ea.

For 3/8" cable housings....P/N 05-16253\$17.30/ea.



ADAPTOR - For the cable safe to adapt down to 3/16" diameter cable housings.P/N 05-16251\$2.85/ea.



ONE HOLE EYEBALL ASSEMBLY Bulkhead carry through assembly with eyeball swivel, cable & line clasping ability. easy installation with one-hole installation. All aluminum construction.

.125 Dia ..05-00722\$31.10 .250 Dia.05-00724\$31.20

.188 Dia ..05-00723\$31.10 .260 Dia.05-00726\$31.20

AP

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

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, Sterndusters, 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
\$183.95

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
\$141.95

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
\$183.95

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
\$144.95

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
\$183.95

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
\$141.95

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

Dia.	Hole	P/N	Price
1.5"	n/a	05-02493	\$12.40
2.0"	n/a	05-02494	\$12.40
3.0"	n/a	05-02495	\$15.50
3.0"	.250	05-02496	\$15.50
3.0"	.375	05-02497	\$15.50
3.0"	.500	05-02498	\$15.50
3.0"	.625	05-02499	\$15.50
3.0"	.750	05-02501	\$15.50
3.0"	.950	05-02502	\$15.50
3.0"	1.180	05-02503	\$15.50
4.0"	n/a	05-02504	\$26.20
4.0"	1.00	05-02505	\$26.20
4.0"	1.80	05-02506	\$26.20
4.5"	1.50	05-02507	\$44.70
4.5"	2.12	05-02508	\$49.30
6.0"	n/a	05-02509	\$43.10

Grommet Seal 2 Hole Series

Dia.	Hole	P/N	Price
All Rubber Blank 5-1/4"	0-02510	\$42.50	
1-1/2"	2.125	05-02511	\$42.50
2 Hole Blank 5-1/4"	05-02512	\$42.50	
1.4"	n/a	05-02493	\$12.40
3/8"	n/a	05-02494	\$12.40
1/2"	n/a	05-02495	\$15.50
5/8"	.250	05-02496	\$15.50
3/4"	.375	05-02497	\$15.50
1"	.500	05-02498	\$15.50
3.0"	.625	05-02499	\$15.50
3.0"	.750	05-02501	\$15.50
3.0"	.950	05-02502	\$15.50
3.0"	1.180	05-02503	\$15.50
4.0"	n/a	05-02504	\$26.20
4.0"	1.00	05-02505	\$26.20
4.0"	1.80	05-02506	\$26.20
4.5"	1.50	05-02507	\$44.70
4.5"	2.12	05-02508	\$49.30
6.0"	n/a	05-02509	\$43.10
2 Hole Blank 5-1/4"	05-2519	\$42.50	

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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 **\$49.85**
Two Lever Quadrant P/N 05-15910 **\$54.75**
Three Lever Quadrant P/N 05-15915 **\$63.50**
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 **\$49.85**
Two Lever Quadrant P/N 05-15925 **\$54.75**
Three Lever Quadrant P/N 05-15930 **\$63.50**
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 **\$49.85**
Two Lever Quadrant P/N 05-15940 **\$54.75**
Three Lever Quadrant P/N 05-15945 **\$63.50**
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 **\$68.50**

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 **\$49.85**
Two Lever Quadrant P/N 05-02437 **\$54.75**
Three Lever Quadrant P/N 05-02438 **\$63.50**

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 **\$83.50**
Four lever Quadrant w/ Friction P/N 05-02365 **\$95.00**

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 **\$34.90**
Three-Lever Quadrant (pictured) P/N 05-00961 **\$43.45**



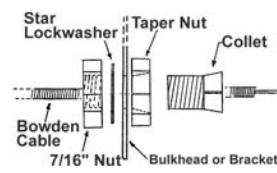
SLIM-LINE QUADRANT

A unique device for use in trim, cowl flap, throttle and mixture control applications where precise positioning and resistance to backdriving are required. Allows fine adjustments, then locks automatically. Doesn't creep. Max. travel: 100° (±50° from position illustrated). Designed to hold 50 inch-lbs. about the pivot. Cadmium plated. Wt. 8 oz. Used in the Adventure.

P/N 05-15900 **\$74.75**

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 **\$1.10/ 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. P/N 05-15705 ..\$12.95/ea.

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 highest quality lock, instructions and all hardware.P/N 05-00649\$346.95

Optional clipboard for clearances or notes makes a stable flight center. Spring-loaded, it snaps out of the way in 2 seconds. StandardP/N 05-00650\$144.95 Deluxe (with Quick Release).....P/N 05-01335\$188.95

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.

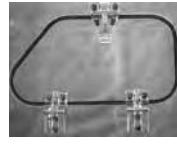
P/N 05-00652\$178.95 Push buttons only, with new screws.....P/N 05-00653\$76.75

WINDOW VENT HINGE & LATCH KIT

For new windows only on Mooney, Piper, Socata, Commander

.....P/N 05-01336\$178.95

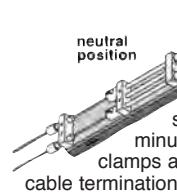
BEECH STORM WINDOW HINGE/LATCH KIT



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\$205.95 Latch & Stiker only.....P/N 05-00655\$102.95 Hinges OnlyP/N 05-00656\$126.95

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\$49.95

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\$166.95ea

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.



Model No.	Description (set of 4)	Part No.	Price
SX-100	Molded Grips w/o built-in PTT switch	05-16600	\$42.95
SX-101	Molded Grips w/ built-in PTT switch(LH)	05-16630	\$69.95
SX-101	Molded Grips w/2 PTT switch (L&R)	05-16635	\$99.50
SX-110	Center Cushions (set of 2)	05-16610	\$42.95

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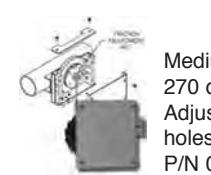
DUAL CARBURETOR SPLITTER

Splits a single throttle input into two outputs for dual carburetor installations. Clamp mounting.P/N 05-01823\$29.95



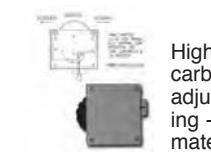
DUAL CARBURETOR SPLITTER WITH OIL INJECTION

Splits a single throttle input into three outputs for dual carburetor installations with oil injection. Clamp mounting.P/N 05-01824\$31.95



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\$49.95



HAND THROTTLE

High torque, 2.5:1 internal gear reduction. For dual carburetors. 82.5 degree rotation for fine throttle adjustment. Adjustable friction drag. Clamp mounting - no holes required. Made from weatherproof materials. P/N 05-01826\$59.95



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\$12.95



CONTROL WHEEL #3

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 and anodized for corrosion resistance. Switch blocks can be added to uprights for push to talk or trim control. Wt: 26 oz. Mounting flange hole sizes: 3/4" or 7/8". Special hole sizes: Add 10.00....Special Order ACS Control WheelP/N 05-00457\$89.95 3/4" Black AnodizedP/N 05-02248\$89.95 3/4" Bare AluminumP/N 05-02279\$89.95 7/8" Black AnodizedP/N 05-02282\$89.95 7/8" Bare AluminumP/N 05-02284\$89.95

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. An adaptor kit is available allowing installation of the control wheels on control columns of various sizes. The kit requires Form 337 approval or can be used on experimental aircraft.

Description	Part No.	Price
Basic Control Wheel	05-00545	\$511.00
Basic Control Wheel install kit	05-00546	\$74.50
Premium leather wrap only*	05-00547	\$486.95
Leather wrapped control wheel install kit	05-00548	\$78.25
Chronometer with custom faceplate	05-00549	\$251.95
Adaptor Kit	05-00549	\$251.95

* Note: Price is for leather wrapping only. Order control wheel separately.

AP

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FUEL TANKS

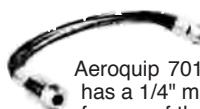


FUEL WARNING SYSTEM

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.

SensorP/N 6905-400 \$28.70
 Warning Light.....P/N 05-17660 \$21.10
 BulbP/N GE-330.....\$0.95

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\$50.50 10".....P/N 05-20510\$48.50
 11"....P/N 05-20511\$48.40 12".....P/N 05-20512\$48.50
 13"....P/N 05-20513\$49.90

Add \$1.80 to 13" price for each additional inch.

AP

PICKUP TUBE ADAPTER

Specially machined AN912 fitting for connecting pickup tube to fuel tank. For 12" tubes & longerP/N 10380\$5.80
 Specially machined AN912-12D for shorter than 12"
 P/N 10380-1 ..\$23.40



FLO 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\$37.90
 3/4" Male Pipe ..P/N 05-20526\$37.90



ALUMINUM WELDING FLANGES

Part No.	Female Pipe Thread	Dia. "D" Inches	Height "H" Inches	Price Each
AN867-1	1/8"	1-1/2	7/16	\$5.95
AN867-2	1/4"	1-3/4	5/8	\$6.70
AN867-3	3/8"	1-7/8	5/8	\$6.85
AN867-4	1/2"	2	3/4	\$7.30
AN867-6	3/4"	2-1/4	13/16	\$11.20
AN867-8	1"	2-11/16"	1"	\$13.50

FINGER STRAINERS



Finger strainers for fuel tank outlets. Brass fitting has 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. P/N 05-17700 ..\$3.40



PITTS
SPECIAL
FUEL
TANK

OPTIONAL TANK INSTALLATIONS

Sight Gauge (Fittings and Tubing) for Pitts or Skybolt Tanks - no installation charge.
 P/N 05-29000 ..\$17.85

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 ..\$2.54

ANTI-CHAFE CHANNEL FOR FUEL TANK STRAPS

Neoprene rubber extrusions to hold 1" wide metal fuel tank straps.
 #9 Channel P/N 05-01800 ..\$1.82 Ft.

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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.

CUSTOM TANKS AVAILABLE: SEND BLUEPRINT OR SKETCH FOR QUOTATION
 ADD \$15.00 BOX CHARGE FOR CRATING TANKS FOR SHIPMENT

RAVEN FUEL TANKS



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 \$220.00

RAVEN WING TANKS

Wink tank used to hold extra fuel or smoke oil in top wing of aerobatic biplanes.



S1-S Wing TankP/N 05-00914 ..\$220.00
 S1-C Wing TankP/N 05-00915 ..\$220.00
 Experimental S2, Eagle Wing Tank P/N 05-00916 ..\$255.00



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\$27.50

ALUMINUM FUEL TANKS

Design	Capacity (Gallons)	Main Tank	Part No.	Tank for Inverted Flight	Part No.	Each Wing Tank	Part No.
Acro-Sport II	24			\$418.95	05-18510		
Cougar	23	\$502.00	05-18600				
Cuby	12.5	\$383.95	05-18700				
EAA Bi-Plane	16	\$310.95	05-18800				
Fly Baby	14	\$384.95	05-18900				
Hatz Bi-Plane	18					\$433.95	05-19020
Mustang I	16	\$349.95	05-19100				
Mustang II	27	\$529.00	05-19200				
Pitts Special	19			\$310.95	05-19310		
Pober Pixie	12	(Send Drwg. 05-19400)				\$518.00	05-19420
Skybolt	29			\$310.95	05-19510	\$268.95	05-19520
Smith Miniplane	16	\$446.95	05-19600				
Starduster I	18	\$383.95	05-19700	\$487.95	05-19710	\$335.95	05-19720
Starduster II	26	\$683.00	05-19800	\$584.00	05-19810	\$446.95	05-19820
Tailwind		\$544.00	05-19950				

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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.



CAV-110H-4 CAV-160H-4 CAV-170H-4 CAV-180H-4
CAV-110 CAV-160 CAV-170 CAV-180

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; Aerocraft; 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	\$8.65	CAV-170	7/16-20 NF	\$10.45
CAV-110H-4	1/8" NPT	\$11.90	CAV-170H-4	7/16-20 NF	\$12.50
CAV-160	1/4" NPT	\$9.15	CAV-180	3/8-24 NF	\$10.40
CAV-160H-4	1/4" NPT	\$11.90	CAV-180H-4	3/8-24 NF	\$12.50

Replacement Seals

	Price Each
MS29513-006 Tip (all models)	\$0.18
MS29513-011 Seat (CAV-180)	\$0.18
MS29513-012 Seat (CAV-170)	\$0.22

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	\$9.50	SA-60S	1/4" NPT	\$23.50
P3750	3/8" NPT	\$10.95	4350-6L	1/2"-20	\$64.50
F75	3/4-16	\$49.50	SA5817-4C	3/4"-16	\$58.65

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	\$21.95
F-391-18	1/8" NPT	Stinson, Waco VK, UPF, Seabee, Bellanca, T-Craft "B", Navion	\$21.95
F-391-32	3/8-24	Cessna 180, 182, 195	\$18.50
F-391-72	7/16-20	Cessna 140, 150, 170, 172, 175	\$20.85
F-391-82	1/2-20	Cessna Cardinal, 210	\$19.50

Sampler Cup - Fits all F-391 Valves P/N 05-17300 \$3.95

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SAF-AIR FLUSH-MOUNTED DRAIN VALVES



SA14 SA18 SA32 SA72 SA82 SA187

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	\$15.45	SA72	7/16-20	F391-72	\$15.10
SA18	1/8 NPT	F391-18	\$15.65	SA82	1/2-20	F391-82	\$14.85
SA32	3/8-24	F391-32	\$14.85	SA187	1/8 NPT	F391-187	\$15.65

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	\$8.30	1250H	1/8 NPT*	\$16.85
2500	1/4 NPT	\$8.90	2500H	1/4 NPT*	\$16.85
3750	3/8-24	\$13.65	3750H	3/8-24*	\$16.85
4375	7/16-20	\$13.65	4375H	7/16-20*	\$16.85



CURTIS DRAIN VALVES

Quick opening brass drain valve for aircraft oil or fuel systems. A slight twist opens valve. No safety wire needed in closed position. **FAA approved**.

Part No.	Thread Size	Price Ea.	Part No.	Valve Size	Price Ea.
CCA-1550	1/8" NPT	\$8.35	CCA-1700	1/2" NPT	\$13.35
CCA-1600	1/4" NPT	\$9.25	CCA-39550	5/8-18 UNF	\$20.70
CCA-1650	3/8" NPT	\$11.25			

CURTIS QUICK DRAIN HOSES - A simple push and twist action locks the CCB-39600 series Quick Drain Hose in place and opens the drain valve. Internal O-ring seals assure a positive drip proof connection, and fuel flows through 5' of high grade vinyl tubing preventing spillage.

Part No.	Quick Drain Hose	Used with Quick Drain Hose	Price
05-00138	CCB-39600-1	CCA-1400, CCA-1700, CCA-39550	\$11.60
05-00139	CCB-39600-2	CCA-1350, CCA-1650, CCA-4950	\$11.60
05-00141	CCB-39600-3	CCA-1300, CCA-1660, CCA-3400, CCA-3600, CCA-4800, CCA-4900, CCA-39000	\$11.60
05-00142	CCB-39600-4	CCA-4350, CCA-7250, CCA-36400, CCB-36650	\$11.60
05-00143	CCB-39600-5	CCA-1250, CCA-1550, CCA-4300, CCA-7450, CCA-9950, CCB-36750	\$11.60

CURTIS QUICK DRAIN SECURITY SYSTEM

These Curtis Quick Drain Valves are designed to accept a locking device that will prevent tampering and the theft of fuel. FAA TXO-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 models numbers below indicates the number of valves and locks included.

Model CCA-39700-2 P/N 05-01239 \$34.70

Model CCA-39700-4 P/N 05-01255 \$63.35

Model CCA-39700-6 P/N 05-01256 \$89.50

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GASCOLATORS - FUEL TESTERS



ACS GASCOLATOR

Homebuilder's Special- All-metal gascolator with S.S. screen, 1-7/8" dia. cadmium plated steel bowl w/quick drain. Top is CNC machined from 7075 Alum. Top casting has 1/4" pipe ports for 3/8" fuel line and one 1/8" pipe port for primer fitting. Wt: 8oz. Not for use with auto fuel.

P/N 10580\$62.75

Replacement Gaskets - Buna-N, 3/32" thick x 2-1/8" O.D. P/N 10536-1\$5.45

Replacement Screens - Stainless Steel P/N 10543-1\$1.50

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. A fine quality item manufactured by ACS Products Co. Fits gascolators sold after May 1, 1989.

P/N 10371\$13.35

FAA-APPROVED GASCOLATORS

CNC-machined out of 6061 aluminum for longer use. Feature anodized "O" ring seals for improved sealing capabilities and a bayonet tab locked bowl system. No more wire bales popping out of the cover or stripped thumb wheels or screws. 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. Available in four styles. 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	\$195.00
SA3-00B	1/4 NPT - 3/8" Line - 3 oz.	05-00892	\$195.00
SA3-10	3/8 NPT - 1/2" Line - 4 oz.	05-00893	\$245.00
SA3-10A	3/8 NPT - 1/2" Line - 4 oz.	05-00894	\$245.00
SA3-07	SA3-00 Side Mt. Bracket	05-01027	\$10.00
SA3-11	SA3-10 Side Mt. Bracket	05-01028	\$10.00
SA3-07/ SA3-06	Cessna 120/140 Install Kit	05-01029	\$15.00

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\$78.95
Replacement ScreenP/N 05-25972\$2.50

FUEL FILTERS

For homebuilts. Used on VariEze, Quickie various gyrocopters. Rated to 10 PSI not recommended for fuel injected systems.
#806 for 3/8" Fuel LinesP/N 806\$7.50
#804 for 1/4" Fuel Lines (Quickie)P/N 804\$9.75

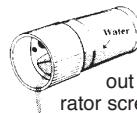
MICRON 10 FUEL FILTER

Length: 4.25" Filter medium: 1.375" dia. 304 pleated SST disk
Diameter: 2.0" Filter Efficiency: 10 Micron
Flow rate: 15.3 gpm Operating Pressure: 8,000 PSIG
Weight: 5 oz. Drop in pressure: 1.0%
Fitting Size: AN6 P/N 05-01699\$119.50

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Prices Subject to Change Without Notice



GATS JAR FUEL SAMPLER

The incredible new 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.

P/N 05-21250\$16.95



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.

P/N 05-00448\$6.80



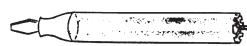
CURTIS FUEL SAMPLER CUP

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\$3.95

Stow-Away Fuel Tester Holder #2 - This holder is designed especially to hold a sampler cup. 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 05-17220\$8.95

FUEL TESTER SCREWDRIVER



Plastic tube for fuel contamination inspection. Boleted end and plastic probe open all types of quick-drain valves. Vial checks fuel octane color. Reversible screwdriver blade on end can be used to open cowlings during preflight inspection.....P/N 05-17200\$5.70

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\$9.95

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" braze) 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\$14.95

ACS FREE FLOW ONE-WAY CHECK VALVE



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 pleated 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\$85.25

Replacement ElementP/N 8504-05\$41.30



FUEL FILTER

In-line, high-capacity, translucent filter with screen. Has standard 1/4" barb inlet and outlet tubes.

P/N FUF01\$2.30



FUEL FILTER

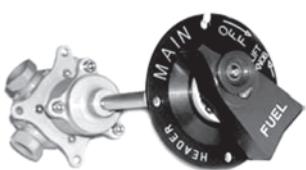
In-tank type. Brass construction with fine-mesh screen. Has standard 1/4" barb inlet and outlet tubes.

P/N FUF02\$2.20

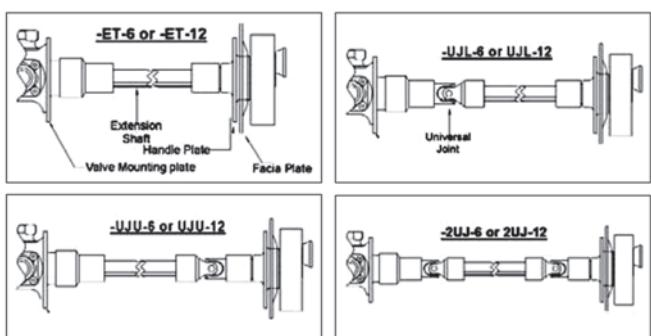
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

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	Option	Size (In.)	Price
ET	6	66.95	ET	12	74.95
UJL	6	108.50	UJL	12	125.00
UJJ	6	108.50	UJJ	12	125.00
2UJ	6	140.65	2UJ	12	160.00

E Valve Part No.
i.e. FS25f5-M or
FD20-20-D2-6M

ET UJL UJJ 2UJ
Length of extension tube:
6 = 6" long.
12 = 12" long.

ET: with one universal joint on lower part of valve
UJL: with one universal joint on the upper section of the valve
UJJ: 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

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 from mild steel.

P/N 05-00907\$22.30



ANDAIR GASCOLATORS

This premium gascolator is machined from solid aluminum and anodized. The PTFE coated 70 micron washable screen provides excellent flow characteristics and minimal pressure drop. Mounting is made using the 9/16 UNF tapped hole in the back or the two 1/4 UNF on the top of the gascolator. The gascolator comes in 3 versions: with male, with female, or with banjo fitting which has a male -6 end connector and can be rotated through 360° and then locked in the desired position. The GAS500 gascolators are designed for 1/2" fuel lines and flow rates up to 70 GPH. Both sides can be used on the pressure side of the fuel system with absolute minimal pressure drop. Shown fitted with an Andair Super Stainless zero rot Drain valve (not included).

GAS375M w/9/16-18" male fittings	P/N 05-29551	\$153.95
GAS375F w/ 1/4" NPT female fittings ..	P/N 05-29552	\$153.95
GAS375B w/ banjo fittings	P/N 05-29553	\$199.95
GAS500F - 3/8" NPT female fittings ..	P/N 05-00129	\$280.95
GAS500M - 3/4-16" male flare fittings ..	P/N 05-00136	\$279.95
Replacement o-ring for GAS375	P/N 05-00704	\$6.00
Replacement o-ring for GAS500	P/N 05-00706	\$6.40
Replacement screen for GAS375	P/N 05-00707	\$33.85
Replacement screen for GAS500	P/N 05-00708	\$56.25
Stainless Steel Drain Valve	P/N 05-00709	\$25.90

AP

ANDAIR MINI GASCOLATOR

Andair has developed this tough and compact gascolator with some great features. They are suitable for engines up to 140 HP and act as a trap to catch water. A unique method of attaching the bowl to the body allows for real easy maintenance. By pulling out the locking safety pin then rotating the bowl through 35°, bowl can be pulled off and the internals inspected. It literally takes 30 seconds!

Features include: 1/4" NPT inlet & outlet ports, 1/8" NPT bowl drain and pressure tapping, vent allows all air to escape, O-ring seals allow to be used on pressurized fuel systems, impervious to any known fuel and mounting by way of 3-1/4" UNF to rear of gascolator.

GAS125 (mini)	P/N 05-29554	\$128.95
Replacement o-ring kit	P/N 05-00711	\$6.95
Replacement Screen	P/N 05-00712	\$20.90



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.

Model No.	Bleed	End Fittings	Part No.	Price Ea.
CK250	No	7/16-20	05-00713	\$53.95
CK250-B	Yes	7/16-20	05-00714	\$49.90
CK375	No	9/16-18	05-00716	\$49.90
CK375-B	Yes	9/16-18	05-29555	\$49.90
CK250-H	No	1/4" hose	05-00717	\$53.95
CK250-H-B	Yes	1/4" hose	05-00718	\$53.95
CK375-H	No	3/8" hose	05-00719	\$49.90
CK375-H-B	Yes	3/8" hose	05-00721	\$53.95

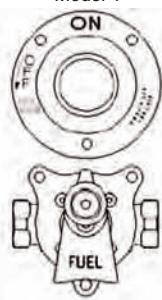
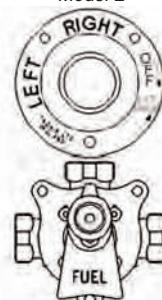
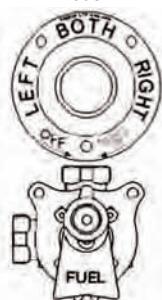
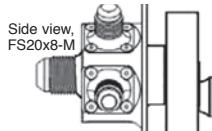
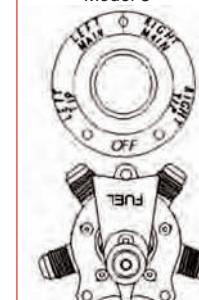
FUEL VALVES - DUPLEX VALVES

ANDAIR POSITIVE STOP FUEL VALVES

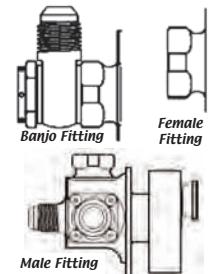


Andair Ltd. of England produce these superb Safety Fuel Selectors. Precision built from aircraft grade materials, with PTFE seals packed against a highly polished ball giving a very smooth action. Designed by an RV builder the Andair valve features a positive stop for the off position. A spring loaded 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.

AP

FS20X1-F or
FS25x1-F
Model 1FS20X2-F or
FS25x2-F
Model 2FS20X3-F or
FS25x3-F
Model 3FS20X4-F or
FS25x4-F
Model 4FS20X5-F or
FS25x5-F
Model 5NEW 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)



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.

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 Surburu, Continental, Rotax, and Diesel engines. The FS20-20-D2 has one 1/2" feed section and on 3/8" return section. The valves can be supplied with either male or female fittings.

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.

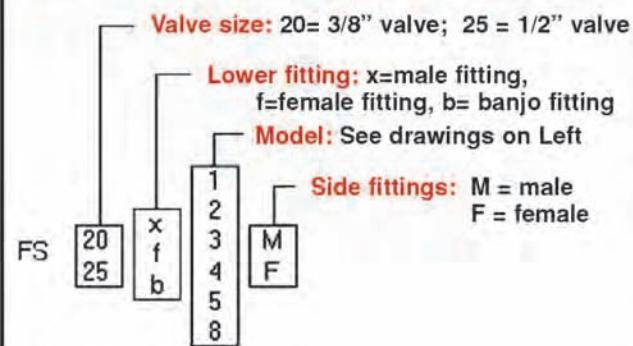
Model No.	Part No.	Description	Thread	Ports	Price
FS20-20-D2-6F	05-29560	3/8" Feed & Return	1/4" Pipe	Female	\$486.95
FS20-20-D2-6M	05-29561	3/8" Feed & Return	9/16-18	Male	\$486.95
FS20-25-D2-6F	05-29562	1/2" Feed, 3/8"Return	1/4,3/8"pipe	Female	\$577.00
FS20-25-D2-6M	05-29563	1/2" Feed, 3/8"Return	9/16-18, 3/4-16	Male	\$577.00

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 our 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	\$247.95
FS22-D2-6M-PS	05-29566	3/8"Feed, 1/8"Return	9/16-18	Male	\$247.95
FS22-D2-6F-PD	05-29567	3/8"Feed, 1/8"Return	1/4,1/8"Pipe	Female	\$247.95
FS22-D2-6M-PD	05-29568	3/8"Feed, 1/8"Return	9/16-18	Male	\$247.95

PLEASE ORDER USING THE FOLLOWING PART NUMBERS:



FS20 - 3/8"

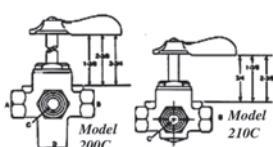
Lower Fittings	Model	Side Fitting	Price Ea.	Lower Fittings	Model	Side Fitting	Price Ea.
--	1, 2		\$180.00	--	1, 2		\$220.00
Male or Female	3, 4, 5 8	Male or Female	\$185.00 \$240.00	Male or Female	3, 4, 5 8	Male or Female	\$225.00 \$450.00
Banjo	3, 4, 5 8	Female	\$225.00 \$285.00	Banjo	3, 4, 5 8	Female	\$275.00 \$499.00

FS25 - 1/2"

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

FUEL VALVES - FUEL SUPPLIES



HOMEOWNER 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.	Imperial Equiv.	Valve Type	Pipe Thread	Price Each
210-CN	108HD-06	3-Port*	3/8" Female x 3/8" Female	\$24.90
200-CL	114-HD-04	4-Port**	1/4" Female x 1/4" Female	\$22.80
200-CN	114HD-06	4-Port**	3/8" Female x 3/8" Female	\$24.40

*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.



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 \$22.30
3/8" valve P/N 05-23330 \$23.65
1/2" valve P/N 05-01026 \$24.85

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 \$23.40

Model No. 6747 4-Port Valve - Flow is from any horizontal port to bottom port.P/N 6747 \$22.80

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 ANPT	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	\$153.95	\$555.00	\$439.95



HANDLE FOR ALLEN FUEL VALVES

This aluminum handle is specially machined to fit the Allen fuel valves above.

.....P/N 05-01915\$32.85



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\$94.50



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 ..\$114.95



RUBBER BUSHING

Required for installation of Fuel Flow Elbow described above. P/N FTB01\$0.99

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE



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 FFV01\$14.80



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 FFV02\$11.85



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 FFV03\$11.40



FUEL FLOW VALVE

Panel mounted fuel on-off. P/N FFV04\$7.70

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.....\$54.90



FUEL FLOW ELBOW

Bushed 90° tank fitting with standard 1/4" barb outlet. Requires Rubber Bushing FTB01.

P/N FTEB01\$1.50



PRIMER BULB

Install between fuel tank and engine. A few squeezes prime your engine for easy starting. Has 3/8" fittings.

P/N PB001\$5.95



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 PK001\$25.85



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.....\$84.75



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 K2404-1/8\$158.95

DISCOUNT: 10% ON 6, 15% ON 12, 20% ON 25



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.

12V ValveP/N 05-29823\$56.50

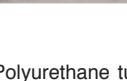
24V ValveP/N 05-29825\$65.50



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.)

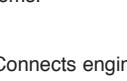
P/N FU1887\$1.24/ft.



PRIMER LINE

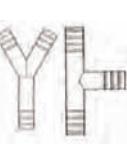
Polyurethane tubing, translucent pink in color. 1/8" ID. For primer systems.

P/N FU8000\$0.45/ft.



PULSE LINE

Connects engine pulse outlet to fuel pump pulse inlet. PLN01 ..\$1.27/ft.



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 FU8338\$0.75

"Y" type, 1/4"P/N FU8345\$1.24

"T" type, 1/8"P/N PK001.1 .. \$1.95

AP

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.....	\$49.50
Cessna 170 - 37 Gals.P/N 05-00899.....	\$49.50
Cessna 172 - 36 Gals.P/N 05-00901.....	\$49.50
Cessna 180 - 55 Gals.P/N 05-00902.....	\$49.50
Cessna 180 - 60 Gals.P/N 05-00903.....	\$49.50
Cessna 180 - 79 Gals.P/N 05-00904.....	\$49.50
Cessna 172 - 84 Gals.P/N 05-00905.....	\$49.50
Cessna 182 - 55 Gals.P/N 05-00906.....	\$49.50

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, fluorosilicone fluid based grease with a temp. range of -20 to 450°F. 22 oz. tube. P/N 09-00333\$38.40

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. Dirt & water in fuel tanks can cause microbial growth, corrosive acids, electrolysis, and rust. The contaminants can restrict fuel flow, plug filters, corrode fittings, decrease the energy potential of the fuel, and cause engine damage and system failure. 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. These filters are superior to all previous Mr. Funnel models and 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, which allows for use with all equipment in all situations. And, this new F-15 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 when you are done refueling.

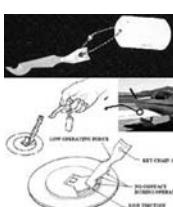
Part No.	Height	Diameter	Flow Rate	Price
F1C	6.00"	3.5"	2.5 gpm	\$15.00
F3C	8.75"	5.5"	3.5 gpm	\$17.80
F8C	10.00"	8.5"	5.0 gpm	\$25.85
05-01371	10.00"	8.5"	12-15 gpm	\$64.25

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, ATVs, snowmobiles, 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 ..\$5.90
Model# 415 - RedP/N 12-00375 ..\$6.95
Model#428 - BlackP/N 12-00376 ..\$7.80



AIRCRAFT FUEL CAP OPENER

• A LONG TERM PROBLEM: Using screwdrivers, fingernail files, knife blades, etc. consistently damages fuel caps as well as adjacent painted wing surface during refueling operations.

• A SOLUTION: A specially designed cap opener that essentially eliminates cap opening force while also eliminating cap and wing surface damage. • A blue fuel cap opener made from injection molded Dupont® Delrin plastic resin 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. • Use extra tab space for telephone number/Email etc. P/N 05-01834\$9.85

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

Prices Subject to Change Without Notice

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	\$48.00
Complete Set (vented)	P/N 10610	\$49.95
Replacement "O"Ring	P/N 10609	\$3.95

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	\$39.95
New Style Cap Only	P/N 05-01391	\$34.30
Replacement VitonO-Ring (for New-Style Cap Only) ..	P/N 05-01392	..\$7.70

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 | **\$39.40** |

UD-3 with Contoured Adapter P/N UD-3-C | **\$39.00** |

Usher O-Ring 2-325 Large P/N 05-02146 | **\$2.50** |

Usher O-Ring 2-012 Small P/N 05-02147 | **\$1.25** |

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
05-18400	2"	1-3/16"	\$41.20
05-18402	2-1/2"	1-3/16"	\$43.00

Other sizes available by special order. 10 week lead.

Aluminum weldable adapter neck for use with 2" cap illustrated.

3" Length P/N 10367-3 | **\$19.85** |

6" Length P/N 10367-6 | **\$23.50** |

GAS TANK CAP GASKETS

Part No.	Description	Size	Price Ea.
05-18500	Piper	3" OD, 2" ID	\$5.95
05-18505	Cessna	2-1/4" OD, 1-3/8" ID	\$5.95

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 QD001 | **\$16.80** |

In-line without shut-off P/N QD002 | **\$11.90** |

Panel mount with shut-off P/N QD003 | **\$24.25** |

Panel mount without shut-off .. P/N QD004 | **\$18.75** |

FUEL CAPS

AERO FUEL CAPS - ALUMINUM



A37

These English fuel caps are used on most of the worlds 'super cars' and bikes, and some series production 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 CAP, Cirrus, Diamond, Lancair Columbia, Lancair kits, Nemesis, Vans, Velocity and many more aircraft.



A36

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.



A30-G/S



A512

A512 CAPS – 3" entry/5.5" OD. Feature special surface seal to avoid water/ice ingress. For Avtur Jet and diesel fuels. Glas-in also avail.

LIGHTWEIGHT DOOR LOCK SETS – match above fuel cap locks.
P/N 05-28664\$11.95 ea.

Caps for Fuselage and Wing Tanks		
Description	P/N	Price ea.
A30S-G/S Non-Locking, Threaded	05-28705	\$123.95
A30L-G/S Locking, Threaded	05-28700	\$136.95
2.25" Bushing, Weldable	M142	\$10.30

300 & 500 Series Caps		
Description	P/N	Price ea.
A36L Locking Cap Assy. 6-hole	05-28651	\$122.95
A36LFF Locking Cap Assy. Glass in	05-28652	\$126.95
A37L Locking Cap+ Hose Fitting 6 hole	05-28653	\$157.95
A37LFF Locking Cap Flush Glass in	05-28654	\$152.95
A36S Non-Locking Assy. 6-hole	05-28656	\$107.95
A36SFF Non-Locking Flush Glass in	05-28658	\$106.95
A37S Non-Locking+ Hose Fitting 6-hole	05-28659	\$135.95
A37SFF Non-Locking Flush Glass in + Hose Fitting	05-28657	\$134.95
R36 Attach Ring + Screws	05-28661	\$30.30
A512L 3" Cap, Locking	05-00045	\$176.95

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 CapP/N 05-17800\$35.69
Complete Set with Vented CapP/N 05-17900\$37.86
Aluminum Tank FlangeP/N M142\$10.30
Cap Only (unvented)P/N FC2646\$8.80
Cap Only (vented)P/N FC3487-2\$11.50
Gasket for above CapsP/N FC2651\$1.50
Filler NeckP/N FC2544\$15.90

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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.P/N 05-01004

\$118.95



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\$59.95



Vans Retrofit Aero 20L Cap key action cap assembly fits inside existing Vans flange. Easy action and secure seal. Epoxy/Flox in place. 1-3/8" orifice. Use this cap if your existing flange has dents or dings.

P/N 05-01006\$85.50

AP

LIGHTWEIGHT SPRL FUEL CAPS



SPRL-S-GS



SPRL-S

This cap has secure sealing and easy finger tip 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-SP/N 05-28662\$56.25

Locking cap W/ Flush Flange SPRL-LP/N 05-28663\$69.50

Cap with Threaded Flange SPRL-GP/N 05-28666\$59.95

Locking cap with Threaded FlangeP/N 05-28667\$89.75

Backnut to secure threaded flanges to skin (for 2.25" hose)

P/N 05-00042\$10.30

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'yP/N 416-51AB\$214.50

2" Unvented Cap & Flat Adapter Ass'yP/N 428-1\$241.10

3" Unvented Cap OnlyP/N 416-50\$186.75

2" Unvented Cap OnlyP/N 428-2\$159.95

2" Flat Adapter Ring OnlyP/N 428-3\$59.75

Chain AssemblyP/N 417-20-6\$21.40

O-Ring for 3" CapP/N MS29513-232 ..\$0.85

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

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	\$68.75
Quart.....	P/N 09-00324	\$131.95



PRIST HI-FLO FUEL-ADDITIVE

Prist Hi-Flo Fuel Additive is the standard of quality in anti-icer and microbiocidal aviation fuel additives. Prist Hi-Flo meets the military specifications for fuel additives used by the U.S. Air Force turbine fleet on a mandatory basis for over 20 years in billions of gallons of fuel. It is authorized by the FAA and engine & airframe manufacturers. Prist Hi-Flo is formulated for use with aircraft refueling rates of 30 to 60 gal/min. 20-oz. aerosol cans are packaged 6 to the box.

20 oz. canP/N 09-39555.....\$8.65

ALCOR TCP CONCENTRATE

GET THE LEAD OUT! STOP FOULING!



Acclaimed by both Continental and Lycoming as the most effective lead scavenger. TCP reduces plug failures as the lead deposits formed are softer and less tenacious so are more readily blown out of the combustion chamber during the exhaust stroke. 1 cent treats a gallon of LL100.

The Adaptor
Sold Separately.

Quart	P/N 05-21300	\$22.35
7oz TCP Dispenser Kit Only	P/N 05-21500	\$13.50
TCP Funnel Adapter.....	P/N 05-01832.....	\$4.05

DECALIN 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 TCP is not approved for use in the engines of certified aircraft.

Decalin TCP Fuel Additive 16OZ.....P/N 05-01406

Decalin TCP Fuel Additive Quart.....P/N 05-01413

\$19.95 \$22.35

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.....\$9.95

AIRCRAFT SPRUCE WEST
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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 temperature 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.

3 Gallon KitP/N 09-42226\$327.95

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\$22.70

Kit B (6 Oz.) cartridge

3-1/2 oz. sealant.....P/N 09-38510\$18.10

*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 GunP/N 09-38520\$81.25/ea.

6 oz. Dispensing GunP/N 09-38530\$94.75/ea.

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\$235.28

6 Oz. Gun Kit (Gun & Cartridge)P/N 09-38550\$296.20

2-1/2 Oz. Gun OnlyP/N 09-38542\$233.95

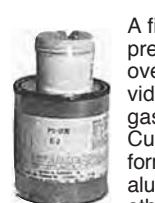
6 Oz. Gun OnlyP/N 09-38552\$294.95

2-1/2 Oz. Cartridge OnlyP/N 09-38544\$1.52

6 Oz. Cartridge OnlyP/N 09-38555\$1.25

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\$51.25

Quart.....P/N 09-38565\$79.90

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

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	\$12.70
32 oz. Bottle	P/N 09-00364	\$30.70
4 Liter can	P/N 09-44345	\$99.00
20 Liter Pail	P/N 09-00437	\$505.00

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	\$14.35
16 oz. Trigger spray (can be shipped anywhere non-hazardous, unrestricted)	P/N 09-00296	\$14.35
1 gal./3.8 ltr.	P/N 09-44225	\$84.15



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. Designed for aviation, marine and industrial applications. Furnished with instructional video. Available in 3 sizes.

BELT PACK - Req. Air Pressure: 80 PSI @ 3-4 CFM • Capacity: 1 qt.
 • Wt: 7 lbs. • Hose: 3'. **Basic Unit Includes:** Pistol belt and holster, 1" cricket, 5" x 1/8" hook wands and 3' superflex.
 Basic Unit (3 wands)P/N 09-00375\$249.95
 Complete Unit (6 wands)P/N 09-00376\$349.95

2.5 GALLON TOTE - Req. Air Pressure: 80 PSI @ 3-4 CFM • Capacity: 2.5 gals. • Wt: 22 lbs. • Hose: 10' • Color: Blue. **Basic Unit Includes:** 1" cricket, 3" x 1/4" 360° wands and 3' superflex.
 Basic Unit (3 wands)P/N 09-00373\$445.00
 Complete Unit (6 wands)P/N 09-00374\$549.00

5 GALLON TOTE - Req. Air Pressure: 80 PSI @ 3-4 CFM • Capacity: 5 gals. • Wt: 28 lbs. • Hose: 25' • Color: Blue. **Basic Unit Includes:** 1" cricket, 3" x 1/4" 360° wands and 3' superflex.
 Basic Unit (3 wands)P/N 09-00371\$549.00
 Complete Unit (6 wands)P/N 09-00372\$649.00



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 \$6.95/ea.



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	\$9.95
Gal.	P/N 09-26900	\$36.40



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 7690	\$11.85
4 oz Drip Can.....	P/N 09-00378.....	\$6.90
4 oz Spray Can	P/N 09-00379	\$6.90
Gallon Can.....	P/N 7690-1G	\$74.25

AP



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	\$16.25
Pt.	P/N 03-14005	\$9.00

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. TubeP/N 09-27700\$14.40

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. tubeP/N 09-00383\$87.25



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. TubeP/N 09-27800\$6.30
 #732 RTV (White), 4.7 Oz. TubeP/N 09-27810\$5.95
 #732 RTV (Black), 4.7 Oz. TubeP/N 09-27815\$6.20
 #736 Red Silicone, 3 Oz. TubeP/N 09-27900\$8.95



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	\$5.95
#PC-220, Pint.....	P/N 09-28100	\$8.95
#PC-320, Qt.	P/N 09-28200	\$15.80

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.

AP

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\$8,265.00

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"		

200C Series Benefits

- | | |
|-----------------------------|---------------------------------|
| * Faster Acceleration | * Faster top speed |
| * Better climb | * More braking effect |
| * More vertical performance | * Lower polar moment of inertia |

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 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\$10,995.00

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"		

400C Series Benefits

- | | |
|-----------------------------|---------------------------------|
| * Faster Acceleration | * Faster top speed |
| * Better climb | * More braking effect |
| * More vertical performance | * Lower polar moment of inertia |

JIHOSTROJ HYDRAULIC GOVENORS

Jihostroj Model	Engine Application	Part No.	Price
P-910	Rotax 912 & 914; Oil Pressure to increase pitch	05-00571	\$1,225.00
P-920	Lycoming O-320, IO-360, IO-540 - Standard; Oil Pressure to increase pitch	05-00572	\$1,225.00
P-940	Lycoming O-320, IO-360, IO-540 - Aerobatic; Oil Pressure to decrease pitch	05-00573	\$1,225.00



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.....\$26.95



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.

2 Blade KitP/N 05-05330.....\$47.60
3 Blade KitP/N 05-05335.....\$54.75

ADVANCED COMPOSITE AC-1 SPINNER DOME

This 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 standard AC-1 aluminum bulkheads and fairing. Note that a rear (small) bulkhead is rarely used and not necessary if the spinner is tracking well.

P/N 01-28000.....\$185.00



PROP PROTRACTOR

Perfect for precision setting of all ground-adjustable props, as well as precision alignment of control surfaces.

P/N PR001\$34.95

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.

MODEL B



General use propeller although specifically designed to run 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".

MODEL C



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".

MODEL E



This is our smallest propeller - designed for 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.

MODEL F



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 locknuts 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

B-Model	\$140	
C-Model	\$140	
E-Model	\$140	
F-Model	\$165	

**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	\$175
Special Three Blade Apex	E-Model Blades Only	\$200
Standard Two Blade Apex	B, C, & F Model Blades	\$200
Standard Three Blade Apex	B, C, & F Model Blades	\$200
Standard Four Blade Apex	B, C, & F Model Blades	\$200
Standard Five Blade Apex	B, C, & F Model Blades	\$200
Rotax 912 Three Blade Apex	B, C, & F Model Blades	\$200
Rotax 912 Four Blade Apex	B, C, & F Model Blades	\$200
Rotax 912 Five Blade Apex	B, C, & F Model Blades	\$200

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.

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

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Prices Subject to Change Without Notice



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.	\$1200.00
Three Blade	Up to 90" dia.	\$1500.00
Four Blade	Up to 90" dia.	\$1750.00

Homebuilt Props by Props Inc. Homebuilt props come with urethane leading edge protection and fiberglass 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.	\$370.00
Gyrocopter, Airboats Mac, VW, Suburu	48" - 56" dia.	\$370.00
C-90, O-200, O-235 O-320, O-290, O-360	58" - 60" dia. 60" - 72" dia.	\$995.00

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.

AP

ULTRALIGHT PROPELLERS BY PROPS INC.

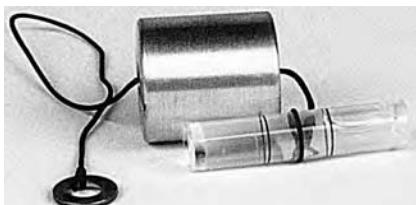


These high quality ultralight propellers are available in both birch and mahogany. The birch props are as split-resistant as mahogany but mahogany props with glass coating are 1/3 lighter than the birch. Mahogany props come with a glass coating - it is optional on birch props. Add \$50.00 for leading 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. Add \$18.00 for packing and shipping. Order by part number using 05-309-for Birch and 05-312--for Mahogany. Complete P/N with diameter of prop. Example:65" mahogany prop is P/N 05-31265. Then specify pitch.

Diameter (Specify)	Pitch (Specify)	Price for Plain Prop
36 thru 40	Any (to 36")	\$173.00
41 thru 48	Any (to 46")	\$220.00
49 thru 54	Any (to 46")	\$240.00
55 thru 60	Any (to 46")	\$270.00
61 thru 66	Any (to 46")	\$295.00
67 thru 72	Any (to 46")	\$295.00

Request quotation on prop pitch over 46"

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\$22.20

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

PROPELLERS

PRINCE AIRCRAFT COMPANY P-TIP PROPS



Prince P-tip props are the only wood / composite 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. At takeoff and climbing condition the propeller has 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 providing shorter takeoffs and higher rates of climb. As the propeller increases in forward speed the disk pressure is reduced, forcing the propeller to increase pitch and top speed. This change in pitch is approximately 4° from takeoff to cruise. The droop P-TIP delays the vortices. The propeller then has smooth air to provide better 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. 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.

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 your application.

COMPOSITE P-TIP PROPS

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.

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
Cozy	0-320	150	68/72	3.7	F
	0-320	160	68/74	3.7	F
	0-360	180	68/76	3.7	F
Dragonfly	1834VW	60	52/45	2.75	D
	2100VW	82	52/48	2.75	D
Glasair	0-320	150	68/72	3.7	F
	0-320	160	68/74	3.7	F
	0-360	180	68/76	3.7	F
	0-540	270	69/113	3.7	F
Glass Goose	0-320	150	64/62	3.7	E
	0-320	160	64/64	3.7	E
Kitfox	Rotax 503	46	68/30	2.1	B
	Rotax 912	80	68/47	2.25	B
KR-2	1835 VW	55	52/48	2.75	D
	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 HORSEPOWER PROPS (Ultralight Type)

Schedule	P-Tip	Composite
A....Up to 54"	\$8.00\$12.20
B55"-110"	\$8.50\$12.75

HIGH HORSEPOWER PROPS

Schedule	P-Tip	Composite
CUp to 45"	\$12.50\$18.65
D46"-55"	\$13.00\$19.20
E.....56"-65"	\$15.50\$23.10
F.....66"-110"	\$16.40\$24.40

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

Prices Subject to Change Without Notice

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 dowelled 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.I0-360-A2B,A2D	BFA7762+			\$3,868.00
Bellanca 7ECA	Cont. 0-200A	ACM6948+			3,626.00
Bellanca 7ECA	Lyc. 0-235-C2C	CLM7246+			3,454.00
Bellanca 7GCA	Lyc. 0-320-A2B	GM7452	CLM7250	GM7455	3,193.00
Cessna 120,140	Cont. C-85	CM7148	CM7150	CM7146	2,761.00
Cessna 120,140	Cont. C-90	CM7152	CM7154		2,761.00
Cessna 150A-F	Cont. 0-200A	MCM6950			3,082.00
Cessna 150G-K	Cont. 0-200A	DCM6948	DCM6950		3,077.00
Cessna 150L	Cont. 0-200A	OCM6948+			3,369.00
Cessna 170A,B	Cont. C-145	MDM7655	MDM 7656	MDM7653	3,490.00
Cessna 172	Cont. 0-300A,B	MDM 7653	MDM7655	MDM7652	3,490.00
Cessna 172A-H	Cont. 0-300,C,D	EM 7653	EM7655	EM7652	2,963.00
Cessna 172I,K,L	Lyc. 0-320E2D	DTM7553+			2,770.00
Cessna 175	Cont. G0-300A,C	MFC8467			4,057.00
Cessna 175A,B	Cont. G0-300C,D	MFC8467	TM7653+		4,057.00
Cessna 177	Lyc. 0-320-E2D	EFA7656+			3,589.00
Cessna 177A	Lyc. 0-360-A2F				3,853.00
Great Lakes	0-320-E2A	EGM 7654			3,233.00
Luscombe 8A	Cont. A-75	CM7447	CM7449		2,761.00
Piper J3 Cub	Cont. C-85	CM7144	CM7146		2,761.00
Piper PA-18,18A	Lyc 0-290-D2	GM8241'			2,855.00
Piper PA-32	Lyc.0-540-F4B5	PFA8266+			3,603.00

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 McCauley propellers or Black Mac Conversions.



Rapco Part No.	Block No.	Our Part No.	Price
RAB40012	C-40010	05-01326	\$56.50
RAB40189	C-40179	05-01327	\$76.35
RAB40046	C-40055	05-01328	\$136.85
RAB40193	C-40187	05-01329	\$89.95
RAC402564	C-40257	05-01330	\$56.50
RAC402562	C-40257	05-01331	\$56.50
RAC40371-1	C-40363	05-01332	\$56.50
RAC40371-2	C-40363	05-01333	\$56.50
RAB40332	C-40331	05-01334	\$56.50

HOW TO DETERMINE COST

1. Select style and price, P-TIP or Composite P-TIP propeller.
2. 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
3. Add Leading Edge Protectors, if required.

MULTI-BLADE PROPS

Three-Blade2 Blade rate x 3 Four-Blade2 Blade rate x 4

LEADING EDGE PROTECTOR

Up to 48" diameter\$61.00 49" - 110"\$83.00

SENENICH PROPELLERS

SENENICH METAL PROPS



Most popular models of Senenich 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			\$2,215.00
Beech Model 23	Lyc. O-320 (160 hp)	74DM6-0-60	74DM6-0-56		\$2,215.00
Bellanca 7EC, 7FC, 7JC	Cont. C-90	76AK-2-46	76AK-2-44	76AK-2-48	\$2,215.00
Cessna 120, 140	Cont. C-85	76AK-2-44	76AK-2-42		\$2,215.00
Cessna 150 thru 150K	Cont. O-200	69CK-0-52			\$2,100.00
Cessna 152	Lyc. O-235 (110 hp)	72CKS6-0-56	72CKS6-0-54		\$2,075.00
Cessna 172 thru 172C	Cont. O-300C, D	74DC-0-56			\$2,299.00
Cessna 170	Lyc. O-360 (180hp)	76EM8S5-0-56	76EM8S5-0-54		\$2,255.00
Cessna 172 Avcon Conv.	Lyc. O-360 (180hp)	76EM8S5-0-56			\$2,255.00
Cessna 172, 172A	Lyc. O-360 (180hp)	76EM8 series			\$2,215.00
Cessna 177	Lyc. O-360 (180hp)	76EM8 series			\$2,215.00
Piper J3C65, L4, Cub	Cont. A-65	74CK-0-46	74CK-0-44		\$2,215.00
Piper PA-11, Cub, J4A	Cont. A-65	74CK-0-46			\$2,215.00
Piper PA-11, PA-18, Cub	Cont. C-90	76AK-2-42			\$2,215.00
Piper PA-18 Super Cub	Lyc. O-235-C1	76AM6-2-44			\$2,215.00
Piper PA-18 Super Cub	Lyc. O-320 (150 hp)	74DM6-0-56	74DM6-0-54	74DM6-0-58	\$2,215.00
Piper PA-20 Pacer	Lyc. O-235-C1	76AM6-2-50	76AM6-2-48	76AM6-2-52	\$2,215.00
Piper PA-22-108 Colt	Lyc. O-235-C1B	76AM6-2-48		76AM6-2-50	\$2,215.00
Piper PA-20, PA-22	Lyc. O-290-D (125 hp)	74DM6-0-56	74DM6-0-54		\$2,215.00
Piper PA-22	Lyc. O-320 (150 hp)	74DM6-0-60	74DM6-0-58		\$2,215.00
Piper PA-28-140 Cherokee	Lyc. O-320 (150 hp)	74DM6-0-60	74DM6-0-58		\$2,215.00
Piper PA-38 Tomahawk	Lyc. O-235 (112 hp)	72CK-0-56			\$1,995.00
Piper PA-28 140, 4 Cherokee	Lyc. O-320 (150hp)	74DM6-0-58	74DM6-0-56		\$2,215.00
Piper PA-28 150 Cherokee B	Lyc. O-320 (150hp)	74DM6-0-58	74DM6-0-56		\$2,215.00
Piper PA-28 151 Warrior	Lyc. O-320 (150hp)	74DM6-0-58			\$2,215.00
Piper PA-28 151 Warrior/160	Lyc. O-320 (160hp)	74DM6-0-60			\$2,215.00
Piper PA-28 160 Cherokee B	Lyc. O-320 (160hp)	74DM6-0-60			\$2,215.00
Piper PA-28 180 Archer	Lyc. O-320 (180hp)	76EM8S5-0-60			\$2,255.00
Piper PA-28 180 Cherokee C	Lyc. O-320 (180hp)	76EM8S5-0-60			\$2,255.00
Piper 181 Archer II (78)	Lyc. O-320 (180hp)	76EM8S5-0-62			\$2,255.00
Pitts Special S1S and S2	Lyc. I0-360	76EM8-0-56 to -61			\$2,215.00
Taylorcraft BC65, BCD12D	Cont. A-65	74CK-0-48	74CK-0-46		\$2,215.00
Taylorcraft BC12D85, 485, 19	Cont. C-85	74CK-2-46	74CK-0-44		\$2,215.00
Stoddard Hamilton Glasair ITD, FT,RG	Lyc 0-320/160hp				
Stoddard Hamilton Glasair IITD, FT,RG	Lyc 0-320/160hp				
Stoddard Hamilton Glasair IIITD, FT,RG	Lyc 0-320/160hp				
Tri-R (KIS)/116	Lyc 0-235-L2C				
Van's RV-3/150, RV-4/150	Lyc 0-320/150hp				
Van's RV-3/160, RV-4/160	Lyc 0-320/160hp				
Van's RV-6/RV-6A150	Lyc 0-320/150hp				
Van's RV-6/RV-6A160	Lyc 0-320/160hp				
Zenith CH-2000/116	Lyc 0-235 (116hp)	72CK-0-46		72CK-0-48	\$1,995.00
Zenith CH-2000A/150	Lyc. 0-320 (150hp)	74DM6S5-0-58			\$2,275.00

*All models listed are land planes.

SENENICH FLIGHT PERFORMANCE ALUMINUM PROPS FOR VANS AIRCRAFT

For the Lycoming 0-235 (125 HP): 72 CK Series Propeller
 For the Lycoming 0-320 (150 or 160 HP): 70 CM Series Propeller
 For the Lycoming 0-360 (180 HP): 72 FM Series Propeller

72 CK Series PropellerP/N 05-01468\$2,468.00
 70 CM Series PropellerP/N 05-01469\$2,534.00
 72 FM Series PropellerP/N 05-01470\$2,359.00

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.

SENENICH ALUMINUM PROP BOLT KITS

These propeller bolt kits for Senenich 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	\$198.95	76AK	AN6H-32AS	\$232.95
72CK	AN6H-37AS	\$198.95	76AM6	AN6H-33AS	\$255.95
74CK	AN6H-32AS	\$232.95	76EM8	AN8H-46AS	\$300.95

PROPELLER BUSHINGS



SENENICH 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\$39.90

McCAULEY A-1170 5/8" O.D. x 3/8" I.D. x 11/16" Long.
 Set of 6.....P/N 05-01170\$98.00

SENENICH PROPELLER FOR CESSNA 172'S

This propeller is STC's for Cessna 172's I thru P using Lycoming 0-320 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)Our Price \$2,240.00

AP

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	Stnd. Prop	Climb Prop	Price
Aeronca 7AC, 11AC, 11ACS	Cont. A65	W72CK-42	W72CK-40	1,126.00
Cessna 120, 140	Cont. C85	W74FK-45	W74FK-44	1,400.00
Commonwealth 185	Cont. C85	W74FK-44		1,400.00
Luscombe 8A	Cont. A65/C65	W76CK-42	W76CK-40	1,498.00
Piper J-3, J-4A, PA-11, PA-17	Cont. A65/C65	W72CK-42	W72CK-40	1,126.00
Piper J-3 (Duster)	Cont. A75	W70DK-40		1,267.00
Piper J-4E	Cont. A75	W70DK-42		1,267.00
Piper J-4F, PA-15	Lyc. O-145B	W70LY-36		1,350.00
Aircraft Models	Engine	Stnd. Prop	Climb Prop	Price
PA-14, PA-16, PA-18, PA-20	Lyc. O-235C1	W74FM-49	W74FM-47	1,400.00
PA-20, PA-22 125, 135	Lyc. O-290D/D2	W74FM-54		1,400.00
PA-18, PA-18A	Lyc. O-290D/D2	W74FM-49	W74FM-47	1,400.00
T-Craft BC65, BC1265, L2, D65, DC065	Cont. A65	W72CK-42*		1,126.00
T-Craft BC12D, BC12D1	Cont. A65	W72CK-42	W72CK-40	1,126.00
Stinson 10, HW75	Cont. A70	W70DK-40		1,267.00

AP

ARROWPROP PROPELLERS FOR EXPERIMENTALS

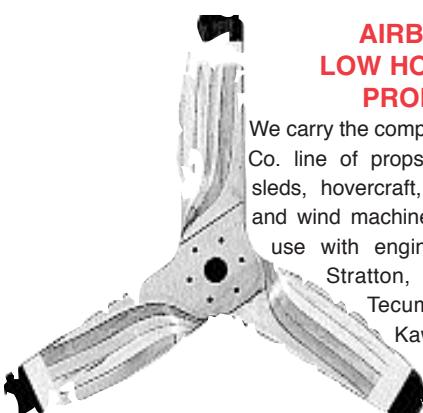


Arrowprop experimental aircraft propellers are manufactured from 7/16" laminated birch hardwood. The leading edge of the propeller is an epoxy inlay with the tips covered with epoxy bi-ax weave glass. Propellers are finished with a durable hi-gloss 2-part polyurethane.

Engine	Diameter & Pitch	Price
Volkswagen 1600	52X40, 52X42	\$349.00
Volkswagen 1800	52X44, 52X46	\$349.00
	54X44	\$349.00
Volkswagen 2100	54X48	\$349.00
	56X46	\$375.00
Continental 65	65X64	\$699.00
	72X44, 72X48	\$699.00
	74X46	\$699.00
Continental 75	68X54	\$699.00
Continental 85	72X46	\$699.00
Continental 90	60X60	\$699.00
	64X56	\$699.00
	70X52	\$699.00
Continental 0-200	72X50	\$699.00
	74X48	\$699.00
	56X66	\$699.00
	60X62	\$699.00
	72X52	\$699.00
Continental C-145	74X52, 74X54	\$749.00
Lycoming 0-235	58X68	\$699.00
	60X66	\$699.00
	64X62	\$699.00
Lycoming 0-290	62X64	\$699.00
	66X60	\$699.00
	72X54	\$699.00
Lycoming 0-320	68X72	\$699.00
	72X66	\$699.00
Lycoming 0-360	74X54	\$749.00

*Request quotation on unlisted propellers
Please provide engine model and Diameter/Pitch of prop*

ARROWPROP ULTRALIGHT PROPELLERS



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.**

Propeller Diameter	Hub Thickness			
	1-5/8"	1-3/4"	2"	2-1/4"
Stock No.	05-313--	05-314--	05-315--	05-316- -
30"	\$109.95	---	---	---
36"	\$134.95	---	---	---
38"	\$139.95	---	---	---
40"	\$144.95	---	---	---
44"	\$158.95	\$163.95	\$168.95	---
46"	\$163.95	\$168.95	\$173.95	---
48"	\$205.00	\$173.95	\$178.95	---
50"	\$173.95	\$178.95	\$235.95	\$188.95
52"	\$225.95	\$228.95	\$227.95	\$193.95
54"	\$183.95	\$188.95	\$193.95	\$198.95
56"	\$188.95	\$193.95	\$198.95	\$203.95
58"	\$193.95	\$198.95	\$203.95	\$208.95
60"	\$198.95	\$203.95	\$208.95	\$253.95
62"	---	\$208.95	\$213.95	\$467.95
64"	---	\$213.95	\$218.95	\$285.00

*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:*

1. Specify clockwise or counter-clockwise rotation
2. Specify pusher or tractor type.
3. Give center hole size.
4. Give bolt circle diameter
5. Give number of bolt holes and sizes.
6. Specify Aircraft model or prop pitch. For Vinyl Leading Edge Add \$20.00 Additional. For Polyester Leading Edge Add \$45.00 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.

WARP DRIVE PROPELLER BLADE TYPES

All propellers and blade types are available with Stainless Steel Leading Edge protection as an option at additional cost.

1. STANDARD ADVANCED COMPOSITE CARBON FIBER BLADES

The Standard Carbon Fiber Blades can be used on Rotax, Arrow, VW and similar engines.

2. HIGH HORSE POWER ADVANCED COMPOSITE CARBON FIBER BLADES

The Carbon Fiber HP Blades 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	\$374.95
3-Blade Std Carbon Fiber Propeller	05-31925	\$520.00
4-Blade Std Carbon Fiber Propeller	05-31930	\$760.00
Replacement Std Carbon Fiber Blade	05-31935	\$155.00
with HP Hub		
05-31940		\$602.00
05-31945		\$657.00

High Horse Power Carbon Fiber Prop with HP Hub

2-Blade Carbon Fiber H/P w/HP Hub	05-31950	\$625.00
3-Blade Carbon Fiber HP w/HP Hub	05-31955	\$750.50
Replacement Carbon Fiber HP	05-31960	\$235.00
Mounting Hardware (Rotax)	05-31965	\$12.30
Protractor	05-31970	\$34.95
Non-Standard Hub Pattern.....	05-31975	\$40.60
Spinner (Rotax Pattern)	05-31980	\$107.95
"HP" Hub (purchased separately)	05-31985	\$225.00

Ordering A Propeller

We request all applicable information below when you are ordering:

1. Name, Address, Phone Number(s)
2. Vehicle - type, make, model, cruise speed, tractor/pusher,
3. Engine - make, horse power,
4. Reduction Drive - type, ratio. If there is no reduction drive, (State Prop RPM)
5. Hub Requirements - A) Bolt circle dia, B) Number of bolts, C) Bolt dims, D) Center hole dims, E) Drive lug dimensions (if applicable),
6. 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 installed on the square end of the torsional rod. 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 (48" to 76"). *Ultralight 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.).*

Ultralight 2-Blade Ivoprop	P/N 05-33220	\$354.95
Ultralight 3-Blade Ivoprop	P/N 05-33225	\$549.00
Ultralight 6-Blade Ivoprop	P/N 05-33235	\$1,104.00
Medium 2-Blade Ivoprop	P/N 05-00692	\$736.00
Medium 3-Blade Ivoprop	P/N 05-00693	\$939.00
Magnum 2-Blade Ivoprop	P/N 05-33240	\$907.00
Magnum 3-Blade Ivoprop	P/N 05-33250	\$1,157.00
Magnum 6-Blade Ivoprop	P/N 05-33260	\$2,074.00

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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	\$906.00
Standard 3-Blade Ivoprop Kit	P/N 05-33210	\$1,055.00
Standard Retrofit Kit for Ground Adjustable Ivoprops	P/N 05-33215	\$614.00
Medium 2-Blade Ivoprop	P/N 05-00694	\$1,882.00
Medium 3-Blade Ivoprop	P/N 05-00695	\$2,090.00
Medium Retrofit Kit for Ground Adjustable Ivoprops	P/N 05-00696	\$1,290.00
Magnum 2-Blade Ivoprop Kit	P/N 05-33270	\$2,223.00
Magnum 3-Blade Ivoprop Kit	P/N 05-33280	\$2,691.00
Magnum 6-Blade Ivoprop Kit	P/N 05-33290	\$3,412.00
Magnum Retrofit Kit for Ground Adjustable Ivoprops	P/N 05-33295	\$1,482.00



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
- \$312.95

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	\$155.95
Bulkheads Only: Front	P/N 10004-F	\$39.85
Rear	P/N 10004-R	\$39.85
Dome Only.....	P/N 10003	\$84.90

AP



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".

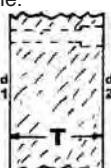
Complete Kit	P/N 10303	\$123.95
Rear Bulkhead Only	P/N 10302	\$37.40
Dome Only	P/N 10301	\$79.45
SN-4 Kit (undrilled bulkhead)	P/N 05-13200	\$116.00
Optional Front Bulkhead (Not Incl. In Kit)	P/N 10304	\$42.00

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 Type |
| • Prop Hub Thickness (T) | • Prop Bolt Dia. (d ₁) |
| • Prop Bolt Bushing Dia.(d ₂) | • Engine Type & Model |
| • Specify SAE #1 or SAE #2 or SAE #3 Pattern | • Aircraft Type & Model |



* Note: SAE #1 = 4-3/8" dia.; SAE #2 = 4-3/4" dia.; SAE #3 = 5-1/4" dia.



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	\$69.00	SN-4	\$63.00	AC-1	\$82.00
BN-3	\$82.00	SN-5	\$66.00		

ALL SPINNERS MADE ON STEEL TOOLING

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

Prices Subject to Change Without Notice

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AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

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 0-290, 0-320 and 0-360 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	\$162.95
Rear Bulkhead Only (Large)	P/N 10031	\$37.50
Front Bulkhead Only (Small)	P/N 10051	\$40.30
Dome Only	P/N 10022	\$86.50

STANDARD BN-3 KITS

P/N	Specifications	Price
05-10000	HUB 3-7/16, SAE2, BOLT 3/8, BWII 5/8	\$162.95
05-11000	HUB 3-9/16, SAE2, BOLT 3/8, BWII 5/8	\$162.95
05-12000	HUB 3-3/4, SAE2, BOLT 3/8, BWII 5/8	\$162.95
05-13000	HUB 4-1/4, SAE2, BOLT 3/8, BWII 5/8	\$162.95

ALL OTHER BN-3 SPINNERS ARE SPECIAL ORDER

PROP SPACERS

(6061T6 ALUMINUM WITH PROP BOLT HOLES DRILLED)

Thickness	P/N	Price	Thickness	P/N	Price
1/16"	10055-1	\$15.95	1/4"	10055-4	\$22.95
1/8"	10055-2	\$17.95	3/8"	10055-5	\$29.95
3/16"	10055-3	\$21.95			

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 plates	P/N 10340	\$147.00
BN-2 dome only	P/N 10341	\$98.00
BN-2 bulkhead only	P/N 10342	\$37.50
BN-2 spinner kit w/undrilled plates	P/N 05-13500	\$148.95

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 0-235 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	\$197.95
Kit Less Fairing	P/N 10105-1	\$161.95
Front (Large) Bulkhead Only	P/N 10102	\$39.00
Rear (Small) Bulkhead Only	P/N 10103	\$42.00
Dome Only	P/N 10101	\$89.90
Fairing Only	P/N 10104	\$28.60

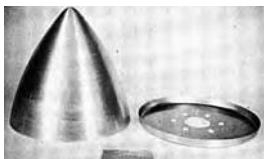
SPINNERS



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\$31.45

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\$39.85
Bracket & Hardware Only (Fits Either Spinner) P/N 05-21800\$5.50



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 predrilled 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 KitP/N 10313\$126.95
Bulkhead OnlyP/N 10312\$42.90
Dome OnlyP/N 10311\$83.50
Front BulkheadP/N 10314\$40.50
SN-5 KitP/N 05-13300\$119.60
(undrilled bulkhead)

COMPOSITE SPINNERS FOR PIPIERS & CESSNAS

FAA Approved

These new composite materials spinners and bulkheads are FAA/PMA approved and STC's to replace aluminum spinners and bulkheads on the Piper & Cessna aircraft models listed below. Bulkheads are constructed for maximum strength and resistance to fatigue due to vibration. Piper's 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.

Part No.	Description	Model	Price
05-28350	Spinner kit	PA28-140/150/160	\$684.00
05-01257	Spinner	150A, 150F, 150FA	\$299.00
05-01258	Spinner	170B, 172 (1956-59)	\$299.00
05-01259	Spinner	172XP	\$628.00
05-00744	Spinner	172 Skyhawk (G-Q)	\$280.00
05-00746	Spinner	182 P,Q Skylane	\$575.00
05-00747	Spinner	177B, 177RG Cardinal	\$628.00
05-00748	Spinner	210 (all 3 blade McCauley	\$688.00
05-00749	Spinner	PA-140/150/160 Cherokee	\$295.00
05-00752	Spinner	PA-24-180/250,PA23-150/160	\$583.00
05-00753	Spinner	PA-24-180/250,PA23-235/250	\$734.00
23815-00	Bulkhead	PA30,PA23-250 (Aztec)	\$517.50
23818-00	Spinner dome	PA30,PA23-250 (C model & up)	\$832.95
35323-010	Spinner dome	PA28-151/161 Warrior	\$276.95
35323-011	Alt. Bulkhead	PA28-151/161 Warrior	\$229.00
35323-012	Fwd. Bulkhead	PA28-151/161 Warrior	\$343.00
05-00754	Spinner	310R,T310Q,T310R,T310P	\$583.00
36757-007	Rear Bulkhead	PA28-161 Warrior	\$268.95
36850-08	Spinner dome	PA28-161 Warrior	\$348.95
37138-200	Spinner LH	PA34-200T Seneca II	\$1,147.00
37138-201	Spinner RH	PA34-200T Seneca II	\$1,147.00
37138-05	Bulkhead	PA34-200T Seneca II	\$586.00
43933-007	Bulkhead	PA31-325/-350 Navajo	\$733.00
43933-008	Bulkhead	PA31-325/-350 Navajo	\$733.00
43940-008	Spinner dome	PA31-325/-350 Navajo	\$1,046.00
43940-009	Spinner dome	PA31-325/-350 Navajo	\$1,046.00
61974-003	Bulkhead only	PA38-112 Tomahawk	\$343.95
05-00756	Spinner	PA28-235	\$705.00
05-00757	Fwd. Bulkhead	PA28-180/181 Cherokee/Archer	\$257.95
65805-00	Spinner dome only	PA28-180/181 Cherokee/Archer	\$745.00
05-00758	Spinner	PA32R-300, PA32-260/300/301,	\$492.95
05-00759	Fwd. Bulkhead	PA28R-180/200, PA-235	\$258.95
05-00761	Spinner	PA38-112 Tomahawk	\$532.00
05-00762	Spinner	PA34-200 Seneca I	\$948.00
87325-05	Fwd. Bulkhead	PA28-161 Warrior	\$343.95
05-00763	Spinner	PA34-200 Seneca I	\$1,188.00

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 SPIN01.....	\$69.25
5" Diameter.....	P/N SPIN02.....	\$85.25
6-3/4" Diameter.....	P/N SPIN03	\$123.95



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	\$144.00
SN-2 dome only	P/N 10331	\$96.00
SN-2 bulkhead onlyP/N 10332	\$37.50	
SN-2 spinner kit w/undrilled plates	P/N 05-13400	\$144.00

For spinner kits with drilled plates, please furnish information required for spinners orders as noted on page 174.

AP



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.
3. Number of Blades.
2. Make of Propeller.
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	\$109.95	12"	UHS Spinner	05-09400	\$149.95
9"	UHS Spinner	05-09100	\$129.95	14"	UHS Spinner	05-09500	\$149.95
10"	UHS Spinner	05-09200	\$139.95	11.5"	Spinner Kit	05-09700	\$149.95
11"	UHS Spinner	05-09300	\$149.95	13.5"	Spinner Kit	05-09800	\$172.95



LYCOMING O-290 PROPELLER 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 0-290G	P/N 05-28600	\$73.00
For 0-290D	P/N 05-28602	\$85.50



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. 0-235 with SAE1 (4 3/8") bolt pattern.

P/N 10351Cont. ...List \$256.00\$31.50

Flange equivalent to Lyc. P/N 45688, for use with Lyc. 0-235 thru 0-360 engines with SAE2 Bolt Pattern engines.
P/N 10352 Lyc.List \$114.40\$33.50

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	\$56.00
6"	3/8"	SAE 2 (4.75")	3/8"	05-02465	\$56.00
7"	3/8"	SAE 2	3/8"	05-02466	\$56.00
7"	3/8"	SAE 2	7/16"	05-02467	\$56.00
7"	3/8"	SAE 2	1/2"	05-02468	\$56.00
7"	1/2"	SAE 2	3/8"	05-02469	\$56.00
7"	1/2"	SAE 2	7/16"	05-02470	\$56.00
7"	1/2"	SAE 2	1/2"	05-02471	\$56.00

CRUSH PLATES FOR WOOD PROPS

Solid Prop Spacers, 6 thru holes. The prop bolt goes thru the prop and spacer and threads into the engine.

Bolt Dia.	Part No.	Price
PRO SPACER 1.5"x5" ROTAX	05-02472	\$56.00
PRO SPACER 2"x5" ROTAX	05-02473	\$56.00
PRO SPACER 2.25"x5" ROTAX	05-02474	\$56.00
PRO SPACER 3"x5" ROTAX	05-02475	\$56.00
PRO SPACER 1.25"x6" LYC, CONT.	05-02476	\$56.00
PRO SPACER 2.25"x6" LYC, CONT.	05-02477	\$56.00
PRO SPACER 1.25"x7" LYC, CONT.	05-02478	\$56.00
PRO SPACER 225"x7" LYC, CONT.	05-02479	\$56.00

DRIVE LUGS FOR EXTENSIONS

Part No.	Type	O.D.	I.D.	Thread	Price Ea.
05-28300	Unthreaded	5/8	7/16	---	\$24.00
05-28400	Unthreaded	3/4	37/64	---	\$24.00
05-28310	Threaded	5/8	---	3/8-24	\$24.00
05-28410	Threaded	3/4	---	1/2-20	\$25.30



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 black 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; add \$14. If prop is metal, please measure depth of drilled counterbore at all 6 bolt hole positions; add \$24.

Engine	Flange SAE No.	Bolt Circle Diameter	Lug Dia.	Eng. Bolt Size
Cont. A-65, A-75, C-85, C-90, 0-200	SAE 1	4-3/8	5/8"	3/8"
Lycoming 0-235	SAE 1 or 2		5/8"	3/8"
Lycoming 0-290	SAE 2	4-3/4"	5/8"	3/8 or 7/16 1/2"
Lycoming 0-320	SAE 2	4-3/4"	3/4"	
Lycoming 0-360	SAE 2	4-3/4"		

PLEASE ORDER USING THE FOLLOWING PART NO.

___ X ___ - ___ E - ___ P - SAE ___ - ENGINE - PROP - PROP
 length diam engine prop thr or non 1 or 2
 prop prop bolt 3/8 non-threaded (wood or
 side bolt 3/8 or 7/16 or 1/2 non-threaded composite
 (6 or 7) or 7/16 or 1/2 lugs installed in extension) or metal
 or metal

Example: 4 X 7 - 7/16 E - 3/8P thr - S2 - Lyc 0320 - wood - wood

PROP EXTENSION PRICE LIST

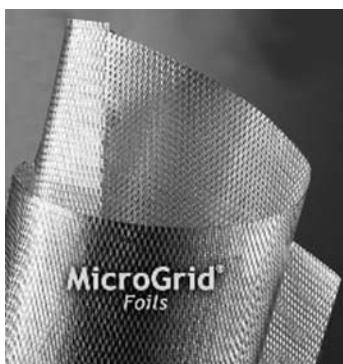
Length x Dia.	Price	Length x Dia.	Price
3"x6"	\$335.00	8"x6"	\$621.25
4"x6"	\$315.00	4"x7"	\$402.50
5"x6"	\$365.00	6"x7"	\$503.75
6"x6"	\$390.00	8"x7"	\$697.50

Prices on prop extensions can vary per application REQUEST QUOTE

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.

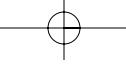
The appropriate gauge and pattern of material is easily adhered to the composite for 200,000 amps of conductivity. Aircraft are easily repaired after a lightning strike by simply sanding away the surface to apply a patch of new MicroGrid. And fantastically flexible MicroGrid easily conforms to a variety 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	0.002 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 \$5.10 ft.
Copper MicroGrid (18" wide)P/N 05-02632 \$5.10 ft.



BALLISTIC RECOVERY SYSTEMS

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.

AP

Ballistic Parachutes for Ultralights & Kitplanes (BRS-6 System)

BRS-6 System	Maximum Weight (lbs./kg)	Maximum Deployment 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	\$2,356.95
600 Softpack	600/272	138/222	18/9	10 x10 x5.5	13-04072	\$2,138.95
600 VLS	600/272	138/222	23/11	18 x 11.5 x7.5	13-04073	\$2,451.25
800 Canister	800/363	138/222	23/11	21.5 x 7 round	13-04075	\$2,734.59
800 Softpack HD	800/363	138/222	19/10	10 x 11 x5.5	13-04076	\$2,545.59
800 VLS	800/363	138/222	25/12	18 x 11.5 x 5.5	13-04077	\$2,828.95
1050 Canister	1,050/475	138/222	28/13	21.5 x 7 round	13-32445	\$3,395.00
1050 Softpack HD	1,050/475	138/222	24/11	10 x 11 x5.5	13-32446	\$3,195.00
1050 VLS	1,050/475	138/222	29/13	18 x 11 x 5.5	13-32445-VLS	\$3,495.00
1350 Softpack LSA	1,350/612	138/222	29/13	15 x 10.5 x 6	13-04079	\$3,867.95
1350 VLS	1,350/612	138/222	34/15	18 x 11.5 x 5.5	13-04080	\$4,056.95
1350 High Speed	1,350/612	184/296	33/15	-	13-04081	\$5,567.95
1600 Softpack HD	1,600/726	138/222	35/16	20 x 8.5 x 9	13-04082	\$5,284.95

SMOKE SYSTEMS

SMOKE SYSTEM KIT MODELS SA-100/SA101



Model SA-100 - Smoking Airplanes Smoke System Top Mounted Oil Pump For Non-Continuous Inverted Flight.

This complete Smoke System Kit is the same as the Model SA-101 with the exception that it is NOT intended for continuous inverted flight. If your airplane is NOT EQUIPPED with an inverted fuel and oil system you should purchase this kit. Mil-Spec 15 amp breaker switch, 14 awg wire harness with AMP connectors, Aeroquip 306-4, 1/4" ID pressure hose, stainless steel injector with fittings, Teflon lined stainless steel -4 AN braided hose, control mounting bracket with label, oil tank and oil pump with "quick disconnect" hardware, and any other part you can think of for an easy installation with a detailed Installation and Operation Manual. Model SA-101 - Smoking Airplanes Smoke System Top Mounted Oil Pump For Continuous Inverted Flight. This complete Smoke System Kit is the same as the Model SA-100 with the exception of a "flop tube" for continuous inverted flight. If your airplane is equipped with an inverted fuel and oil system you should purchase this kit. Mil-Spec 15 amp breaker switch, 14 awg wire harness with AMP connectors, Aeroquip 306-4, 1/4" ID pressure hose, stainless steel injector with fittings, Teflon lined stainless steel -4 AN braided hose, control mounting bracket with label, oil tank and oil pump with "quick disconnect" hardware, and any other part you can think of for an easy installation with a detailed Installation and Operation Manual.

STICK SWITCH KIT SOLD SEPARATELY



Oil Pump Bracket

Smoking airplanes smoke system bracket for mounting the oil pump on the side OR end of the SA-100 and SA-101 Oil Tank. The oil pump bracket is perfect for areas where the top mounted oil pump is too tall to fit your needs. The bracket is 1/8" thick aluminum with all holes pre-drilled. All hardware is provided for a complete conversion including a pre-fitted suction hose extension with fittings.



Smoke System Stick Switch Kit by Smoking Airplanes

The control stick/yoke activation system allows you to activate the smoke system by pushing a momentary button on the stick/yoke. Push and hold to leave a smoke trail, release the button and the smoke trail stops. Great for aerobatics and dog fighting.

THIS ITEM SOLD SEPARATELY.

Description	Part No.	Price
Smoke System Model SA-100	05-01438	\$680.00
Smoke System Model SA-101	05-01439	\$711.00
Oil Pump Bracket for SA-100/101	05-01442	\$35.95
Switch Stick Kit	05-01443	\$57.95
Yak/Nanchang Installs Add \$55.00	05-01444	\$59.50



SMOKE SYSTEM KIT MODELS SA-102/SA101

Model SA-102 - Smoking Airplanes Smoke System Model SA-102 Side OR End Mounted Oil Pump, Off-Set Oil Fill Opening for Non-Continuous Inverted Flight.

This complete Smoke System Kit differs from the SA-100 only by its side mounted oil pump and re-positioned oil fill opening. The Model SA-102 is NOT intended for continuous inverted flight. If your airplane is NOT EQUIPPED with an inverted fuel and oil system you should purchase this kit. Mil-Spec 15 amp breaker switch, 14 awg wire harness with AMP connectors, Aeroquip 306-4, 1/4" ID pressure hose, stainless steel injector with fittings, Teflon lined stainless steel -4 AN braided hose, control mounting bracket with label, oil pump bracket, oil tank with off-set oil fill opening, oil pump and oil tank "quick disconnect" hardware, and any other part you can think of for an easy installation with a detailed Installation and Operation Manual.

Model SA-103 - Smoking Airplanes Smoke System Model SA-103 Side or End Mounted Oil Pump, Off-Set Oil Fill Opening for Continuous Inverted Flight. This complete Smoke System Kit is the same as the Model SA-102 with the exception of a "flop tube" for continuous inverted flight. If your airplane is equipped with an inverted fuel and oil system you should purchase this kit. Mil-Spec 15 amp breaker switch, 14 awg wire harness with AMP connectors, Aeroquip 306-4, 1/4" ID pressure hose, stainless steel injector with fittings, Teflon lined stainless steel -4 AN braided hose, control mounting bracket with label, oil pump bracket, oil tank with off-set oil fill opening, oil pump and oil tank "quick disconnect" hardware, & any other part you can think of for an easy installation with detailed Installation & Operation Manual.

STICK SWITCH KIT SOLD SEPARATELY

Oil Pump Bracket



Smoking airplanes smoke system bracket for mounting the oil pump on the side OR end of the SA-102 and SA-103 Oil Tank. The oil pump bracket is perfect for areas where the top mounted oil pump is too tall to fit your needs. The bracket is 1/8" thick aluminum with all holes pre-drilled. All hardware is provided for a complete conversion including a pre-fitted suction hose extension with fittings.



Smoke System Stick Switch Kit by Smoking Airplanes

The control stick/yoke activation system allows you to activate the smoke system by pushing a momentary button on the stick/yoke. Push and hold to leave a smoke trail, release the button and the smoke trail stops. Great for aerobatics and dog fighting.

THIS ITEM SOLD SEPARATELY.

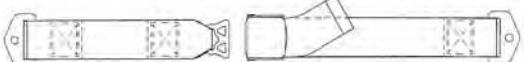
Description	Part No.	Price
Smoke System Model SA-102	05-01440	\$710.00
Smoke System Model SA-103	05-01441	\$734.00
Oil Pump Bracket for SA-102/103	05-01442	\$35.95
Switch Stick Kit	05-01443	\$57.95
Yak/Nanchang Installs Add \$55.00	05-01444	\$59.50

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.

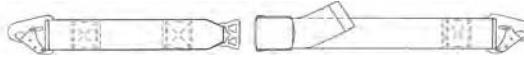
STYLE NO. 1A SEAT BELT



Most popular metal-to-metal seat belt. Furnished with No. 442878 triangular end fittings. 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. Choice of colors: Black, Brown, Tan, Navy Blue, Royal Blue, Gray, Red, Green.

P/N	Color	Price
13-00201	Black	\$35.80
13-00202	Brown	\$35.80
13-00203	Tan	\$35.80
13-00204	Navy Blue	\$35.80
13-00205	Royal Blue	\$35.80
13-00206	Gray	\$35.80
13-00207	Red	\$35.80
13-00210	Green	\$35.80

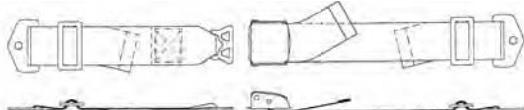
STYLE NO. 1B SEAT BELT



Same as style No. 1A above except with #442868 clip type end fittings.

P/N	Color	Price
13-00301	Black	\$45.90
13-00302	Brown	\$45.90
13-00303	Tan	\$45.90
13-00304	Navy Blue	\$45.90
13-00305	Royal Blue	\$45.90
13-00306	Gray	\$45.90
13-00307	Red	\$45.90
13-00310	Green	\$45.90

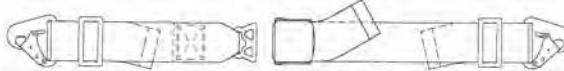
STYLE NO. 2A SEAT BELT



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.

P/N	Color	Price
13-00401	Black	\$48.25
13-00402	Brown	\$48.25
13-00403	Tan	\$48.25
13-00404	Navy Blue	\$48.25
13-00405	Royal Blue	\$48.25
13-00406	Gray	\$48.25
13-00407	Red	\$48.25
13-00410	Green	\$48.25

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 \$47.70

SEAT BELT HARDWARE



TRIANGULAR
END FITTING
P/N 442879
\$7.30 Ea.



CLIP TYPE
END FITTING
P/N 442868 (Steel)
\$10.80 Ea.



SLIDE
ADJUSTER
P/N 442663
\$3.75 Ea.

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

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	\$47.50
13-00502	Brown	\$47.50
13-00503	Tan	\$47.50
13-00504	Navy Blue	\$47.50
13-00505	Royal Blue	\$47.50
13-00506	Gray	\$47.50
13-00507	Red	\$47.50
13-00510	Green	\$47.50

AP

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	\$219.50
Certified MS22033-4 Belt Only P/N 13-01100	\$149.75
Harness Only(Black) P/N 13-01200	\$69.75



OTHER COLORS

	Olive Green	Price	Royal Blue	Price	Neutral	Price
Set Kit	P/N: 13-04105	\$205.75	P/N: 13-04124	\$205.75	P/N: 13-04118	\$205.75
Belt	P/N: 13-04106	\$205.75	P/N: 13-04125	\$205.75	P/N: 13-04119	\$205.75
Harness	P/N: 13-04107	\$205.75	P/N: 13-04126	\$205.75	P/N: 13-04120	\$205.75
	Silver Grey	Price	Brown	Price	Navy Blue	Price
Set Kit	P/N: 13-04108	\$205.75	P/N: 13-04127	\$205.75	P/N: 13-04130	\$205.75
Belt	P/N: 13-04109	\$205.75	P/N: 13-04128	\$205.75	P/N: 13-04131	\$205.75
Harness	P/N: 13-04110	\$205.75	P/N: 13-04129	\$205.75	P/N: 13-04132	\$205.75
	Red	Price	Tan	Price		
Set Kit	P/N: 13-04121	\$205.75	P/N: 13-04133	\$205.75		
Belt	P/N: 13-04122	\$205.75	P/N: 13-04134	\$205.75		
Harness	P/N: 13-04123	\$205.75	P/N: 13-04135	\$205.75		

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 \$88.50 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 \$88.50 Set
Six Place Piper Set P/N 05-02449 \$88.50 Set

NOTE: SEE NEXT PAGE FOR SHOULDER HARNESSES COMPATIBLE WITH THESE SEAT BELTS.

SEAT BELT - SHOULDER HARNESES



STYLE NO. 3A "Y" SHOULDER HARNESS

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 \$43.95

See illustration of 3A and 3C harnesses.



STYLE NO. 3B "Y" SHOULDER HARNESS

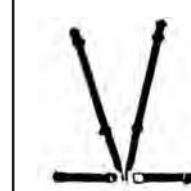
Harness with two chrome-plated steel adapters on front webbing extensions which mate with metal-to-metal buckle for safety belt/harness set. Harness is "Y" type with one attachment fitting furnished. Lift buckle to release belt and harness. Order belt separately.

P/N	Color	Price
13-00701	Black	\$69.35
13-00702	Brown	\$69.35
13-00703	Tan	\$69.35
13-00704	Navy Blue	\$69.35
13-00705	Royal Blue	\$69.35
13-00706	Gray	\$69.35
13-00707	Red	\$69.35
13-00710	Green	\$69.35

CS-647
Fittings
Left & Right
(As used on
3B & 3C har-
nesses)
\$8.90 /set

AP

NOTE:
These shoulder harnesses mate with #1 and #2
harnesses are not FAA approved for certificated aircraft.



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	P/N	Color	Price
13-00801	Black	\$69.95	13-00805	Royal Blue	\$69.95
13-00802	Brown	\$69.95	13-00806	Gray	\$69.95
13-00803	Tan	\$69.95	13-00807	Red	\$69.95
13-00804	Navy Blue	\$69.95	13-00810	Green	\$69.95



STYLE 3D "H" TYPE SHOULDER 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 \$87.25

seat belts on the previous page but the
aircraft. Only the seat belts carry FAA approval.

FAA APPROVED SEAT BELT/SHOULDER HARNESS SETS

Cessna • Beech • Piper • Aeronca • Stinson



These new manufacture 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 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.

Application	Part No.	Price ea.	Application	Part No.	Price ea.
Cessna 120/140	13-00901	\$153.95	Piper J-3, PA-11 Front	13-00913	\$153.95
Cessna 150/152	13-00902	\$153.95	Piper J-3, PA-11 Rear	13-00914	\$169.95
Cessna 170	13-00903	\$153.95	Piper PA-18 Front	13-00921	\$153.95
Cessna 172	13-00904	\$153.95	Piper PA-18 Rear	13-00922	\$199.95
Cessna 175A,B,C	13-00905	\$153.95	Piper PA-20	13-00915	\$153.95
Cessna 180	13-00906	\$153.95	Piper PA-22/22-108	13-00916	\$153.95
Cessna 182	13-00907	\$153.95	Piper PA-28	13-00917	\$483.95
Cessna 185	13-00908	\$153.95	Aeronca/Champ Front	13-00918	\$198.95
Cessna 206	13-00909	\$153.95	Aeronca/Champ Rear	13-00919	\$198.95
Cessna 207	13-00910	\$153.95	Stinson	13-00920	\$153.95
Beech 35 Pilot	13-00911	\$288.95			
Beech 35 Co-Pilot	13-00912	\$288.95			

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.

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 820 \$653.00
Lap Pad (Black) P/N 823A \$198.95
Crotch Strap Connector for 7/8" Tubing P/N 822-M \$61.50
Crotch Strap Connector for 1" Tubing P/N 822-L \$72.00
Seat Belt Brochure P/N 70056-01 \$0.95

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	Notes	Configuration	Part No.	Price Ea.
Grumman	AA1	All that have existing shoulder strap bracket	3 point static	13-00664	\$172.95
Grumman	AA5	Bolts into existing attachment points with original Grumman hardware. (all except Amer. General)	3 point front inertia Front static Rear static	13-00666 13-00667 13-00668	\$328.95 \$172.95 \$163.95
Lancair	320	Uses factory locations	4 point static	13-00669	\$412.95
Mooney	201	Uses existing attachment points	3 point Front inertia	13-00670	\$329.95
Vans	RV-6/6A	Uses factory attachment points	4 point static	13-00671	\$438.95
Vans	RV-6/6A	Uses factory attachment points Crotch strap attach brkt. dwg.	5 point static	13-00672	\$478.95
Vans	RV-8/8A	Uses factory locations	4 point static (Front or Rear)	13-00673	\$438.95
Vans	RV-8/8A	Uses factory locations/builder supplied crotch strap attach points	5 point static	13-00674	\$487.95

Please complete the part number shown below by adding the dash number for your desired color; Black -1, Dark Grey -2, Light Blue -3, Blue -4, Pepperdust -5, Cruiser Grey -6, Azure -7, Yellow -8, Red -9, Purple -10. Color sample sheet available upon request P/N 13-00675

AP

MICROFLIGHT RESTRAINING SYSTEMS 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:

	Additional
Webbing - red, blue, yellow, silver, brown	\$10.00
Hardware - gold, black	\$10.00
L links (instead of sewn to lap)	\$20.00

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.
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Aircraft Type	Part Number	Price/Ea.
T-Bird	RS001	\$134.95
Tierra	RS001.1	\$134.95
J3 Kitten	RS001.2	\$134.95
X, MXL, I & II	RS004	\$134.95
Sprint, Sport	RS004.1	\$134.95
GT-400	RS008	\$132.95
GT-500	RS008.1	\$139.95
Phantom I	RS008.2	\$139.95
Kitfox	RS008.3	\$139.95
Avid Flyer	RS008.4	\$134.95
Buckeye Paraplane	RS008.5	\$134.95
Buccaneer	RS012	\$139.95
MaxAir	RS004.2	\$134.95
RANS S-12/S-14 (specific)	RS012.1	\$139.95
Renegade (front & rear)	RS030	\$258.95
Explorer	RS014	\$116.00
Zephyr	RS014.1	\$134.95
Talon	RS014.2	\$134.95
Thundergull	RS017	\$129.95
Titan Tornado	RS017.1	\$129.95
Challenger	RS017.2	\$129.95
Hurricane	RS020	\$134.95
Spitfire	RS020.1	\$134.95
N-3 Pup	RS022.2	\$129.95
CGS Hawk	RS022.3	\$129.95
UltraPup (front & rear)	RS024	\$248.95
Fisher	RS025	\$139.95
MiniMax	RS025	\$139.95
Weedhopper	RS001.4	\$134.95
Kolb Mark III	RS027	\$134.95
Kolb Firestar II (front & rear)	RS027.1	\$253.95
Kolb Firestar II (front only)	RS027.2	\$129.95

HOOKER CUSTOM HARNESSES SPORT HARNESS SET

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.

With pad set P/N 13-00925 \$206.95
Without crotch strap P/N 13-00930 \$185.95

SPECIFY AIRCRAFT TYPE & COLORS OF WEBBING WHEN ORDERING.

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.

With one pad set P/N 13-00935 \$277.95
With stainless ratchet tightener P/N 13-00950 \$363.95

SPECIFY AIRCRAFT TYPE & COLORS OF WEBBING WHEN ORDERING.

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.

P/N 13-00955 \$161.95

SPECIFY AIRCRAFT TYPE & COLORS OF WEBBING WHEN ORDERING.

COLORS AVAILABLE (HOOKER)

1-3/4" WEBBING: red, AF gold, olive drab, green, sage green, royal blue, navy, silver grey, dark grey, tan, brown and black.

2" WEBBING: red, dragon red, orange, AF gold, olive drab, sage green, baby blue, royal blue, navy, burgundy, silver grey, dark grey, tan, brown and black.

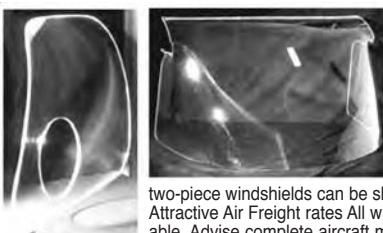
3" WEBBING: red, olive drab, sage green, royal blue, silver grey and black.

PAD TRIM COLORS: red, pink, orange, lemon yellow, AF gold, green, olive drab, sage green, royal blue, navy, burgundy, silver grey, dark grey, tan, brown and black.

PAD COLORS: red, orange, lemon yellow, sport gold, green, olive drab, teal, royal blue, navy, burgundy, plum, light purple, purple, silver grey, dark grey, tan, brown and black.

SPECIFY WEBBING, PAD TRIM AND PAD COLORS WHEN ORDERING ALL HOOKER HARNESS PRODUCTS

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, 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!

PRICES ARE FOR CLEAR WINDSHIELDS. ADD 20% FOR TINTED.

Please visit our website for more parts and details on this item:
[Http://www.aircraftspruce.com/catalog/appages/lpaero.php](http://www.aircraftspruce.com/catalog/appages/lpaero.php)

AP

Windshield Part No.	Aircraft	Price	Windshield Part No.	Aircraft	Price	Windshield Part No.	Aircraft	Price
*192	192 Aeronca Citabria 7ECA, 7GC4A, 7GCBC, 7KCAB	\$186.00	*339	Cessna 182 S/N 55845 to 64296	\$317.00	156	1967-1969 (6 cabin Windows 1 pc)	\$185.00
205	Aeronca Chief 11AC, BC, CC	\$158.00	*325	Cessna 205	\$279.00	'561	Mooney M20J and M20K	\$227.00
*802	Bellanca Viking	\$253.00	*325	Cessna 206, U206, S/N 0001-U206-0437	\$279.00	450	Piper J-3	\$103.00
250	Beech Bonanza Lft. 187 thru G-35	\$108.00	*326	Cessna P206 S/N 0001 thru 0160	\$279.00	*455	Piper PA-12-Round Top	\$149.00
251	Beech Bonanza Rt. 187 thru G-35	\$108.00	*326	Cessna U206 S/N 0438 + up	\$339.00	*456	Piper PA-12 Square Top	\$147.00
280	Bonanza Lft. 250 H-35-V-35, Baron 55	\$185.00	*330	Cessna P206 S/N 0161 + up	\$339.00	*459	Piper PA-15, 16, 17	\$186.00
281	Bonanza Rt. 250 H-35-V-35, Baron 55	\$185.00	*325	Cessna 207	\$325.00	463	Piper PA-22 Tripacier, 108 Colt, Bubble	\$187.00
301	Cessna 120-140 S/N 8001 to 8799	\$184.00	*324	Cessna 210 S/N 58221 to 58510	\$278.00	473	Piper PA-23 Apache S/N 1502 + up Rt.	\$190.00
300	Cessna 120-140 S/N 8800 + up	\$184.00	*325	Cessna 210 S/N 58511 to 58715	\$278.00	422	421 Piper PA-23-250 S/N 27-2000 +up Lt.	\$202.00
303	Cessna 140A, 150, 152	\$178.00	*326	Cessna 210 S/N 58716 to 58818	\$279.00	480	Piper PA-23-250 S/N 27-2000 + up Rt.	\$202.00
*310	Cessna 170 1948-49 to S/N 18728	\$198.00	*066	Cessna 210 S/N 58819 to 58936	\$321.00	481	Piper PA-24 Comanche Lft.	\$127.00
*306	Cessna 170A S/N 18729 to 20676	\$193.00	*067	Cessna 210 S/N 58937 + up	\$321.00	485	Piper PA-24 Comanche Rt.	\$127.00
*311	Cessna 172 S/N 47747 to 49544	\$254.00	*536	Cessna 310 S/N 35000 to 35546	\$277.00	486	Piper PA-25 Pawnee S/N 1-655	\$99.00
312	Cessna 170B S/N 20267+up 1952-1955	\$193.00	*336	Cessna 310 S/N 35547 to 39299	\$334.00	490	Piper PA-25 Pawnee S/N 656 +up	\$99.00
*312	Cessna 172 S/N 28000 to 47746	\$193.00	*336	Cessna 310 S/N 310-0001 to 310K-0245	\$334.00	491	Piper PA-28 Cherokee S/N 1 +up Lt. (.125)	\$104.00
*313	Cessna 172 S/N 49545 50572	\$264.00	*716	Cessna 310 S/N L0001 to 310Q0400	\$415.00	905	Piper PA-28 Cherokee (.250) Lft.	\$123.00
*345	Cessna 172 S/N 50573 to 72884	\$287.00	*719	Cessna 310 S/N Q0401 + up	\$487.00	907	Piper PA-28 Cherokee (.250) Rt.	\$123.00
*337	Cessna 172 S/N 72885 and up	\$253.00	351	Ercoupe 415 or G-Bubble	\$228.00	492	Piper PA-32-260 S/N 1-7300076 Lft.	\$116.00
*359	Cessna R172K S/N R2000 to R3199	\$348.00	657	Grumman AA1, AA1A, AA1B	\$243.00	493	Piper PA-32-260 S/N 1-7300076 Rt.	\$116.00
*329	Cessna 177, 177RG	\$279.00	*658	Grumman AA1, AAA-1A, AA-1B Canopy	\$276.00	*795	PA-38-112 Tomahawk S/N 78A0001-82A0122	\$372.00
*309	Cessna 180 S/N 30000 to 31260	\$239.00	*965	Grumman AA5, AA-5A, AA5B	\$403.00	508	Rockwell 112, 114	\$289.00
*315	Cessna 180 S/N 31261 to 50355	\$275.00	400	Luscombe 8 Series	\$152.00	552	Stinson 108 Lft.	\$118.00
*316	Cessna 180 S/N 50356 to 51183	\$284.00	100	Mooney MK20-21, 1959-64 Lft.	\$93.00	553	Stinson 108 Rt.	\$118.00
*315	Cessna 182 S/N 33000-51556	\$275.00	101	Mooney MK 20-21, 1959-64 Rt.	\$93.00	*650	T/Craft BC-12d, 1946 + up	\$179.00
*316	Cessna 182 S/N 52556-53598	\$284.00	133	Mooney 1965-1969 (4 cabin Windows) Lft.	\$99.00	*651	T/Craft BC-1940-41, Pre-war BC-65	\$179.00
*338	Cessna 182 S/N 53599 to 55844	\$293.00	134	Mooney 1965-1969 (4 cabin Windows) Rt	\$99.00			

SINGLE PIECE CESSNA WINDSHIELDS

Windshield Part No.	Aircraft	Price	Windshield Part No.	Aircraft	Price
*312/CON.	Cessna 170A, s/n 18729-20676, 1950-1951; 170B s/n 20267 thru 27169, 1952-1955; 172 s/n 28000-1963; P-172 s/n 57120-7188; F172 s/n 0001-0018	\$298.00	*316/CON	w/o compass mount	\$431.00
*315/CON	Cessna 180 s/n 30000-51183; 182 s/n 33000-53598: w/o compass mount	\$414.00	*316/CMB	w/compass mount	\$438.00
*315/CMB	w/compass mount	\$438.00	*336/CON	Cessna 310 s/n 35547-39299, 1957-1960; s/n 0001-J0200, 1961-1965; s/n K0001-N0198; 320-320C s/n 0001-C0073, 1962-1965; 320D-320F s/n D0001-F0045, 1966-1968:	\$439.00
*316/CON.	Cessna 180 s/n 50356 and up; 180 s/n 52385 and up; 182 s/n 51557-3598; 185 s/n 02311 and up: w/o compass mount	\$431.00	*336/CMB	w/o compass mount	\$476.00
*316/CMB.	w/compass mount	\$438.00	*326/CON	Cessna Skywagon 206 s/n 206-0001 & up, Super Skylane P206 s/n P206-0001 – P20600647. Removes center strap. Compass does not mount on windshield.	\$419.00
*326/CON	Cessna 182 s/n 51557-53598	\$419.00	*326/CMB	Cessna Skywagon 206 s/n 206-0001 & up, Super Skylane P206 s/n P206-0001 – P20600647. Removes center strap. Compass mounting block bonded to windshield.	\$438.00
*326/CMB	Cessna 205 s/n 205-0001-205-0577 1963 and 1964. Removes center strap. Compass does not mount on windshield. Cessna 205 s/n 205-0001-205-0577, 1963 and 1964. Removes center strap. Compass mounting block bonded to windshield.	\$438.00			

These FAA/PMA/STCD windshields replace old two-piece windshields. Prices are for clear. Add 20% for tinted. Provide complete serial No. for aircraft when ordering. Shipped by truck.

*These require motor freight shipment. All others can ship UPS. Add 20% to clear price as shown for gray or green tint. Extra thick windshields also available

SINGLE PIECE WINDSHIELDS

Part No.	Aircraft	Thickness	Price
199	Mooney Mark 20, M20, M20A, M20B, M20C, M20D, M20E, M20F	.187	\$199.00
199	Mooney Mark 21, Super 21Master, Exec. 21	.187	\$199.00
085	Navion Rangemaster A,B,D,E,F	.187	\$297.00
085	Navion Rangemaster G, H	.187	\$297.00
999	Piper Comanche PA-24-180, -250, -260, -400	.250	\$327.00
K2028-01	Piper PA-28-180, PA-28R-180, PA-28R-250	.250	\$288.00
	PA-44-180, PA-44-180T, PA-28-140, -150, -180, -235		
K2028 Kit	Attaching Parts & STC For #K2028-01		
999	Piper Twin Comanche PA-30, PA-39	.250	\$415.00
			\$327.00

NOTE:

Please specify year and serial number of aircraft when ordering windshields in the above charts to confirm wind-shield is approved for your serial number.

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.

AVAILABLE IN THREE THICKNESSES		
Part No.	Thickness	Price
269.312	.312	\$869.00
269.375	.375	948.00
269.500	.500	1,098.00

Note: Verify that your serial number is eligible before ordering.

FAA APPROVAL LIST

Beech Bonanza F33 s/n CD-1235 – CD 1254	Beech Bonanza V35B thru V-35B-TC s/n D9069 and up
Beech Bonanza G33 s/n CD-1255 – CD 1304	Beech Bonanza 36 & A36 s/n E-1 and up
Beech Bonanza F33A s/n CE-290 and up	Beech Bonanza A36TC & B36TC s/n EA-1 and up
Beech Bonanza F33C s/n CJ-26 and up	Beech Baron 58 & 58A s/n TH-1 and up
Beech Bonanza 33 thru E33A s/n CD-1 – CD-1234,CE-1 - CE-289, CJ-1 – CJ-25	Beech Baron TC58 & 58TCA s/n TK-1 and up
Beech Bonanza H35 thru V35A-TC s/n D4866 – D9068	Beech Travelair 95 thru E95 s/n TD-1 – TD-721

INDIVIDUAL WINDOWS

Window Model No.	Aircraft	Description	Each
231	Aeronca 7AC	Left front sliding-forward	\$32.95
232		Left front sliding-rearward	27.95
233		Left or Right rear	44.95
234		Right front door	37.95
225	Aeronca 11AC	Left or Right front door (sliding)	28.95
226		Left or Right rear (Door) (sliding)	28.95
227		Left or Right rear	31.95
342	Cessna 120/140	Left or Right door	43.50
343		Left or Right rear	31.50
344		Left or Right skylight	33.50
370	Cessna 170	Left or Right rear	38.00
374		Left or Right door	52.00
362	Cessna 180	Left or Right rear	31.50
369		Left or Right door	62.50
006	J-3	Skylight	34.95
008		Left front triangle	23.95
009		Left pilot sliding	34.95
010		Left rear	33.95
011		Right rear	27.95
012		Right door	45.95
436	PA-12	Left front (sliding)	28.00
437		Left rear	29.00
438		Door	28.00
439		Right rear	24.50
015	PA-16,20	Right door	31.95
016		Right rear	17.95
021		Left front stationary	27.95
017		Left front sliding	27.00
019		Left rear door	17.95
465	PA-18	Right door	47.75
466		Right or Left rear	24.50
467		Rear sliding	36.50
468		Front sliding (left)	36.50
469		Left pilot	22.95
020	Late PA-20	Left or Right square (rear)	22.95
021		Left front pilot	26.95
023		pilot-vented	13.00

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 P/N 05-99100 \$22.90/rll
 Felt – Adhesive-backed 3/32"x1-1/2"P/N 05-99110....\$0.66/ft
 Compass Mt for Glareshield Installations (Acrylic)P/N 05-99120\$30.00/ea

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"	\$395.00
Acroduster II	1/8"	795.00
Acrosport (29" or 34" long)	1/8"	395.00
Barracuda	3/16"	995.00
Berkut	1/8"	895.00
Cassutt Standard (flat wrap)	1/8"	275.00
Cozy Mark IV Canopy	1/8"	537.00
Cozy Mark IV Window Set	1/8"	244.00
Cozy Canopy	1/8"	480.00
Cozy Window Set	1/8"	244.00
EAA Biplane (single seat) (29" or 34" long)	1/8"	395.00
E-Racer	3/16"	795.00
Emeraude	3/16"	1095.00
GP-4	3/16"	995.00
KR-1	.080	295.00
KR-2	1/8"	395.00
KR-2 (Super Canopy)	1/8"	650.00
Long-EZ	1/8"	795.00
Moni/monerai	.080	760.00
Mustang II	3/16"	995.00
Osprey II Standard Canopy w/o rear windows	1/8"	480.00
Osprey II Bubble Canopy w/rear windows	1/8"	1150.00
Osprey II Rear Window set	1/8"	195.00
Pitts S-1 (bubble style, not factory Pitts)	1/8"	395.00
Quickie (Q1)	.080	395.00
Quickie 2 (Q2)	3/16"	675.00
RV-3	1/8"	495.00
RV-4	1/8"	795.00
Skybolt (rear seat) (29" or 34" long)	1/8"	395.00
Skybolt (full canopy)	1/8"	795.00
Sonerai I	1/8"	295.00
Sonerai II	1/8"	595.00
Sonerai II (extra visibility "big" canopy)	1/8"	795.00
Starduster I	1/8"	495.00
Starduster II	1/8"	895.00
Starduster II (rear seat only)	1/8"	495.00
T-18 (Standard and Widebody Canopy)	3/16"	995.00
T-18 Windshield	3/16"	240.00
VP-1	1/8"	795.00
VP-2	1/8"	795.00
Vari-Eze	1/8"	795.00

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	\$400.00	05-01146	\$450.00
Berkut	05-01147	\$450.00	05-01148	\$500.00
Cozy III	05-01149	\$400.00	05-01151	\$500.00
Cozy Mark IV	05-00437	\$450.00	05-00438	\$600.00
ERacer	05-01152	\$375.00	05-01153	\$425.00
Long EZ	05-00439	\$450.00	05-00440	\$600.00
Varieze	05-01154	\$350.00	05-01155	\$400.00
Christian Eagle	05-01156	\$400.00	05-01157	\$450.00
Harmon Rocket	05-01158	\$425.00	05-01159	\$475.00
KR2S	05-01160	\$375.00	05-01161	\$425.00
Osprey	05-01162	\$375.00	05-01163	\$425.00
RV-3	05-01164	\$350.00	05-01165	\$425.00
RV-4	05-01166	\$402.95	05-01167	\$350.00
RV-8	05-01168	\$350.00	05-01169	\$425.00
Zenair CH601	05-01170	\$350.00	05-01171	\$400.00

AP

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 warranties 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 500, 520, 560, 680 Right	\$183.00 \$183.00	172 (S/N50573 to 72884) 180,182 (S/N52556 to 53598)	\$365.00 \$393.00	Piper J-3 Cub	\$158.00
Aero Commander 100 Darter-Lark Volaire 10 or Volaire 10A	\$373.00	182 (S/N 53599 to 55844) 182 (S/N 55845 to 64296)	\$400.00 \$450.00	PA-12 square top (late model)	\$261.00
Aeronca Citabria	\$260.00	205, 206, U206, P206	\$400.00	PA-12 square top (early model)	\$282.00
Aeronca Chief	\$299.00	207	\$460.00	PA-15/16/17/22 108 colt bubble	\$285.00*
Beechcraft Musketeer, Sundowner, Sierra, Sport (.125)	\$338.00	210 (S/N 58716 to 58818)	\$454.00	Apache 23 (S/N 1502 & up) RorL	\$250/side
Musketeer, Sundowner, Sierra, Sport (.187)	\$391.00	Ercoupe - Fornair (bubble type w/s)	\$245.00	Pawnee 25 (S/N 656 & up)	\$130.00
Bonanza 33/35, 2pc w/s (per side)	\$178.00	Grumman - AA1, AA1A, AA1B	\$302.00	Cherokee PA-28 (.125) RorL	\$142./side
Bonanza 33/35/36/55/58/95 1pc w/s (must check s/n carefully)	\$500.00	Grumman Canopy-AA1,AA1A,AA1B	\$328.00	Cherokee PA-28 (.250) RorL	\$172./side
Bellanca Cruisemaster models 14-19, 14-19-2, 14-19-3	\$367.00	Luscombe 8 series	\$230.00	Stinson HW-75 2pc	\$176./side
Viking, Super Viking 14-19-3A, 17-30 17-30A, 17-31A, 17-31ATC	\$296.00	Mooney M20, M20a/b/c/d/e prior to 1965 (2pc w/s)	\$176.00 per side	Stinson Voyager108, 108-1/2/3 2pc w/s	\$171./side
Cessna 120-140 (S/N 8800 & up) 140A, 150, 152 152	\$251.00 \$251.00 \$281.00	Mark21,M20c,Super21,M20e,Master M20d, Executive21 M20f, after 1965	\$118.00 per side	Taylorcraft BC-12D, 1946 & up	\$229.00
		Ranger M20c, Chaparral M20e, Executive M20f, Statesman M20g	\$230.00	Taylorcraft B 1940-41	\$229.00
		Navion A/B/D/E/F Std. or flush type (2pc w/s)	\$137.00 per side	Yak 52 Windshield (4 sections) *all windows available canopy, side windows, center fixed, aft siding, rear fixed	\$395.00
		Navion Rangemaster G&H 2pc w/s	\$137.00	Yak CJ69 (*all windows available canopy, fwd sliding,center fixed,aft siding,rear fixed)	\$360.00

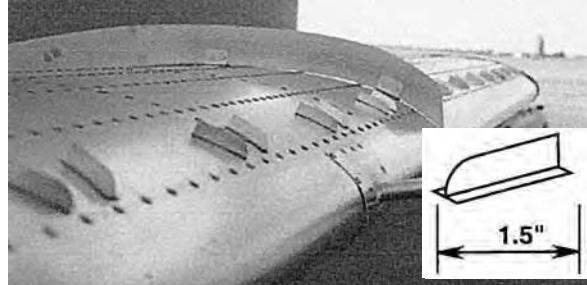
Call for pricing on unlisted windshields & windows.

*Plus boxing charge

AP

MICRO VORTEX GENERATOR KITS

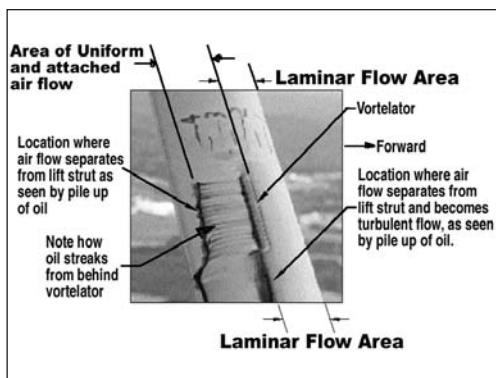
Micro Vortex Generators from Micro Aerodynamics, Inc. are available for a wide range of aircraft and can reduce stall speed, improve aileron response, improve cross wind control, and reduce landing and takeoff roll. The kits consist of vortex generators mounted on the wings, the horizontal stabilizer, 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 \$100 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 310J	05-00602	\$1,950.00	PIPER TWINS - Aztec PA-23-250	05-00633	\$1,733.50
310K thru 310Q	05-00603	\$1,950.00	Geronimo PA-23-180	05-00634	\$1,733.50
310R thru T310R	05-00604	\$2,177.95	Twin Comanche PA-30, PA-39	05-00635	\$1,733.50
320B/C/D/E/F	05-00605	\$1,733.50	Seminole PA-44-180, PA-44-180T	05-00636	\$1,733.50
340A, 340, 335	05-00606	\$2,622.50	Chieftain J2B Conversion kit	05-00637	\$695.00
401, 401A, 401B	05-00607	\$1,733.50			
402, 402A, 402B	05-00608	\$1,733.50	PIPER SINGLES - PA-18 Super Cub	05-00638	\$695.00
402C	05-00609	\$2,622.50	PA-12 Family Cruiser	05-00639	\$695.00
411, 411A	05-00610	\$2,177.95	J-3/PA-11 Cub	05-00640	\$655.00
414	05-00611	\$1,733.50	PA-22, PA-20 Pacer	05-00641	\$655.00
414A, 414AW	05-00613	\$2,622.50	PA-28 Cherokee (hershey bar wing)	05-00642	\$1,288.95
421, 421A	05-00614	\$1,733.50	Cherokee Six	05-00938	\$1,288.95
421B, 421C	05-00615	\$2,622.50	Lance	05-00939	\$1,450.00
CESSNA SINGLES - 170A, 170B	05-00616	\$1,288.95	AVIAT - Husky A-1, A-1A, A-1B	05-00643	\$655.00
180, 185 Series	05-00617	\$1,288.95			
172, 175, 182 Series	05-00618	\$1,288.95	AMERICAN CHAMPION		
206 Series	05-00619	\$1,288.95	7AC,7ACA,7BCM, 7CCM, 7DC, 7EC		
210G-N, T210G-N, P210N	05-00620	\$1,288.95	7ECA, 7FC, 7GC, 7GCA, 7GCAA,	05-00644	\$655.00
BEECHCRAFT - Baron 55 A/B/C/D/E	05-00621	\$2,177.95	7GCB, 7GCBA, 7GCBC, 7HC, 7JC,		
Baron 56TC	05-00622	\$2,177.95	7KC, 7KCB, 8KCAB, 8GCBC		
Baron 58	05-00623	\$2,177.95			
Baron 58TC, 58P	05-00624	\$2,177.95	MAULE - M-4, M-5, M-6, M-7	05-00645	\$655.00
Baron55 Upgrade kit (w/ older VG system)	05-00625	\$895.00	MT-7, MX-7, MXT-7, M-8		
Duke 60, A60, B60	05-00626	\$1,950.00	COMMANDER - Rockwell 112,114,115	05-00646	\$1,450.00
Musketeer(A19A,B19,M19A,23,A23, A23-19,A23-24,B 23,C23,A24,A24R, B24R,C24R)	05-02149	\$1,450.00	TAYLORCRAFT	05-01208	\$655.00
Twin Bonanza	05-00627	\$1,733.50	LAKE LA-4,LA-4A,LA-4P,LA-4200, 250	05-00647	\$1,733.50
Travel Air	05-00628	\$1,733.50	KIT PLANES* - Generic VG kit	05-00001	\$395.00
Bonanza 35	05-00629	\$1,288.95			
Bonanza 33, 36, A36, A36TC	05-00630	\$1,288.95	AGRICULTURAL		
Bonanza B36TC	05-00631	\$1,288.95	Air Tractor, Ayres Thrush, Brave, Cessna 188, Dromader, Weatherly	05-00648	\$1,288.95

VORTELATOR KITS

VORTELATOR KITS FOR CESSNAS AND HOMEBUILT AIRCRAFT



These vortex kits can increase Cessna and Homebuilt speeds by up to 7.5 MPH. This is accomplished by placing vortelators at certain critical locations which 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 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. Figure 1 shows the flow of black motor oil on a Cessna lift strut with, a short strip of vortelator attached, during a flight test. Notice that 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 at approximately 40% of the lift strut's chord, as can be seen from the pile up of oil at the 40% chord position. Here the lift strut is 2.01" thick, and at the 80% chord position the lift strut is 1.18" thick. That means the 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 246-100 is FAA approved for the following Cessna aircraft: 140A, all models of 150, all models of A150, all models of 152, all models of A152, 170A&B, all models of 172 (USAF T-41A), P172D, R172E (USAF T-41B), and (USAF T-41C & D), R172F (USAF T-41D), R172G (USAF T-41C & D), R172H (USAF T-41D), R172J, R172K (known as 172XP, 172RG, all models of 75, 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. The vortelator kit 254-2/AD contains a 100 ft. roll of vortelator, more than enough for most homebuilts, plus clear instructions with pictures on how to determine where to, and how to, place the vortelators to increase your aircraft's speed.

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 at 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\$10.00

Model No.	Part No.	Description	Price	Model No.	Part No.	Description	Price
246-100	08-00731	FAA approved kit for Cessnas	\$658.00	254-RV7/7a	05-00855	Kit for RV-7/7A	\$219.00
254-AD	05-00851	Generic kit for Homebuilts	\$219.00	254-RV8/8a	05-00856	Kit for RV-8/8A	\$219.00
254-RV3	05-00852	Kit for RV-3	\$219.00	254-La ncair	05-00857	Kit for Lancair	\$219.00
254-RV4	05-00853	Kit for RV-4	\$219.00	254-T18	05-00858	Kit for T-18	\$219.00
254-RV6/6A	05-00854	Kit for RV-6/6A	\$219.00				

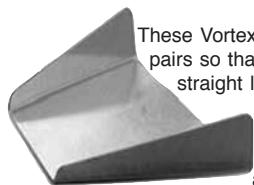
PROPELLER VORTELATOR KITS

These vortelator propeller kits are 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. These vortelator kits are FAA STC'd and manufactured under a FAA PMA. Virtually all propellers that are attached to engines of less than 500 HP be they metal, composite, or wood are approved for the installation of vortelator kits. This kit is not recommended for propellers that are equipped with anti-icing devices. Propeller Kit 260-100 contains a three foot strip of vortelator, more than enough to vortelate up to a three bladed propeller. Plus clear instructions with pictures on where to place the vortelators on the propeller. The vortelator kit weighs less than .05 ounces and takes less than a half hour to install. The vortelators have a pressure sensitive adhesive backing so the installation process is simply to clean the area of the propeller where the vortelators will be placed and stick them on to the propeller. It's that simple

Ultralight Prop Vortelator Kit.....P/N 05-01465\$23.95
Homebuilt Prop Vortelator Kit.....P/N 05-01466\$23.95
Certified Prop Vortelator KitP/N 05-01467\$89.50

HALL BROTHERS VORTEX GENERATORS FOR HOMEBUILT

These Vortex Generators were designed and tested in a wind tunnel as well as on various experimental aircraft. They are formed in pairs so that the shape and angles are built right in. This makes them easier to install as they only need to be spaced out along a straight line. Also, they 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. Hall Brothers Vortex Generators are not just used for lowering the stall speed. the stall characteristics are usually 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 and stabilizer (46 pairs), tape for temporary attachment, adhesive for permanent attachment and instructions.P/N 05-01480\$186.25



VORTEX GENERATOR KITS FOR HOMEBUILT AIRCRAFT

Kits 261-(XXX) are STOL kits. STOL stands for Short Takeoff and Landing. Kit 261-(XXX) consists of a series of vortex generators placed on the aircraft in such fashion so as to reduce the stalling speed of the aircraft. In reducing the stalling speed of the aircraft slower landing approach speeds and shorter takeoff and landing distances are possible. Kits 254-(XXX) increase the speed of the aircraft and kits 261-(XXX) reduce the stalling speed of the aircraft. One would not want to install both airframe kits on the same airplane as the STOL kit would reduce effectiveness of the vortelator kit. However, propeller vortelator kits are compatible with STOL kits.

261-AD1 Dex gen. vortex generator kit for homebuilt aircraft	05-01776	\$375.00	261-AD2 Gen. vortex generator kit for homebuilt aircraft	05-01780	\$168.95
261-RV1 Vortex generator kit for RV-3 aircraft	05-01777	\$225.00	261-RV1 Vortex generator kit for RV-4 aircraft	05-01777	\$225.00
261-RV1 Vortex generator kit for RV-6/6A aircraft	05-01777	\$225.00	261-RV1 Vortex generator kit for RV-3 7/7A aircraft	05-01777	\$225.00
261-RV1 Vortex gen. kit for RV-8/A aircraft	05-01777	\$225.00			

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AIR VENTS



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.

Model 2230-1P/N 13-03600\$176.50



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 13-00833\$14.50



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 vent is 2.75" and the vent is designed to attach with a standard 2" air duct flange. 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 - BlackP/N 05-00779\$56.50

Eyeball Swivel Vent - GreyP/N 05-00787\$56.50



PLASTIC EYEBALL AIR VENTS

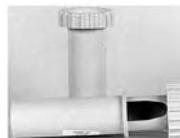
These ball and socket air vents are injection molded T grade ABS. The vent orifice is 1" dia., and the ball swivels 45°. The mounting flange is 2-1/8" square, and the distance between mounting hold centers is 1-11/16". Mounts in 1.75" dia. hole & uses 1-3/4" ducting. Wt: 1.25 oz. ea.

GrayP/N 13-02900\$17.95

White....P/N 13-01943..\$17.95

BlackP/N 13-02901 ..\$17.95

Beige....P/N 13-02902..\$17.95



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 13-03555\$68.50/pr.



AIRFLOW ENHANCEMENT KIT

The Airflow Enhancement Kit improves the cabin airflow in General Aviation aircraft, specifically Cessnas. The objectives of the Airflow Enhancement Kit combined with Ventubes are to 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 13-01925\$49.95

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 13-01857\$1,426.00

Pilot & Co-Pilot.....P/N 13-04500\$416.95

Center Vents (total of 2 units)P/N 13-01858\$395.00

Rear Vents (total of 2 units)P/N 13-01859\$825.00



AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

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LARGE ALUMINUM EYEBALL AIR VENTS



Aluminum airline style 'eyeball' air vent. Clear anodized 6061 weighs just 5oz. and mounts in a 2.75' hole. The mounting flange is 3" square with a 2.5" screw pattern. This is a direct replacement for the plastic "Whisperflo" vent.

ClearAnodizeP/N 13-02188\$176.50

BlackP/N 13-02189\$156.50

VISTA-VENTS

Knob adjustment permits complete control of cabin air. Mounts at four points in 2-1/2" dia. hole.

P/N 13-03500\$16.30



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 13-03750\$57.25

"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.

BlackP/N 13-03800\$14.95

IvoryP/N 13-03700\$15.95/ea.



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 08-00052\$111.95

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 A-2-100 \$10.80/pr.



MODEL CC3251 Mounts in 3 1/4" dia. opening. Rotates to provide any degree of ventilation. Retracts to a closed position nearly flush with the mounting surface.

P/N CC3251\$11.80/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 F325A\$23.40/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 F318\$12.70/pr.

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 consists 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 outside cover 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.

StandardP/N 13-02059\$129.95

For Cessnas with ventubesP/N 13-03579\$168.95



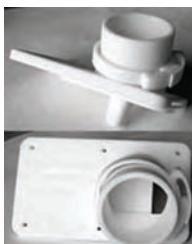
KOOL SCOOP VENTS

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.**P/N 13-03810\$28.65

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

NACA INLETS - 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.....\$176.50



LARGE ROUND VENT

Fits in a 2-3/4" hole, and has a 3" outside flange diameter.

(BLACK) P/N 13-04084.....\$176.50
(CLEAR) P/N 13-04085.....\$176.50

ROUND ALUMINUM EYEBALL AIR VENT (SMALL)



Made from 6061 aluminum and anodized these vents are made to give long trouble free service. The mounting flange is 2.25" round with a mounting hole of 2.0". The vent comes with a hose adapter that screws to the back of the vent, securing it in place. This hose adapter allows you to connect a 2 inch hose directly to it. The air flows through a 1.2" hole allowing this vent flow more than most "small vents."

(CLEAR) P/N 05-01903.....\$176.50
(BLACK) P/N 05-01904.....\$176.50

SQUARE ALUMINUM EYEBALL AIR VENT (SMALL)



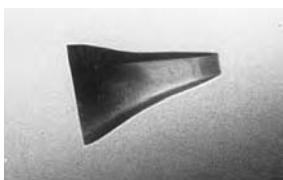
Made from 6061 aluminum and anodized these vents are made to give long trouble free service. The mounting flange is 2.2" square with a mounting hole pattern of 1.70". The air flows through a 1.2" hole allowing this vent flow more than most "small vents."

(CLEAR) P/N 05-01905.....\$176.50
(BLACK) P/N 05-01906.....\$176.50

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LOW PRICE GUARANTEE

WE WILL MATCH ANY COMPETITOR'S CURRENT PRICE.
IF YOU FIND A LOWER PRICE, PLEASE TELL US.



NACA INLETS



NACA INLETS

These Naca Inlets come in easy-to-assemble kit form with "How To" installation instructions or pre-assembled.

KITS - Round Outlet

1"	P/N 05-00576	\$28.50	1-1/2"	P/N 05-22700	\$34.95
2"	P/N 05-01778	\$36.95	3"	P/N 05-22800	\$39.95
4"	P/N 05-00577	\$69.95			

PRE-ASSEMBLED INLETS

Round Outlet, 2"	P/N 05-00578	\$78.95
Round Outlet, 3"	P/N 05-00579	\$79.95

AIR INLET KITS

These Air Inlet Kits, once installed, supply an adjustable source of inlet air to the cabin of a homebuilt aircraft. Available manufactured from fiberglass, ABS plastic, or polycarbonate clear plastic, these Air Inlet Kits are easy to assemble and install. The kits will not deteriorate with age. Kits include the components, hardware, & assembly instructions.

White Fiberglass Air Inlet Kit	P/N 05-00774	\$55.25
Black ABS Plastic Air Inlet Kit	P/N 05-01445	\$56.70
Clear Polycarbonate Air Inlet Kit	P/N 05-01446	\$89.95

NACA SCOOPS

These NACA Scoops are assembled & available in clear or opaque.

CLEAR	OPAQUE
3" P/N 05-01421	\$49.70
2" P/N 05-01422	\$39.75
1" P/N 05-01423	\$24.85
3" ..P/N 05-01424	\$45.45
2" ..P/N 05-01425	\$35.50
1" ..P/N 05-01426	\$21.30

AIR INLET REPAIR KIT

Anyone who has installed a plastic adjustable air inlet kit may have experienced a failure of the operation mechanism that opens and closes the inlet. Damage to the mechanism generally severely limits the operation of the inlet. This repair kit allows the replacement of the opening mechanism and restores the inlet operation to its original intention. We offer a family of NACA Air Inlet Kits manufactured from fiberglass, ABS, or acrylic. The operating mechanism components and assembly instructions provided in these complete kits are included in this repair kit. 2 sheets per package.

P/N 05-01464\$10.95

DOOR LATCHES-CANOPY LOCK-FLAP ACTUATOR

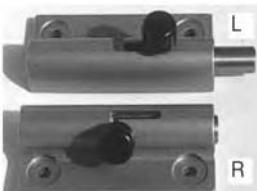
UNIVERSAL SPRING LOADED LATCHES



Left hand latch (Lock Pin)
Right hand latch (Lock Pin)

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.

P/N 05-04520\$29.40
P/N 05-04521\$29.40

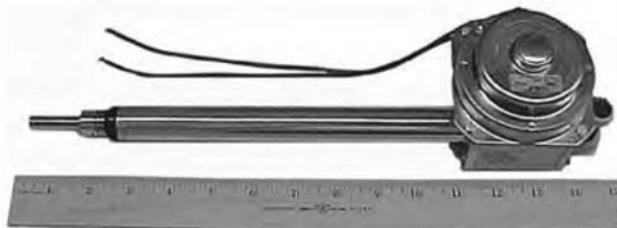


Also available in retracted bolt lock type latch with blunt striker (left hand and right hand).

Left hand latch (Retracted Bolt Lock)
P/N 05-00895\$35.00
Right hand latch (Retracted Bolt Lock)
P/N 05-00896\$35.00

AP

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 actuatorP/N 05-66223\$761.00
24 volt actuatorP/N 05-66224\$794.00



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.

P/N 05-66225\$162.95

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\$17.60

EXPERIMENTAL AIRCRAFT DOOR LATCH



3D view Opening from Exterior
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.



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"

2024T3P/N 03-00104\$2.90

Left Hand Door LatchP/N 05-01415\$285.00

Right Hand Door LatchP/N 05-01416\$285.00

Set of Left/Right LatchesP/N 05-01420\$570.00

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 else's aircraft.

P/N 05-01414\$99.00

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™** consists 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 situations.

- 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 than 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. New versions for Cessna 177, Beechcraft and Piper aircraft are pending.

Left Hand KitP/N 05-00920\$159.00

Right Hand KitP/N 05-00921\$159.00

Both Kits for One AircraftP/N 05-00922\$318.00

FIBERGLASS PARTS - COWLING KITS

RAVEN FIBERGLASS PARTS

Raven Fiberglass parts are made to very high standards with reinforcing where necessary.



Upper Wing Cabane Faring for Pitts S-1

Will fit S-1 and any aircraft with similar symmetrical wing.

P/N 05-00908\$90.25



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\$255.00

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\$175.00



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\$225.00



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\$425.00

For Experimental S-2, Eagle, Skybolt P/N 05-00919\$485.00



Spades

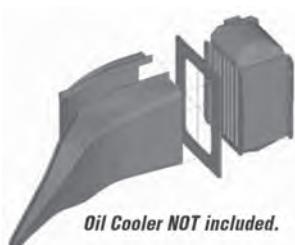
Spades used on aerobatic aircraft like Pitts Special. Comes with arm and plate P/N 05-00917\$125.00

AP

VANS RV COWLING MOUNT KITS



PART NUMBER	AIRCRAFT	DESCRIPTION	PRICE
04-00399	Vans RV4 - Complete Kit	Collared Slotted 33 Fasteners	\$389.95
04-00403	Vans RV4 - Complete Kit	Phillips	\$391.95
04-00405	Vans RV4 - Firewall Kit	Collared Slotted 15 Fasteners	\$164.95
04-00406	Vans RV4 - Firewall Kit	Phillips	\$165.95
04-00407	Vans RV4 - Side Kit	Collared Slotted 18 Fasteners	\$162.00
04-00408	Vans RV4 - Side Kit	Phillips	\$227.95
04-00409	Vans RV8 - Complete Kit	Collared Slotted 46 Fasteners	\$514.00
04-00410	Vans RV8 - Complete Kit	Phillips	\$520.00
04-00411	Vans RV8 - Firewall Kit	Collared Slotted 26 Fasteners	\$269.95
04-00412	Vans RV8 - Firewall Kit	Phillips	\$272.95
04-00413	Vans RV8 - Side Kit	Collared Slotted 20 Fasteners	\$244.95
04-00415	Vans RV8 - Side Kit	Phillips	\$247.95
04-00417	Vans RV6,7,910 - Complete Kit	Collard Slotted 48 Fasteners	\$534.00
04-00418	Vans RV6,7,910 - Complete Kit	Phillips	\$537.00
04-00419	Vans RV6,7,910 - Firewall Kit	Collard Slotted 26 Fasteners	\$289.95
04-00420	Vans RV6,7,910 - Firewall Kit	Phillips	\$292.95
04-00421	Vans RV6,7,910 - Side Kit	Collard Slotted 20 Fasteners	\$244.95
04-00422	Vans RV6,7,910 - Side Kit	Phillips	\$246.95
04-00423	Lancair - Complete Kit	Collared Slotted 57 Fasteners	\$567.00
04-00424	Lancair - Complete Kit	Phillips	\$580.00
04-00425	Lancair - Firewall Kit	Collared Slotted 37 Fasteners	\$408.95
04-00427	Lancair - Firewall Kit	Phillips	\$362.95
04-00429	Lancair - Side Kit	Collared Slotted 20 Fasteners	\$246.95
04-00430	Lancair - Side Kit	Phillips	\$246.95



Oil Cooler NOT included.

OIL COOLER INLET KIT

This oil cooler inlet kit efficiently provides engine oil cooling. This kit enables cooling air to be directed exclusively to the oil cooler allowing maximum effectiveness from the net's outside air. No longer will preheat engine cooling air be used for cooling oil. Aircraft owners desiring to reduce the engine oil temperature (and having dedicated room in the cowling) can easily install the Oil Cooler Inlet Kit. The inlet scoop mounts directly to the oil cooler itself insuring maximum cooling efficiency. Two additional kits are available to complement the Oil Cooler Inlet Kit. The Oil Collet CamLoc™ Kit provides CamLoc™ fasteners and seals to allow easy de-coupling of the inlet for removal of the cowl. The Cabin Heater Box Kit provides cabin heat and is attached to the downstream side of the oil cooler.

Oil Cooler Inlet Kit.....P/N 05-01805.....\$89.95

Oil Cooler CamLoc™ KitP/N 05-01806.....\$39.95

Cabin Heater Box KitP/N 05-01807.....\$169.95

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.



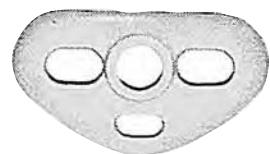
MC-1A NOSE COWL

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 MC-1A \$72.50



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 MC-1B \$72.50



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 MC-2 \$81.75



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 Falconer F-11 & 12 series. Measures 35-1/2" wide and 22-1/2" high. Center opening 8-1/2" dia. P/N MC-3A \$90.75



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 MC-3B \$89.50



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 MC-10 \$1,985.00



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 MC-3C \$95.50



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 \$91.25



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 MC-7 \$158.95



FLUSH LATCH

The Hartwell H-5000-2 is a unique spring-loaded, trigger action latch for cowling and access doors. Made of corrosion resistant steel. Rivet or spot weld to structure. P/N H-5000-2 \$64.25

SURPLUS H-5000-2 LATCHES P/N 05-01017 \$16.85

SURPLUS H-5100-2 LATCHES P/N 05-01113 \$9.95

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 chromate finish. Order strikes separately.

Part No.	Description Dimensions (closed)	Latch to Line	Price Ea.
TL800G	Model 1 latch	Not Applicable	\$2.35
TL800-5	Strike	1.65 Inch	\$0.38
TL800-7	Strike	.90 inch	\$0.57



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 chromate finish. Order strikes separately.

Part No.	Description Dimensions (closed)	Latch to Line	Price Ea.
TL803B	Model 2 latch	Not Applicable	\$1.95
TL800-5	Strike	1.34 Inch	\$0.38
TL800-7	Strike	.59 inch	\$0.57



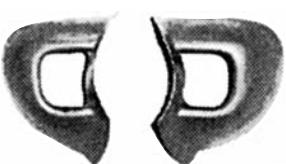
BONANZA NOSE GEAR BRACE

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 \$9.95

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.

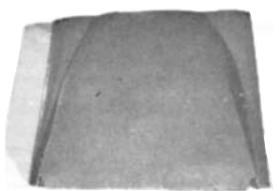
P/N MC-6 \$58.50



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 MT-1 \$143.95



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 \$77.25



CARBURETOR INTAKE SCOOP

Carburetor intake scoop with 4-1/4" x 8" rectangular opening.

P/N 05-22500 \$38.00



HEAD REST

Originally designed for the Smith Miniplane but can be used on other bipes.

P/N 05-22100 \$24.20



SLIDING CANOPY RAILS

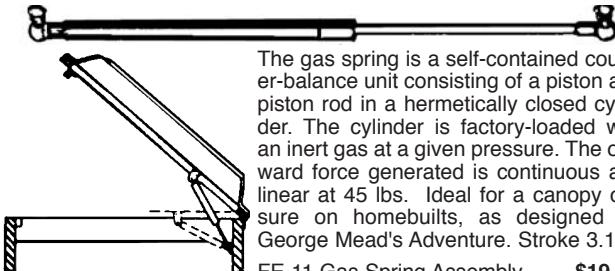
2 heavy-duty channels of 2014T6 anodized aluminum provide smooth sliding tracks for canopy installations. Length 23" fully retracted, 45" fully extended. 22" travel. Wt:3.5 lbs./pair. Used on Pazmany 1 & 2, Skybolts & others.

P/N 03-49300 ..\$525.00/pr



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.

THE GAS SPRING



The gas spring is a self-contained counter-balance 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 Mead's Adventure. Stroke 3.15".
FE-11 Gas Spring Assembly \$19.38

DISCOUNTS: 10% ON 6, 15% ON 12, 20% ON 50



BUCKET SEATS

For Starduster or Skybolt. Black pebble 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.

P/N 05-22600.....\$69.00



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.....\$124.95

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.

AP



Cherokee Straight Wing Tips

PA-28 140 thru 200R models.
P/N 05-90000 \$635.00 pr.



Cherokee Taper Wing Tips

PA-28 151 thru 236 models
P/N 05-91000 \$506.00 pr.



Cessna Wing Tips

140A, 150, 170B, 172, 175, 180, 182, 185, 210 (pre 1974 models only)
P/N 05-94000 \$515.00 pr.



Comanche Wing Tips

All singles and PA-30 twins.
P/N 05-92000 \$545.00 pr.



Cherokee Stabilator Tips

PA-28 taper and straight wings
P/N 05-93000 \$307.95 pr.



Bonanza Wing Tips

35 series thru P models
P/N 05-95000 \$689.00 pr.

Other Products:

Aztec & Apache Wing Tips (PA-23 all models) ..	P/N 05-96000 ..	\$1,420.00 pr.
Apache Dorsal Fin (PA-23 150&160) ..	P/N 05-97000 ..	\$565.00 pr.
Beech Wing Tips.....	P/N 05-00769.....	\$495.00/pr.
Piper Tailcone (PA-28 & PA-32) ..	P/N 05-98000 ..	Call for Price
Piper Dorsal Fin (PA-28 & PA-32) ..	P/N 05-99000 ..	Call for Price
Cherokee Taper Wing Tips C/W Replacement ..	P/N 05-02599 ..	\$1,420.00 pr.
Cherokee Dorsal Fin Fwd.	P/N 05-02601 ..	\$565.00
Cherokee Dorsal Fin Aft.	P/N 05-02602 ..	\$495.00
Cherokee Tail Cone Upper ..	P/N 05-02603 ..	\$1,420.00
Cherokee Tail Cone Lower ..	P/N 05-02604 ..	\$565.00
Cessna Wing Tips.....	P/N 05-02605 ..	\$565.00 pr.
Aztec/Apache Tip Tanks Hoerner Style ..	P/N 05-02606 ..	\$495.00/pr.
Apache Windshield ..	P/N 05-02607 ..	\$1,420.00
Seneca Wing Tips.....	P/N 05-02608 ..	\$565.00 pr.
Seneca Stabilator Tips ..	P/N 05-02609 ..	\$495.00/pr.

WHEEL FAIRINGS

All wheel fairings furnished with reinforcing bulkheads for added stability and cleanliness. The 5.00 x 5 size is available without bulkheads to minimize weight for racing.

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 home-built that requires this size.
P/N MF-1A \$163.95 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 15-1/2)L
P/N MF-2..\$163.95 Pair



MF-3 - 5:00 X 5 with the long, narrow profile. A standard on Pitts Specials, Acro Sport, T-1 8, Cassutt & Midget Mustang. Truly a universal shape. Overall size: 39)L x 7.5"W
Opening Size: 4-3/4"W x 10-1/2)L
P/N MF-3..\$163.95 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 MF-4..\$163.95 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 MF-5..\$163.95 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 MF-6..\$163.95 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 MF-7..\$163.95 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 MF-8..\$163.95 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 10-1/2"W
Opening Size: 8-1/4"Wx10)L
P/N MF-9..\$163.95 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"W x 10)L
P/N MF-10\$163.95 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 MF-11\$163.95 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 MF-12\$163.95 Pair

CESSNA

(FAA/PMA APPROVED)



HORIZONTAL STABILIZER ADJUSTING SCREW AND BARREL

For C-180, 185 and C-182 thru C-182D
ScrewP/N 05-07000\$230.95
BarrelP/N 05-07005\$74.25



HORIZONTAL STABILIZER ADJUSTING CAM

CamP/N 05-07010\$27.00



STABILIZER TRIM SCREW BOOT

For C-180, C-185, and C-182 thru C-182D
BootP/N 05-07015\$49.50



C-120, C-140 LIFT STRUT ROD ENDS

Front Rod EndP/N 05-07020\$75.50
Rear Rod EndP/N 05-07025\$61.25



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\$186.95



C-180, 182, & 185 SERIES COWL OIL DOOR

Applicable on the following models:
For 180—180G, 182—182G & 185—185C
P/N 05-07035\$270.44



CESSNA AILERON HINGE
For all C-150, 152, 170A, 170B, 172, 180, 182 & 185
P/N 05-07040\$46.00



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\$12.75

C-170 TAILWHEEL SPRINGS



Tailwheel Spring AssemblyP/N 06-15000\$167.95
Main Leaf OnlyP/N 06-15100\$71.00

C-120/140 TAILWHEEL SPRING SETS

(later Cessna spring set shown)

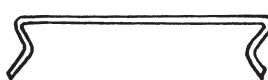


Early 120-140 (single bend, originally on SN 8001-14026)
P/N 05-07055\$116.95
120-140 (SN 14027 and up)P/N 06-14800\$146.95
120-140 main leaf only (SN 8001-14026) ..P/N 05-07065\$43.30
120-140 main leaf only (SN 14072 & up) ..P/N 06-14900\$51.85



RUDDER BELLCRANK

For C-120, 140 & 170
P/N 05-07075\$239.95



WING FABRIC CLIP FOR C-120/140/170

P/N 09-19900\$0.54



RUDDER & ELEVATOR SKINS

For C-180/185, & 182-182D / FAA-PMA

ELEVATOR KIT:

Top/Bottom Right & Left P/N
P/N 05-00891\$333.90

RUDDER (for all C-180, 185, 182-182B):
Right handP/N 05-07090\$139.95
Left handP/N 05-07095\$139.95

ALL METAL COWLING PARTS



1946 Cowling Items

Lower Cowl Skin, Left ..P/N 05-07165\$789.00
Lower Cowl Skin, Right P/N 05-07170\$898.00
Nose Cowl OnlyP/N 05-07175\$598.00

C-120/140 COWL GRILLS



Left Hand Cowl Grill
P/N 05-07180\$149.00

Right Hand Cowl Grill
P/N 05-07185\$149.00

Also approved for 170, 170A and 170B through S/N 25372



C-120/140 ENGINE MOUNT ASSEMBLY

120-140P/N 05-07190\$640.00
140AP/N 05-07195\$929.00

AP

CESSNA

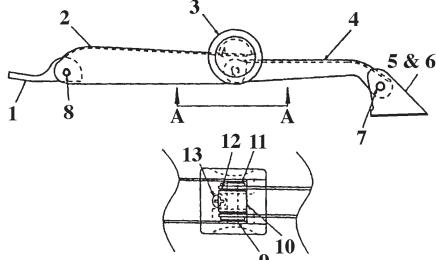
(FAA/PMA APPROVED)



150 Spinner Assembly

170B & 172 Assembly

LEVER TYPE WINDOW LATCHES & COMPONENT PARTS

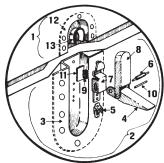


Latch Assembly Applicable on: 120, 140, 140A, 170, 170A, 170B, (SN 20267 thru 25372) P/N 05-07100\$237.95

Latch Assembly Applicable on: 170B (SN 25373 & on), 172, 175, 180 & 182 P/N 05-07105\$239.95

COMPONENT PARTS

1) Arm (for -2 assy.)	P/N 05-07110	\$29.80
Arm (for -3 assy.)	P/N 05-07115	\$29.80
2) Bracket	P/N 05-07120	\$49.40
3) Knob	P/N 05-07125	\$14.40
4) Extension Arm	P/N 05-07130	\$49.80
5) Angle (left side)	P/N 05-07135	\$5.85
6) Angle (right side)	P/N 05-07140	\$5.30
7) Pin	P/N 05-07145	\$13.40
8) Pin	P/N 05-07150	\$13.50
9) Pin	P/N 05-07155	\$13.00
10) Spacer	P/N 05-07160	\$6.60
11) Washer (2 req'd)	P/N AN960-10	\$0.03
12) Washer (2 req'd)	P/N AN960-10L	\$0.03
13) Screw	P/N THA4-6	\$0.18



COWL LATCHES AND DETAILS

For 120-140 and 170 series

Hook & Lever Assemblies

1) Hook Assembly	P/N 05-07200	\$67.50
2) Lever Assembly	P/N 05-07205	\$226.95

Detail Parts

3) Recess	P/N 05-07210	\$29.30
4) Lever	P/N 05-07215	\$19.00
5) Clip	P/N 05-07220	\$17.50
6) Pin	P/N 05-07225	\$10.30
7) Housing	P/N 05-07230	\$19.50
8) Hook	P/N 05-07235	\$24.70
9) Spring	P/N 05-07240	\$14.60
10) Pin	P/N 05-07245	\$8.70
11) Shim	P/N 05-07250	\$1.39
12) Recess	P/N 05-07255	\$36.50
13) Hook	P/N 05-07260	\$35.80

150 SPINNER ASS'Y (THROUGH CESSNA 150 MODEL K ONLY)

Spinner Dome	P/N 05-09030	\$269.95
Front Plate (original Cessna)	P/N 05-09035	\$67.50
Rear Plate	P/N 05-09040	\$252.95

170B & 172 1956 thru 1959 SPINNER ASS'Y.

Spinner Bulkhead	P/N 05-07265	\$227.95
Spinner Dome	P/N 05-07270	\$526.00
Spinner Assembly	P/N 05-07275	\$650.00

172 SPINNER (Early Models)

Spinner Dome (all aluminum to replace plastic)	P/N 05-09045	\$365.95
Front Plate	P/N 05-09050	\$298.95
Rear Plate	P/N 05-09055	\$200.95

172 SPINNER (Late Models) (For 172, I, K, L, M, N, P, & Q)

Dome** (FAA/PMA)	P/N 05-07280	\$328.95
Front Plate* (FAA/PMA)	P/N 05-07285	\$86.75
Back Plate* (original Cessna part)	P/N 05-07290	\$223.95

*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 U0752637K20005-01901 ...\$495.00

Spinner Sport Spacer U0752620-3 ..05-01902.....\$3.85

CESSNA TRIM CONTROLCHAINS



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.

Part No.	Price Ea.	Part No.	Price Ea.
ASS2294-25	\$4.60	ASS2295P25-155	\$41.95
ASS2295-25-185	\$58.00	ASS2295P25-159	\$51.95
ASS2295-25-249	\$55.95	ASS2295P25-185	\$61.95
ASS2295-25-321	\$84.95	ASS2295P25-321	\$61.95
ASS2295-25-43	\$19.95	ASS2295P25-47	\$19.95
ASS2295-25-47	\$19.95	ASS2295P25-55	\$19.95
ASS2295-25-61	\$17.20	ASS2295P25-59	\$30.95
ASS2295-25-63	\$31.95	ASS2295P25-63	\$48.20
ASS2295-25-67	\$89.50	AS2295P25-67	\$20.95
ASS2295-25-70	\$27.95	ASS2295P25-69	\$68.50
ASS2295-25-71	\$39.95	ASS2295P25-71	\$24.95
ASS2295A25-111	\$35.95	AS0432138-2	\$69.95
ASS2295P25-113	\$41.95		

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	\$10.50	0713348-1	Stall Horn	\$19.00	0556010-200	Adapter Ass'y.	\$972.00
SK172-1F	Strut Kit	\$17.85	S2488-1	Stall Horn Reed	\$0.49	1232040-5	Boot	\$47.60
S1093-1	Flap Buttons	\$0.18	0756009-8	Gasket	\$16.30	79C1	Drain Valve	\$103.95
NAS75-3-009	Bushing	\$2.30	0851559-1	Washer	\$6.60	S2485-1	Drain Valve	\$64.00
NAS77-3-23	Bushing	\$5.98	0756010-6	Plunger	\$128.95	S1577A1	Contactor	\$54.50
NAS77-8-88	Bushing	\$6.95	0756011-1	Standpipe	\$137.95	S1579A2	Contactor	\$39.50
MS25171-1	Nipple	\$0.90	S1450-6B14-010	Washer	\$3.25	S1580A1	Contactor	\$51.00
MS25171-2	Nipple	\$1.00	S1597-1-37.5	Belt V	\$45.80	S1588-1	Gasket	\$34.60
C15603-0101	Fuel Cap	\$31.50	B3-5-1	Filter Vac	\$2.35	S1588-2	Gasket	\$18.80
C592001-0201	Static Wick	\$25.70	S1921-1	Clamp	\$72.40	0750143-2	Deflector	\$14.85
B100142-1	Fuel Cap Gasket	\$8.20	U10C062-262M	Clamp	\$51.00	0750143-3	Bracket	\$10.60
S1991A1	Contactor	\$35.20	B40012	Brush	\$118.95	0851559-2	Washer	\$16.30
S2020-2	Drain Valve	\$21.80	A2748	Seal	---	S1915-1	Capacitor	\$65.25
S2106-2	Drain Valve	\$24.90	A2749	Seal Wiper	\$13.15	S1915-2	Capacitor	\$72.50
S2160-1	Switch	\$3.55	MS25253-1	Switch	\$10.70	S1994-1-1	Switch	\$15.60
S2237-3	Seat Belt Bushing	\$0.82	1234665-10	Tab	\$1,707.30	S2334-3	CHT Probe	\$145.95
S2416-1-31.0	Alt Belt	\$22.80	S1906-1	Switch	\$16.70	S1258-1	Sump	\$10.50
C0400213-6	Compass Placards	\$0.89	S1906-2	Switch	\$8.70	S3010-1	Switch	\$20.00
0413613-1-279	Panel Nut	\$0.86	S1230-17	Control	\$32.20	S1104-3	Rod End	\$19.40
0511242-1	Seat Stop	\$10.20	S1230-19	Control	\$33.30	S1105-4	Rod End	\$13.10
1220114-1	Spacer	\$0.50	RD0015H1600JBL	Rheostat	\$811.00	C592001-0201	Wick	\$25.70
1243030-5	Shim	\$16.50	0441139-6	Shim	\$34.20	C592001-0203	Wick	\$55.25
1243030-6	Shim	\$11.70	0541111-2	Shim	\$126.95	S1704-1	Roller	\$1.80
1243030-7	Shim	\$12.90	0441157-2	Shim	\$102.95	1714000-22	Washer	\$3.00
1250860-29	Clamp	\$17.16	0441157-1	Shim	\$44.00	16165	Wick	\$52.25
1298119-4	Exhaust Spring	\$4.50	1250405-1	Nut	\$139.95	KM610-64	Latch	\$32.40
1414104-54	Bushing	\$7.40	MS29513-338	O-Ring	\$0.98	B3-11-1	Gasket	\$14.80
1513174-3	Grey Panel Nut	\$5.50	AN6235-2A	Filter Hyd	\$32.50	S1477-3	Nut	\$0.68
1513174-5	Black Panel Nut	\$5.80	AN6235-3A	Element	\$7.70	S1477-08	Nut Clip	\$0.69
1555014-2	Clamp Half	\$7.80	1250922-200	Adapter	\$483.70	NH1000897-30	Clamp	\$221.00
0523919	Bushing	\$5.95	1250922-201	Adapter	\$579.95	NH1000897-40	Clamp	\$279.00
0523920	Roller	\$46.30	1250922-202	Adapter	---	NH1000897-50	Clamp	\$200.00
0523921	Roller	\$33.90	0750142-1	Gasket	\$23.40	NH1000897-60	Coupling	\$242.00
0541139	Plug	\$4.45	0756009-1	Fuel Filter	\$31.30	DGR3	ACU	\$195.95
9910306-1	Westgate Gasket	\$10.00	0741623-4	Tread	\$15.30	DGR6	Regulator	\$128.95
0711001-59	Hinge Pin	\$5.70	0441157-3	Shim	\$74.50			

CESSNA COWLING MOUNTS & KITS

Take the stress out of your cowling



New design provides ease of cowl-fastener alignment and cowling installation - SK2003 cushioned mounts are adjustable to any fastener length STC'd; FAA-PMA approved. STC & Form 8130 available from manufacturer at no charge.

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	\$17.50
J7444-24	SK2003-24	73-86 C182	08-00664	\$20.85
J7444-36or-42	SK2003-14	96-On C172	08-00665	\$25.80

15% discount on 10 or more

CONVERT OLDER SOUTHCOW COWLING 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	\$424.95
C172 (67-81)	SK203C172P4	Firewall to SK40S5 Stainless / Sides to SK40S5 Stainless	08-00667	\$638.00
C172 (82-86)	SK203C172PQ4	Firewall to SK40S5 Stainless / Sides to SK40S5 Stainless	08-00671	\$699.85
C177 (All)	SK203C177P4	Firewall to SK40S5 Stainless / Sides to SK40S5 Stainless	08-00668	\$680.00
C182 (73-86)	SK203C182P4	Firewall to SK40S5 Stainless / Sides-replace 40S5 with SK40S5 Stainless	08-00669	\$539.50

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 **\$3.95**

REPLACEMENT CESSNA & PIPER PARTS

Aircraft Spruce represents a manufacturer of replacement parts for light aircraft, currently producing about 800 FAA-PMA parts that fit Cessna and Piper aircraft. These products are high quality, fully FAA approved, are economically priced, and are available for prompt shipment. Aircraft Spruce is a stocking distributor and is able to offer these fine products at substantial savings to our customers. For assistance in determining the correct part number for your aircraft, please contact the Cessna/Piper parts specialist at Aircraft Spruce toll free at **1-877-4SPRUCE**.



See pages 151-155 for ACS Controls at substantial savings (Not FAA approved.)

FAA-PMA APPROVED CONTROLS FOR CESSNAS THROTTLES – PROP – MIXTURE – COWL FLAP

Throttle, Propeller, Mixture, and Cowl Flap controls are available for most Cessna single engine aircraft from the Cessna 120 through the 210 series. These FAA-PMA controls are ultra-smooth, flexible with no stretch, arctic tested to -50°F, and tested to 250,000 cycles. They feature brass body assembly, teflon lined conduit, stainless steel ends, viton dust boots, aluminum friction lock, and a high quality phenolic knob (throttle, mixture, and prop).

AP

Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price
ASC299506-0105	\$303.95	ASS1222-19	\$320.95	AS565-549-021	\$321.95	AS9863053-15	\$259.95
ASC299506-0201	\$361.95	ASS1222-1S	\$192.95	AS565-549-031	\$313.95	AS9863053-16	\$272.95
ASC299507-0101	\$192.95	ASS1222-25A	\$196.95	AS565-549-041	\$294.95	AS9863053-20	\$395.95
ASC299507-0201	\$271.95	ASS1222-2S	\$167.95	AS565-580-038	\$229.95	AS9863053-5	\$360.95
ASC299507-0301	\$358.95	ASS1223-6S	\$242.95	AS565-580-012	\$260.95	AS9863056-1	\$260.95
ASC299507-0401	\$365.95	ASS1223-3	\$232.95	AS565-548-041	\$180.95	AS9863056-2	\$258.95
ASC299508-0301	\$209.95	ASS1223-4	\$242.95	AS565-548-042	\$294.95	AS9863056-3	\$302.95
ASC299508-0302	\$242.95	ASS1223-6	\$260.95	AS565-548-043	\$255.95	AS9863056-4	\$183.95
ASC299508-0304	\$327.95	ASS1244-29	\$153.95	AS9860058-3	\$181.95	AS9863056-6	\$257.95
ASC299508-0401	\$365.95	ASS1244-30	\$121.95	AS9860058-4	\$184.95	AS9863056-7	\$245.95
ASC299508-0402	\$376.95	ASS1244-31	\$112.95	AS9860074-3	\$219.95	ASC299505-0101	\$204.95
ASC668002-0201	\$266.95	ASS1244-32	\$118.95	AS9860074-4	\$219.95	ASC299505-0102	\$204.95
ASS1219-1	\$284.95	ASS1244-5	\$183.95	AS9860075-3	\$246.95	ASC299505-0201S	\$225.95
ASS1220-12A	\$367.95	ASS1245-1	\$193.95	AS9860075-4	\$241.95	ASC299505-0202S	\$200.95
ASS1220-13	\$362.95	ASS1245-2	\$132.95	AS9861000-1	\$211.95	ASC299505-0205	\$204.95
ASS1220-3	\$236.95	ASS1245-3	\$189.95	AS9862066-1	\$269.95	ASC299505-0301	\$209.95
ASS1222-11S	\$204.95	ASS1391-25	\$156.95	AS9862066-5	\$209.95	ASC299505-0501	\$288.95
ASS1222-13S	\$159.95	ASS1391-26	\$108.95	AS9862066-6	\$405.95	ASC299506-0101	\$193.95
ASS1222-14S	\$173.95	ASS1391-27	\$118.95	AS9862067-1	\$363.95	ASC299506-0102	\$217.95
ASS1222-15S	\$173.95	AS1213040-1	\$111.95	AS9862067-12	\$222.95	ASC299506-0103	\$235.95
ASS1572-1	\$99.25	AS1213040-2	\$150.95	AS9862067-3	\$298.63	AS0411091-2	\$237.95
		ASS2149-1	\$384.95	AS9863053-11	\$270.95	AS0411091-27	\$237.95
		ASS2149-2	\$386.95	AS9863053-13	\$291.95	AS0411091-7	\$311.95



AILERON HINGE

FAA – PMA APPROVED
AS0523816-1P/N 05-00048 ..\$45.70 ea.



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.

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 lengthP/N 05-01254\$132.95

INTER-CYLINDER BAFFLE

Intercylinder Baffles for Teledyne Six Cylinder Engines. Replaces Cessna Part Number 0750135-1 and 0851833-1
P/N 05-02362\$48.95

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE



FLAP TRACK WEAR GAGE

Farlane 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 age diameter with a calibrated micrometer.

Flap Track Wear Gage P/N 05-02145\$33.75

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.**
79.5" lengthP/N 05-00046\$56.75
116" lengthP/N 05-00047\$61.25



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. \$56.75
P/N 05-02209\$61.25

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 airtail 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	\$88.95
0441225-2 (Right)	.05-01498	\$88.95
0441220-1 (Left)	.05-01499	\$56.50
0441220-2 (Right)	.05-01501	\$56.50

Prices Subject to Change Without Notice

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

REPLACEMENT CESSNA PARTS



CESSNA STEERING RODS

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	\$316.95
152	ALL	05-00274	0543022-4; R	\$309.95
172,172A	28000 to 17247746	05-00275	0543022-1; L	\$286.95
		05-00276	0543022-2; R	\$284.95
172B,C	17247747 to 17249544	05-00589	0743008-1; L	\$424.95
		05-00590	0743008-2; R	\$424.95
172D,E,F,G,H,I,K,L,M R172K F172D,E,F,G,H,K,L,M,N,P FP172 FR172E,F,G,H,J,K	17247747 to 17249544 R1722000 to R1723454 F1720001 to F1720254 FP1720001 to FP1720003 FR1720001 to FP17200675	05-00275	0543022-1; L	\$286.95
		05-00276	0543022-2; R	\$284.95
175,175A/B/C	55001 to 17557119	05-00589	0743008-1; L	\$424.95
		05-00590	0743008-2; R	\$424.95
182,182A/B/C/D	33000 to 53007 18253008 to 18253598	05-00589	0743008-1; L	\$424.95
		05-00590	0743008-2; R	\$424.95

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	\$57.25
152 A152 F152 FA152	15279406 - 15286033 A1520735 - A1521049 F15201429 - F15201980 FA1520337 - FA1520425	05-00277	\$57.25
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 FR1720001 - FR17200675	05-00279	\$67.75
175 175A, B, C	55001 - 56238 56239 - 17557119	05-00279	\$67.75
182	33000 - 53007 18253008 - 18253598	05-00279	\$67.75



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.....\$101.95

Eligibility List

Aircraft Models	Serial Numbers
175*, A,B,C P172 180, A,B,C,D,E,F,G,H,J,K 180A,B,C,D,E,F,G,H,J,K,L,M,N,P,Q,R F182F,O	56083 thru 17557118 P17257120 thru 17257188 300001 thru 1853203 330001 thru 1853203 F18200001 thru F18200169
A182J,K,L,M,N T182 185,A,B,C,D,E/A185E,F 185A,B,C,D,E,A,B T188C 205,A 206	A182-0001 thru A182-0148 18267716 thru 18268615 185-0001 thru 18504448 188-0001 thru 18809987 11880029 thru 118800687 205-0001 thru 205-0577 206-0001 thru 206-0275
U206,A,B,C,D,E,F,G P206A,B,C,D,E,F,G 1800SA,B,C,D,E,F,G 207,207A,D,E,F,G 210,A,B,C,D,E,F,G,H,J,K,L,M,N,R/T210K,L,M,N,R P210N,R T210G,H,J	U206-0271 thru U20607020 P206-0001 thru P20600647 U206-0438 thru U20607020 20700001 thru 20700778 57001 thru 21065009 P21000001 thru P21000874 T210-0198 thru T210-0454

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.....\$101.95

CESSNA BRASS SHIM TORQUE LINK

FAA-PMA APPROVED



Part No.	Cessna Part No.	Thickness	Price ea
05-00429	S1450-6B14-010	.010"	\$2.10
05-00430	S1450-6B14-007	.007"	\$1.84
05-00431	S1450-6B14-005	.005"	\$2.10

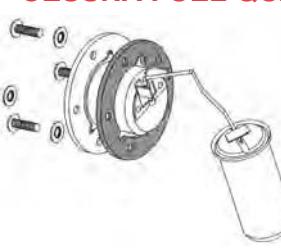
Our P/N's are interchangeable with Cessna's P/N's; "AS" prefix denotes Aircraft Spruce!
Call our parts specialists at Aircraft Spruce for part number assistance (1-877-4SPRUCE).

AIRCRAFT SPRUCE WEST
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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.

AP

Part No.	Description	Price Ea.
AS0426517-1	Fuel Transmitter	\$202.95
AS0523557-1	Fuel Transmitter	\$219.95
AS0726110-1	Fuel Transmitter	\$221.95
ASS1588-1	Gasket (Viton Fuel Trans.)	\$21.60
ASS1588-2	Gasket (Viton Fuel Trans.)	\$14.70
ASS35010R10	Screw/Seal Fuel Trans.	\$2.55
ASS35010R14	Screw/Seal Fuel Trans.	\$2.75

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	\$49.50
Cessna 170 - 37 Gals.	P/N 05-00899	\$49.50
Cessna 172 - 36 Gals.	P/N 05-00901	\$49.50
Cessna 180 - 55 Gals.	P/N 05-00902	\$49.50
Cessna 180 - 60 Gals.	P/N 05-00903	\$49.50
Cessna 180 - 79 Gals.	P/N 05-00904	\$49.50
Cessna 172 - 84 Gals.	P/N 05-00905	\$49.50
Cessna 182 - 55 Gals.	P/N 05-00906	\$49.50

CESSNA OIL ACCESS DOORS

This oil access door is equivalent to Cessna P/N 0752000-56 and fits Cessna 180's through 210's. Applicable to: 180-180G (S/N30000 - 18051445), 182-182G (S/N33000 - 18255844), 185-185C (S/N185-0001-185-0776), 205-205A (S/N 205-0001 - 205-0577), 206-U206 (S/N 206-0001-P206-0160), P206 (S/NP206-0001-P206-0160), 210-210E (S/N210-57001-210-58715). P/N 05-00451\$209.95



AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

REPLACEMENT CESSNA PARTS

CESSNA SEAT RAILS, ROLLERS, WASHERS, & BUSHINGS

These FAA-PMA replacement seat parts were developed to assist in complying with the parts replacement requirements of A.D. 87-20-03. This A.D. requires the periodic inspection and replacement of seat components of the entire Cessna light aircraft fleet. Our Parts are direct replacements for the wear related seat components. These seat parts are superior to the O.E.M. parts in many ways. Our rollers are fabricated from molybdisulfide filled nylons for improved strength and self lubrication. All rollers are fully machined from extruded stock for finer surface finishes and higher strength. Our wear washers are tougher with far better wear and aging resistance. Seat rails were carefully engineered with small improvements for added strength, longer life, and easier installation without any sacrifice of full interchangeability with the O.E.M. parts.

SEAT RAILS



ROLLERS



Part No.	Price Ea	Part No.	Price Ea	Part No.	Price Ea
AS0410219-1	\$104.95	AS0511243-6	\$80.00	AS1210408-23	\$86.00
AS0410219-2	\$114.95	AS0511293-1	\$86.75	AS1210408-24	\$99.50
AS0410230-2	\$127.95	AS0511293-2	\$137.95	AS1210408-4	\$91.50
AS0410230-3	\$129.95	AS0511293-3	\$76.00	AS1210408-5	\$94.75
AS0410235-1	\$84.50	AS0511293-4	\$83.25	AS1210408-6	\$83.25
AS0410235-2	\$54.75	AS0611134-2	\$80.00	AS1210408-8	\$76.50
AS0410235-6	\$72.00	AS0611134-3	\$81.00	AS1210408-9	\$78.95
AS0411545-1	\$103.95	AS0710618-1	\$57.50	AS1210520-11	\$61.25
AS0411545-2	\$102.95	AS0710618-4	\$106.95	AS1210520-12	\$173.95
AS0411545-3	\$88.70	AS0710618-8	\$97.50	AS1210520-15	\$121.95
AS0411545-4	\$77.25	AS0710618-9	\$57.50	AS1210520-16	\$142.95
AS0511000-14	\$93.50	AS0710658-2	\$68.00	AS1210520-17	\$97.25
AS0511000-15	\$23.95	AS0711693-1	\$109.95	AS1210520-18	\$28.00
AS0511000-64	\$133.95	AS0711693-10	\$163.95	AS1210520-19	\$57.75
AS0511000-68	\$161.95	AS0711693-11	\$113.95	AS1210520-20	\$135.95
AS0511000-69	\$131.95	AS0711693-2	\$96.75	AS1211514-1	\$84.25
AS0511000-70	\$170.95	AS0711693-4	\$137.95	AS1211514-2	\$70.75
AS0511240-10	\$115.95	AS0711693-6	\$152.95	AS2414002-1	\$72.75
AS0511240-11	\$83.00	AS0711693-7	\$140.95	AS2414002-2	\$72.75
AS0511240-12	\$87.50	AS0711693-8	\$113.95	ASS1551-1	\$6.50
AS0511240-14	\$78.75	AS0711693-9	\$108.95	ASS1554-1	\$1.87
AS0511240-15	\$75.25	AS1210025-1	\$160.95	ASS1704-1	\$3.25
AS0511240-2	\$80.50	AS1210025-3	\$154.95	AS1714000-22	\$2.20
AS0511240-3	\$75.25	AS1210408-1	\$99.75	AS1714000-41	\$1.39
AS0511240-4	\$75.50	AS1210408-12	\$90.75	AS0311310	\$8.60
AS0511240-5	\$88.25	AS1210408-14	\$126.95	AS0311586	\$12.40
AS0511240-6	\$137.95	AS1210408-15	\$167.95	AS0311715-3	\$113.95
AS0511240-7	\$135.95	AS1210408-16	\$110.95	AS0311715-4	\$107.95
AS0511240-8	\$125.95	AS1210408-17	\$68.50	AS43DD1-9	\$1.40
AS0511240-9	\$78.50	AS1210408-18	\$77.00	AS1613423-3	\$82.75
AS0511243-4	\$72.85	AS1210408-21	\$81.50	AS1414104-54	\$8.90
AS0511243-5	\$75.75	AS1210408-22	\$168.95		

SEAT KIT COMPONENTS (1 SEAT)

Kit No.	Description	Qty.	Part No.	Price
05-00425	Full articulating seat (2 crank handles).	Washers 8 Rollers 4 Bushings 4	AS1714000-22 AS17704-1 AS1414104-54	\$70.25
05-00427	Standard seat (1 or no crank handles).	Washers 8 Rollers 4 Bushings 4	ASS1554-1 ASS1551-1 AS1414104-54	\$81.50
05-00428	1946-1962 and all 150-152	Rollers 4 Bushings 4	AS0311310 AS0311586	\$59.00

For Cessna Roller Kit 141410-212 use:

- (1) Roller (P/N ASS155-1)
- (1) Bushing (P/N AS1414104-54)
- (2) Washers (P/N ASS1554-1)

These parts are generally used on the standard seats

For Cessna Roller Kit 1714000K200 use:

- (1) Roller (P/N ASS1704-1)
- (1) Bushing (P/N AS1414104-54)
- (2) Washers (P/N AS1714000-22)

These parts are generally used on the infinitely adjustable seats.

FAA-PMA Application chart for replacement parts for Cessna seats.	
Part No.	Model Series Eligible
AS0311310 roller AS0311586 bushing	150, 152, 170, 172, 175, 180, 182, 185, 195, 210
ASS1554-1 washer AS1714000-22 washer AS1714000-41 washer AS1414104-22 bushing ASS1704-1 roller ASS1551-1 roller	172, 180, 182, 185, 188, 205, 206, 207, 210

CESSNA SPACERS

Eligible Aircraft

P/N 06-02215	\$4.70 50
P/N 06-02216	\$4.70 50

Make	Model	Year	Beginning S/N	Ending S/N
Piper	PA-24-180	1960	242175	242175
Piper	PA-24-180	1961	242299	242843
Piper	PA-24-180	1962	242844	243284
Piper	PA-24-180	1963	243285	243557
Piper	PA-24-180	1964	243558	243687
Piper	PA-24-250	1960	242175	242175
Piper	PA-24-250	1961	242299	242843
Piper	PA-24-250	1962	242844	243284
Piper	PA-24-250	1963	243285	243557
Piper	PA-24-250	1964	243558	243687
Piper	PA-24-260	1965	244000	244299
Piper	PA-24-260	1966	244300	244660
Piper	PA-24-260	1967	244661	244751
Piper	PA-24-260	1968	244752	244782
Piper	PA-24-260	1968	244784	244803

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FLAP ROLLER KITS

Flap attachment kits are available for Cessna aircraft from Cessna 150 thru T210. Each kit contains FAA-PMA replacement rollers, bushings, and spacers for the flap attachment of one airplane. Our ASS1450-5N12-050 shims are stainless steel for better corrosion resistance. Individual FAA-PMA components are available on request.

Model	Serial No.	Year	Kit No.	Kit Price
150	17001-15071128	59-69	FLP-KT-1	\$224.95
150	15071129 & on	70-77	FLP-KT-2	\$228.95
152	15279406 - 15285564	78-80	FLP-KT-2	\$228.95
152	15285565 & on	81 & on	FLP-KT-3	\$216.95
F152	F15201429-F15201908	78-80	FLP-KT-2	\$228.95
F152	F15201909 & on	81 & on	FLP-KT-3	\$216.95
A152	A1520735-A1521014	78-80	FLP-KT-2	\$228.95
A152	A1521015 & on	81 & on	FLP-KT-3	\$216.95
FA152	FA1520337-FA1520387	78-80	FLP-KT-2	\$228.95
FA152	FA1520388 & on	81 & on	FLP-KT-3	\$216.95
170B	ALL	52-54	FLP-KT-1	\$224.95
172	28000-17249544	55-62	FLP-KT-1	\$224.95
172	17249545-17274009	63-80	FLP-KT-2	\$228.95
172	17274010 & on	81 & on	FLP-KT-3	\$216.95
177	ALL	68-78	FLP-KT-4	\$329.95
175	ALL	58-62	FLP-KT-1	\$224.95
180	ALL	53-82	FLP-KT-1	\$224.95
182	33000-18253598	56-62	FLP-KT-1	\$224.95
182	18253599 & on	63 & on	FLP-KT-3	\$216.95
185	ALL	61-82	FLP-KT-1	\$224.95
188	ALL	66-84	FLP-KT-3	\$216.95
205	ALL	63-64	FLP-KT-1	\$224.95
206	2060001-20601568	64-70	FLP-KT-4	\$329.95
206	U20601569 & on	71-86	FLP-KT-5	\$322.95
207	ALL	69-84	FLP-KT-4	\$329.95
210	57001-21058220	60-63	FLP-KT-1	\$224.95
210	21058221-21058818	64-66	FLP-KT-6	\$284.95
210	21058819 & on	80 & on	FLP-KT-7	\$297.95
T210	T2100001-T2100197	64-66	FLP-KT-6	\$284.95

ASS14503510-032 Wear washer kit (8 req/kit) ..P/N 05-00587..\$1.96 ea.



CESSNA WHEEL PANT MOUNTING PLATES

FAA-PMA APPROVED

Model	Year	Serial No.	Left Hand	Price	Right Hand	Price
150	74-86	15074851 & on	BCC0441225-1	\$107.95	BCC0441225-2	\$107.95
A150	74-86	A1500430 & on	BCC0441225-1	\$107.95	BCC0441225-2	\$107.95
F50	74-86	F15001014 & on	BCC0441225-1	\$107.95	BCC0441225-2	\$107.95
FA150	74-86	FA1500212 & on	BCC0441225-1	\$107.95	BCC0441225-2	\$107.95
152	78-86	ALL	BCC0441225-1	\$107.95	BCC0441225-2	\$107.95
172	75-86	17263459 & on	BCC0441220-1	\$75.00	BCC0441220-2	\$75.00
F172	75-86	F17201235 & on	BCC0441220-1	\$75.00	BCC0441220-2	\$75.00

SEAT STOP KITS FOR CESSNAS

These seat stops and related hardware are available in convenient kits for your aircraft. Call for the correct kit part no. for your Cessna aircraft.

Seat stop kit #1 (1 ea. AS0713074-1, 1 ea. MS24665-132-1, 1 ea. MS20392-1C21)
P/N 05-00580.....\$13.30

Seat stop kit #2 (1 ea. AS0511242-1, 1 ea. MS35265-41)
P/N 05-00581\$7.90

Seat stop kit #3 (1 ea. AS0713074-1, 1 ea. MS24665-132, 1 ea. MS20392-1C21, 2 ea. NAS43DD1-9)
P/N 05-00582\$15.60

CESSNA PROPELLER-MIXTURE-COWL FLAP CON-



FAA-PMA APPROVED CONTROLS FOR CESSNAS THROTTLES – PROP – MIXTURE – COWL FLAP

Throttle, Propeller, Mixture, and Cowl Flap controls are available for most Cessna single engine aircraft from the Cessna 120 through the 210 series. These FAA-PMA controls are ultra-smooth, flexible with no stretch, arctic tested to -50°F, and tested to 250,000 cycles. They feature brass body assembly, teflon lined conduit, stainless steel ends, viton dust boots, aluminum friction lock, and a high quality phenolic knob (throttle, mixture, and prop).

Propeller Controls					Mixture Controls				
Model	Serial Number	P/N	Our P/N	Price	Model	Serial Number	P/N	Our P/N	Price
177B*	17701371 thru 17702539	C299506-0105	05-00177	\$303.95	R172E,F,G,H,J,K	R1722000 thru R1723454	9862066-6	05-00239	\$405.95
177RG*	177RG0001 thru 177RG1051	C299506-0105	05-00177	\$303.95	185A,B,C,D,E	185-0238 thru 185-1599	C299507-0201	05-00181	\$271.95
F177RG*	F177RG0001 thru F177RG0160	C299506-0105	05-00177	\$303.95	A185E,F*	18501600 thru 18502007	C299507-0201	05-00181	\$271.95
180A,B,C,D,E,F,G	30000 thru 18051445	S1223-4	05-00209	\$242.95	A185E,F*	18502026 and 18502027	C299507-0201	05-00181	\$271.95
180H*, J	18051876 thru 18052770	C299506-0103	05-00268	\$235.95	A185F*	18502008 thru 18502025	C299507-0401	05-00183	\$356.95
182,A,B,C,D	33000 thru 18253598	S1223-4	05-00209	\$242.95	A185F*	18502028 thru 18503153	C299507-0401	05-00183	\$356.95
182E,F,G	18253599 thru 18255844	S1223-3	05-00208	\$232.95	188,188A	1880001 thru 1880572	S1220-13	05-00195	\$362.95
182H,J,K	18255845 thru 18258505	S1223-6	05-00211	\$260.95	A188	18800573 thru 18800832	S1220-13	05-00195	\$362.95
182L,M,N,P	18258506 thru 18265175	C299506-0102	05-00267	\$217.95	188B, A188B*	1880833 thru 18802745	C299507-0301	05-00182	\$358.95
FR182P	F18200001 thru F18200025	C299506-0102	05-00267	\$217.95	A188B*	18802746 thru 18803856	C299508-0401	05-00189	\$365.95
182Q,R	18265176 thru 18268615	9862067-3	05-01734	\$398.95	T188C	T18803297T thru T18803422T	C299508-0402	05-00191	\$376.95
A185E*	185-1301 thru 18502007	C299506-0103	05-00268	\$235.95	205, 205A	205-0001 thru 205-0577	S1220-3	05-00196	\$236.95
A185E*	18502026 and 18502027	C299506-0103	05-00268	\$235.95	206	206-0001 thru 206-0275	S1220-3	05-00196	\$236.95
A185E*,F	18502008 thru 18502025	C299506-0201	05-00178	\$361.95	U206, U206A,B	U206-0276 thru U206-0914	S1220-3	05-00196	\$236.95
A185E*,F	18502028 thru 18503153	C299506-0201	05-00178	\$361.95	P206, P206A,B	P206-0001 thru P206-0419	S1220-3	05-00196	\$236.95
A188B*	18800833 thru 18802745	S2149-2	05-00228	\$386.95	U206C,D,E,F	U206-0915 thru U20603521	C299507-0101	05-00179	\$192.95
A188B*	18802746 thru 18803856	C299508-0302	05-00187	\$242.95	TU206C,D,E,F	U206-0915 thru U20603521	C299507-0101	05-00179	\$192.95
T188C	T18803297T thru T18803422T	C299508-0304	05-00191	\$376.95	P206C,D,E	P206-0420 thru P2060647	C299507-0101	05-00179	\$192.95
U206, U206A,B,	U206-0276 thru U206-0914	S1223-4	05-00209	\$242.95	U206G, TU206G	U20603522 thru U20607020	9862066-1	05-00237	\$269.95
TU206A,B	U206-0276 thru U206-0914	S1223-4	05-00209	\$242.95	207, T207	20700001 thru 20700362	S1220-12A	05-00194	\$367.95
P206, P206A,B	P2060001 thru P2060419	S1223-4	05-00209	\$242.95	207A, T207A	20700363 thru 20700788	9862066-5	05-00238	\$209.95
U206C,D,E,F	U2060915 thru U20603521	C299506-0101	05-00266	\$193.95	210B,C,D,E,F,G	21057841 thru 21058936	S1220-3	05-00196	\$236.95
TU206C,D,E,F	U2060915 thru U20603521	C299506-0101	05-00266	\$193.95	T210F,G	T210-0001 thru T210-0307	S1220-3	05-00196	\$236.95
P206C,D,E	P206-0420 thru P2060647	C299506-0101	05-00266	\$193.95	210K,L, T210K,L	21059200 thru 21061573	C299507-0101	05-00179	\$192.95
U206G, TU206G	U20603522 thru U20607020	9862067-1	05-00241	\$363.95	210M,N, T210M,N	21061574 thru 21064897	9862066-1	05-00239	\$405.95
207A, T207A	20700363 thru 20700788	9862067-12	05-00242	\$222.95	P210N	P2100001 thru P21000834	9862066-1	05-00239	\$405.95

*Denotes partial model eligibility

Model	Serial Number	Location	P/N	Our P/N	Price	Model	Serial Number	P/N	Our P/N	Price
R172K	R1722000 thru R1723454	1 per A/C	S1391-26	05-00222	\$108.95					
FR172K	FR17200591 thru FR17200675	1 per A/C	S1391-26	05-00222	\$108.95					
177B	17701371 thru 17702752	Left	S1391-25	05-00221	\$156.95	Right	S1391-26	05-00221	\$156.95	
177RG	177RG0001 thru 177RG1366	Left	S1391-27	05-00223	\$118.95	Right	S1391-27	05-00223	\$118.95	
180D,E	18050912 thru 18051183	Left	S1245-1	05-00217	\$193.95	Right	S1245-1	05-00217	\$193.95	
180F	18051184 thru 18051312	Left	S1245-1	05-00217	\$193.95	Right	S1245-2	05-00218	\$132.95	
180G	18051313 thru 18051445	Left	S1245-3	05-00219	\$189.95	Right	S1245-2	05-00218	\$132.95	
180H,J	18051446 thru 18052770	Left	S1572-1			Right	S1245-2	05-00218	\$132.95	
180K	18052771 thru 18053203	Left	9860074-3	05-00232	\$219.95	Right	9860074-4	05-00233	\$219.95	
182D	18253008 thru 18253598	Left	S1245-1	05-00217	\$193.95	Right	S1245-1	05-00217	\$193.95	
182E,F,G,H,J,K,L,M,N,P,Q,R	18253599 thru 18268615	Left	9860058-3	05-00229	\$181.95	Right	9860058-4	05-00231	\$184.95	
T182	18267716 thru 18268541	Left	9860075-3	05-00234	\$246.95	Right	9860075-4	05-00235	\$241.95	
R182/TR182	R18200002 thru R18202041	Left	9860075-3	05-00234	\$246.95	Right	9860075-4	05-00235	\$241.95	
182S, 182T	18280001 and On	Left	580-703-024	05-01736	\$287.95	Right	580-703-025	05-01737	\$281.95	
T182T	T18208001 and On	Left	580-703-024	05-01736	\$287.95	Right	580-703-025	05-01737	\$281.95	
185, 185A,B,C	185-0001 thru 185-0776	Left	S1245-3	05-00219	\$189.95	Right	S1245-2	05-00218	\$132.95	
185D,E, A185E, A185F*	185-0777 thru 18503153	Left	S1572-1			Right	S1245-2	05-00218	\$132.95	
A185F*	185603154 thru 18504448	Left	9860074-3	05-00232	\$219.95	Right	9860074-4	05-00233	\$219.95	
205, 205A	205-0001 thru 205-0577	Left	S1244-5	05-00216	\$183.95	Right	S1244-31	05-00214	\$112.95	
206, U206	206-0001 thru 206-0275	Left	S1244-5	05-00216	\$183.95	Right	S1244-31	05-00214	\$112.95	
U206A,B,C,D,E,F*	U206-0276 thru U20602199	Left	S1244-5	05-00216	\$183.95	Right	S1244-31	05-00214	\$112.95	
P206, P206A,B,C,D,E	P206-0001 thru P2060647	Left	S1244-5	05-00216	\$183.95	Right	S1244-31	05-00214	\$112.95	
TP206A*	P206-0161 thru P206-0274	Left	S1244-5	05-00216	\$183.95	Right	S1244-31	05-00214	\$112.95	
TU206A*	U206-0438 thru U206-0617	Left	S1244-5	05-00216	\$183.95	Right	S1244-31	05-00214	\$112.95	
TP206A*,B,C,D,E	P206-0275 thru P2060647	Left	S1244-32	05-00215	\$118.95	Right	S1244-31	05-00214	\$112.95	
U206A*,B,C,D,E,F,G	U206-0618 thru U20607020	Left	S1244-32	05-00215	\$118.95	Right	S1244-31	05-00214	\$112.95	
U206F*,G	U20602200 thru U20607020	Left	S1244-32	05-00215	\$118.95	Right	S1244-31	05-00214	\$112.95	
206H	20608001 and On	Left	580-703-026	05-01738	\$419.95	Right	580-703-027	05-01739	\$397.50	
T206H	T20608001 and On	Left	580-703-026	05-01738	\$419.95	Right	580-703-027	05-01739	\$397.50	
207, 207A, T207, T207A	20700001 thru 20700788	Left	S1244-29	05-00212	\$153.95	Right	S1244-30	05-00213	\$121.95	
210, 210A	57001 thru 21057840	Left	1213040-1	05-00224	\$111.95	Right	1213040-2	05-00225	\$150.95	
210B,C,D,E,F,G,H,J,K*	21057841 thru 21059240	Left	S1244-5	05-00216	\$183.95	Right	S1244-31	05-00214	\$112.95	
T210F	T210-0001 thru T210-0197	Left	S1244-5	05-00216	\$183.95	Right	S1244-31	05-00214	\$112.95	
210K*,L,M,N	21059241 thru 21064897	Left	S1244-32	05-00215	\$118.95	Right	S1244-31	05-00214	\$112.95	
T210G,H,J,K,L,M,N	T210-0198 thru 21064897	Left	S1244-32	05-00215	\$118.95	Right	S1244-31	05-00214	\$112.95	
P210N*	P21000001 thru P21000834	Left	S1244-32	05-00215	\$118.95	Right	S1244-31	05-00214	\$112.95	

*Denotes partial model eligibility

AIRCRAFT SPRUCE WEST
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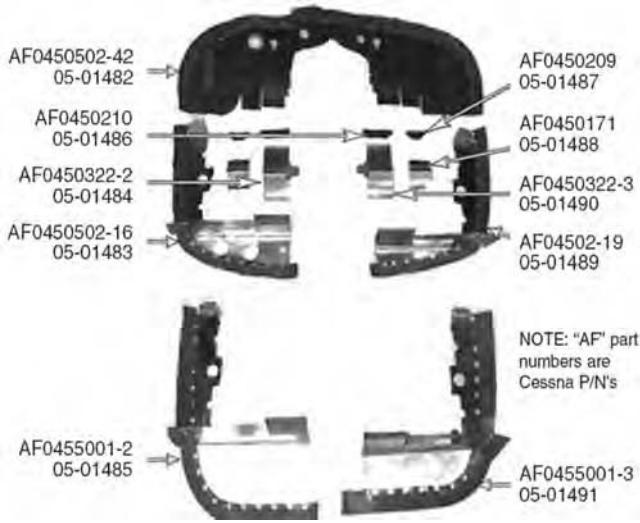
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AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

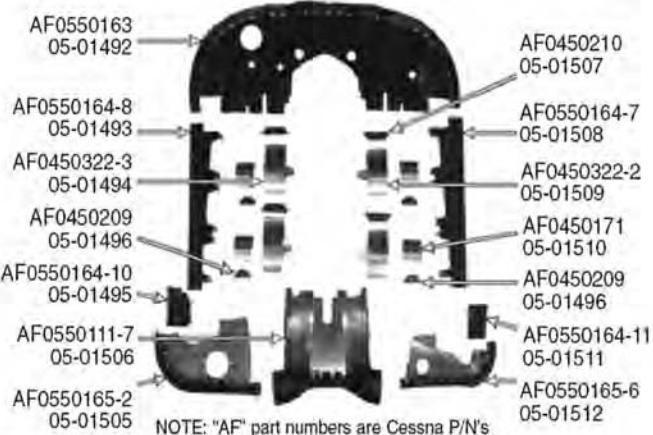
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CESSNA ENGINE BAFFLES

150 Baffles



170/172 Baffles

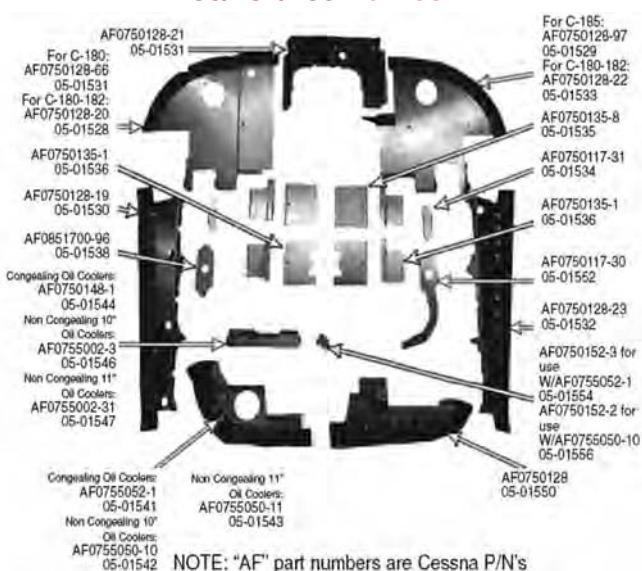


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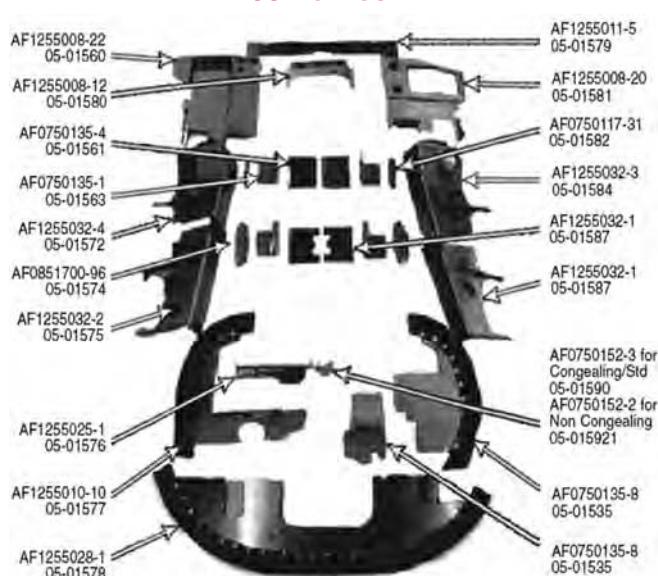
Description	Part No.	Price
AF0450502-42 150 Baffle	05-01482	\$310.00
AF0450502-16 150 Baffle	05-01483	\$155.95
AF0450322-2 150 Baffle	05-01484	\$30.00
AF0455001-2 150 Baffle	05-01485	\$155.00
AF0450210 150 Baffle	05-01486	\$7.10
AF0450209 150 Baffle Seal	05-01487	\$5.00
AF0450171 150 Baffle	05-01488	\$26.00
AF0450502-19 150 Baffle	05-01489	\$155.95
AF0450322-3 150 Baffle	05-01490	\$30.00
AF5001-3 150 Baffle	05-01491	\$155.00

Description	Part No.	Price
AF0550163 172/172 Baffling	05-01492	\$345.95
AF0550164-8	05-01493	\$78.00
AF0450322-3 172/172 Baffling	05-01494	\$30.00
AF0550164-10	05-01495	\$16.10
AF0450209 170/172 Baffling	05-01496	\$5.00
AF0550165-2 170/172 Baffling	05-01505	\$98.25
AF0550111-7 170/172 Baffling	05-01506	\$85.25
AF0450210 170/172 Baffling	05-01507	\$7.00
AF0550164-7 170/172 Baffling	05-01508	\$78.00
AF0450322-2 170/172 Baffling	05-01509	\$30.00
AF0450171 170/172 Baffling	05-01510	\$26.00
AF0550164-11 170/172 Baffling	05-01511	\$16.10
AF0550165-6 170/172 Baffling	05-01512	\$96.25

180/182/185 Baffles



206 Baffles



Description	Part No.	Price	Description	Part No.	Price
AF0750128-66	05-01527	\$245.00	AF0750135-3	05-01540	\$22.00
AF0750128-20	05-01528	\$235.00	AF0755052-1	05-01541	\$155.95
AF0750128-97	05-01529	\$235.00	AF0755050-10	05-01542	\$155.00
AF0450128-19	05-01530	\$95.25	AF0755050-11	05-01543	\$155.00
AF0750128-21	05-01531	\$70.00	AF0750148-1	05-01544	\$36.00
AF0750128-23	05-01532	\$95.25	AF0755002-3	05-01546	\$36.00
AF0750128-22	05-01533	\$235.00	AF0755002-31	05-01547	\$36.00
AF0750117-31	05-01534	\$35.00	AF0750128	05-01550	\$125.00
AF0750135-8	05-01535	\$22.00	AF0750117-30	05-01552	\$35.00
AF0750135-1	05-01536	\$45.00	AF0750152-3	05-01554	\$17.00
AF0851700-96	05-01538	\$21.00	AF0750152-2	05-01556	\$17.00

Description	Part No.	Price	Description	Part No.	Price
AF1255008-22	05-01560	\$245.00	AF0750135-3	05-01580	\$89.00
AF1255008-12	05-01580	\$22.00	AF0755052-1	05-01581	\$425.00
AF0750135-4	05-01561	\$45.00	AF0755050-10	05-01582	\$35.00
AF0750135-1	05-01563	\$286.00	AF0450128-19	05-01572	\$295.95
AF1255032-4	05-01572	\$21.00	AF0750128-23	05-01574	\$197.00
AF0851700-96	05-01574	\$64.00	AF0755002-3	05-01587	\$86.00
AF1255032-2	05-01575	\$261.00	AF0750128	05-01589	\$62.00
AF1255025-1	05-01576	\$175.00	AF0750117-30	05-01590	\$17.00
AF1255010-10	05-01577	\$25.00	AF0750135-1	05-01592	\$17.00
AF1255028-1	05-01578	\$17.00	AF0750135-8	05-01535	\$17.00

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 line is Aircraft Spruce part number. Middle line is Cessna part number. Bottom line is price.

CESSNA MODELS	RH WING	LH WING	RH FUSELAGE	LH FUSELAGE	KIT
150 and 152	05-01557 0522150-4 \$116.95	05-01558 0522150-3 \$119.95	05-01564 0421002-2-791 \$119.95	05-01565 0421002-1-791 \$119.95	05-01598 \$476.80
170A & B	05-01557 0522150-4 \$116.95	05-01558 0522150-3 \$119.95	05-01559 0522150-2 \$119.95	05-01562 0522150-1 \$119.95	05-01599 \$476.80
172 to 172L	05-01557 0522150-4 \$116.95	05-01558 0522150-3 \$119.95	05-01559 0522150-2 \$119.95	05-01562 0522150-1 \$119.95	05-01599 \$476.80
172M to 172S & SP P172D, 172RG, R172K (172XP)	05-01583 0523047-2 \$119.95	05-01586 0523047-1 \$119.95	05-01559 0522150-2 \$119.95	05-01562 0522150-1 \$119.95	05-01601 \$479.80
175	05-01557 0522150-4 \$116.95	05-01558 0522150-3 \$119.95	05-01559 0522150-2 \$119.95	05-01562 0522150-1 \$119.95	05-01601 \$479.80
180	05-01566 0723605-4-791 \$119.95	05-01567 0723605-3-791 \$119.95	05-01568 0723605-2-791 \$119.95	06-00576 0723605-1-791 \$116.95	05-01602 \$476.80
182 to 182D	05-01566 0723605-4-791 \$119.95	05-01567 0723605-3-791 \$119.95	05-01568 0723605-2-791 \$119.95	06-00576 0723605-1-791 \$116.95	05-01602 \$476.80
182E to 182S R182, T182, TR182	05-01566 0723605-4-791 \$119.95	05-01567 0723605-3-791 \$119.95	05-01569 0723612-4-791 \$119.95	05-01570 0723612-3-791 \$119.95	05-01603 \$479.80
205	05-01571 1227002-10-791 \$119.95	05-01573 1227002-11-791 \$119.95	Not Available	Not Available	Not Available
206, P206, TP206, U206, TU206, all to E	05-01571 1227002-10-791 \$119.95	05-01573 1227002-11-791 \$119.95	05-01594 1227402-4-791 \$119.95	05-01595 1227402-3-791 \$119.95	05-01604 \$479.80
U206F, TU206F, all to SN U206-2579	Not Available	Not Available	05-01596 1227010-2 \$184.95	05-01597 1227010-1 \$184.95	Not Available
U206F, TU206, from SN U206-2580 & up	05-01591 127005-6 \$184.95	05-01593 127005-5 \$184.95	05-01596 1227010-2 \$184.95	05-01597 1227010-1 \$184.95	05-01605 \$739.80
210F, T210F SN 21058716/58818 & T210001/0197	05-01571 1227002-10-791 \$119.95	05-01573 1227002-11-791 \$119.95	05-01594 1227402-4-791 \$119.95	05-01595 1227402-3-791 \$119.95	05-01604 \$479.80

AP

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.

CESSNA MODELS	LH WING TIP PART NO.	RH WING TIP PART NO.	PRICE PER WING TIP
All 150, A150, 152, A152, 170A & B, 175, 205 & L19, 172, 180, 182, 185, 206, P206, TP206, U206, TU206 up thru model year 1973	05-01526	05-01526	\$323.95
172, P172, R172 known as 172XP, 172RG, 172SP, 180, 182, 185, U206, TU206 model year 1974 and up	05-01545	05-01548	\$323.95

WING TIPS

AP

These wing tip kits are designed to reuse as much existing wing tip hardware as possible. For example, reusing navigation lights, screws etc. However, if you are replacing these wing tips on aircraft of model year 1973 or earlier, you will require different plate lens than is found on those earlier aircraft. Listed in the table to the right are the wing tip numbers and the plate lens numbers that you will have to order to go with the wing tips.

WING TIP NO.	PRICE	PLATE LENS NO.	PRICE
05-01526	\$323.95	05-01549	\$37.00
05-01539	\$323.95	05-01551	\$37.00
05-01545	\$323.95	05-01553	\$37.00
05-01548	\$323.95	05-01555	\$37.00

EMPPENNAGE 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 HORZ. FIN L.H.	TIP HORZ. FIN R.H.	TIP ELEV. L.H.	TIP ELEV. R.H.
150, 152	05-01513 0430004-11-791 \$59.95	05-01513 0430004-11-791 \$59.95	05-01514 0430004-10-791 \$93.25	05-01514 0430004-10-791 \$93.25
172D and up, 172SP, R172K (172XP), 172RG	05-01515 0532001-93-791 \$60.50	05-01515 0532001-93-791 \$60.50	05-01517 0532001-94-791 \$93.00	05-01516 0532001-94-791 \$93.00

CESSNA MODELS	TIP VERT. FIN	TIP UPPER RUDDER	TIP LOWER RUDDER
150F and up, 152, A152			05-01518 0430004-10-791 \$93.00
150Fto 150L	05-01519 0431013-3-791 \$65.25		
150M and up A150M and up 152, A152	05-01520 040011-1 \$82.95	05-01521 040011-2 \$92.95	
172K to 172P, 172RG,R172K, R172K (172XP)			05-01522 0531006-80-791 \$93.00
172N and up		05-01523 0531006-112 \$88.50	
172A to 172I	05-01524 0531006-33-791 \$65.00		

CESSNA FLAP GAP SPEED KITS

CESSNA MODELS	FLAP GAP KIT NO.	PRICE	HARDWARE KIT NO.	PRICE
170B, 172 thru 172Q ,P172D, R172E thru R172K,172RG, 180 thru 180K, 182 thru 182R, 185 thru 185E, A185F, 210-5A, 210 thru 210C	05-01620	\$384.95	05-01621	\$51.95
150, A150, 152, A152	05-01622	\$384.95	05-01621	\$51.95

CESSNA FLAP GAP SPEED KITS

CESSNA MODELS	FLAP GAP KIT NO.	PRICE	HARDWARE KIT NO.	PRICE
150, A150, 152, A152, 170B,172, 175, 180, 182, 185, 205, 210 thru 210C	05-01623	\$169.95	05-01624	\$17.95

PIPER

(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	\$819.49
PA-11, For cowls using Lion fasteners	05-07305	\$762.00
J-3 Eyebrow baffle LH	05-00061	\$328.95
J-3 Eyebrow baffle RH	05-00062	\$329.95
Front piece for Top cowl	05-00063	\$272.95
Top cowl for J-3	05-00064	\$407.95
Bottom cowl for Continental powered J-3	05-00065	\$468.50
Front piece for bottom cowl	05-00066	\$309.50
Fuselage cowl	05-00067	\$391.95
Top cowl for PA-11	05-00068	\$108.95
Bottom cowl for PA-11	05-00069	\$214.95
Side cowl for PA-11 LH	05-00071	\$216.95
Side cowl for PA-11 RH	05-00072	\$216.95

PA-12

Bottom cowl	05-00078	\$185.95
Top cowl	05-00079	\$115.95
Fuselage cowl	05-00081	\$682.00
Left side cowl	05-00082	\$281.95
Right side cowl	05-00083	\$281.95

PA-12 & 14

Nose cowl for all serial numbers	05-07310	\$694.00
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PA-18 (95 HP)

PA-18, For cowls using screws	05-07295	\$819.49
PA-18, For cowls using Lion fasteners	05-07305	\$762.00
Left side cowl, used w/shielded ignition lead	05-00073	\$222.95
Right side cowl, used w/shielded ignition lead	05-00074	\$222.95
Top cowl	05-00075	\$101.95
Bottom cowl	05-00076	\$223.95
Bottom cowl, installed w/machine screws	05-00077	\$196.95

PA-18 - 105, 125, 135, 150 HP

Fuselage cowl, S/N 2168-5938,105,125,135HP	05-00089	\$851.00
Fuselage cowl, S/N 5939-8019, 135, 150 HP	05-00091	\$794.00
Fuselage cowl, S/N 8020 and up, 150 HP	05-00092	\$743.00
PA-18-105 thru 125 HP, no starter hole	05-07315	\$778.00
PA-18-105 thru 125 HP, with starter hole	05-07320	\$786.00
PA-18-135 & 150 HP, w/starter hole & oil scoop	05-07325	\$831.00
PA-18-135 & 150 HP, w/oil scoop, no starter hole	05-07330	\$838.00
Top cowl, 105 HP	05-00093	\$187.95
Top cowl, 125, 135, 150 HP	05-00094	\$173.95
Left side cowl, 105 HP	05-00095	\$292.95
Right side cowl, 105 HP	05-00096	\$292.95
Left side cowl, 125, 135, 150 HP	05-00097	\$368.19
Right side cowl, 125, 135, 150 HP	05-00098	\$368.19
Lower cowl ass'y, 135 HP, S/N 3014 thru 4617	05-00099	\$642.00
Lower cowl ass'y, 150 HP, S/N 3771 thru 6963	05-00101	\$765.00
Lower cowl ass'y, 150 HP, S/N 6964 and up	05-00102	\$744.92

PA-20 & PA-22

PA-22-108, S/N 8000 & up, w/o oil scoop	05-07345	\$870.00
PA-20 Nose cowl, 115 HP	05-07335	\$779.00
PA-22 Nose cowl, S/N 1 thru 533	05-07335	\$779.00
PA-20 Nose cowl, 135 HP	05-07340	\$912.00
PA-20 Bottom cowl, 125 HP	05-00049	\$832.00
PA-20 Bottom cowl, 135 HP	05-00051	\$720.00
PA-22 Bottom cowl, 125 HP, S/N 1 - 353	05-00052	\$1,004.00
PA-22 Bottom cowl, 125 HP, S/N 354 - 533	05-00053	\$990.00
PA-22 Bottom cowl, 125 HP, S/N 534 - 1759	05-00054	\$739.00
PA-22 Bottom cowl, 135-160HP, S/N 1760-7630	05-00055	\$1,441.00
PA-22(Colt) Bottom cowl, 108HP, S/N 8000 & up	05-00056	\$1,280.00
PA-22 Left side cowl	05-00057	\$238.95
PA-22 Right side cowl	05-00058	\$238.95
PA-20/22 Top center cowl	05-00059	\$218.95
PA-25 Pawnee Nose cowl, 150 HP	05-07340	\$912.00

PIPER

(FAA/PMA APPROVED)

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	\$24.50
Nose Rib, Tip L/H	05-07370	16192-000	\$24.80
Nose Rib, Tip R/H	05-07375	16192-001	\$27.80
Full Butt Rib, L/H	05-07385	10634-002	\$78.50
Full Butt Rib, R/H	05-07390	10634-008	\$88.75
Full Tank Bay Rib, L/H	05-07395	10653-000	\$67.00
Full Tank Bay Rib, R/H	05-07405	10653-006	\$67.00
Full I.B. Ail. Bay, L/H	05-07410	13042-000	\$67.00
Full I.B. Ail. Bay, R/H	05-07415	13042-001	\$66.95
Full O.B. Ail. Bay, L/H	05-07420	12902-000	\$78.25
Full O.B. Ail. Bay, R/H	05-07425	12902-001	\$84.50
3/4 Rib	05-07430	13022-002	\$58.25
3/4 Butt Rib, L/H	05-07435	10634-005	\$67.00
3/4 Butt Rib, R/H	05-07440	10634-007	\$75.50
3/4 Tank Bay Rib	05-07445	10635-002	\$65.25

STABILIZER LINER TUBE

Link Assembly Liner Tube (upper tube in picture)
(80132-11)P/N 05-07450.....\$69.50



Rear Liner Tube (lower tube in picture)
(80132-10)P/N 05-07455.....\$35.40



WING NAVIGATION LIGHT BRACKET

For use with Grimes Model "E" Type Light or equivalent
P/N 05-07460\$61.75



J-3 Continental MountP/N 05-00873\$477.95
PA-11 MountP/N 05-00874\$449.95

ENGINE MOUNTS

YokeP/N 05-07465\$169.95
Adjustment Screw P/N 05-07470\$68.40



STABILIZER YOKE & ADJUSTMENT SCREW

Left Gear, uncovered P/N 05-07350\$350.95
Right Gear, uncovered P/N 05-07355\$370.95



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\$61.75
(PIPER PA32 & 34) P/N 05-02222\$61.75
(PIPER C MODEL) P/N 05-02223\$61.75



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\$61.75

AP

PIPER THROTTLE CONTROLS

Throttle Controls					Mixture Controls				
Model	Serial Number	P/N	Our P/N	Price	Model	Serial No.	P/N	Our P/N	Price
PA20,PA20S,PA20-115	20-1 thru 20-933	455-139	05-01743	\$238.95	PA-18,PA-18S,PA-18"105"	All	600-72	05-01254	\$132.95
PA20S-115,PA20-135	20-934 thru 20-1121	455-139	05-01743	\$238.95	PA18S"105",PA-18A,PA-18"125"	All	600-72	05-01254	\$132.95
PA20S-135	20-934 thru 20-1121	455-139	05-01743	\$238.95	PA-18"125",PA-18AS"125"	All	600-72	05-01254	\$132.95
PA22 (125hp)	22-1 thru 22-533	455-139	05-01743	\$238.95	PA-18"135",PA-18S"135"	All	600-72	05-01254	\$132.95
PA22-135	22-534 thru 22-2377	455-139	05-01743	\$238.95	PA-18A"135",PA-18AS"135"	All	600-72	05-01254	\$132.95
PA22-135,PA22S-135	22-2379 thru 22-2424	455-139	05-01743	\$238.95	L-21A,L-21B,PA-18"150"	All	600-72	05-01254	\$132.95
PA22-135,PA22S-135	22-2378,22-2425 thru 22-3217	12693-04	05-02209	\$296.95	PA-18A"150",PA-18S"150"	All	600-72	05-01254	\$132.95
PA22-135,PA22S-135	22-3219 thru 22-3386	12693-04	05-02209	\$296.95	PA-18AS"150"	All	600-72	05-01254	\$132.95
PA22-150,PA22S-150	22-2378,22-2425 thru 22-7642	12693-04	05-02209	\$296.95	PA-19,PA-19S,L-18C	All	600-72	05-01254	\$132.95
PA22-160,PA22S-160	22-5139,22-5603 thru 22-7642	12693-04	05-02209	\$296.95	PA-20,PA-20S,PA-20-115	All	600-72	05-01254	\$132.95
PA22-108	22-8000 and On	12693-04	05-02209	\$296.95	PA-20S-115,PA-20-135,PA-20S-135	All	600-72	05-01254	\$132.95
PA28-140	28-20002 thru 28-24999	12693-04	05-02209	\$296.95	PA-22,PA-22-108,PA-22-135	All	600-72	05-01254	\$132.95
PA28-140	28-25000 thru 28-26956	455-353	-		PA-22S-135,PA-22-150,PA-22S-150	All	600-72	05-01254	\$132.95
PA28-140	28-7125001 thru 28-7725290	455-353	-		PA-22-160,PA-22S-160	All	600-72	05-01254	\$132.95
PA28-150	28-1 thru 28-4377	12693-04	05-02209	\$296.95	PA-24-180	All	600-72	05-01254	\$132.95
PA28-151	28-7415001 thru 28-7715314	455-350	05-01745	\$129.95	PA-24-250	All	600-72	05-01254	\$132.95
PA28-160	28-1 thru 28-4377	12693-04	05-02209	\$296.95	PA-24-260	All with Carbureted Engine	600-72	05-01254	\$132.95
PA28-161	28-7716002 thru 28-8616057	455-350	05-01745	\$129.95	PA24-400	26-2 thru 26-148	22633-04	05-01757	\$369.95
PA28-161	2816001 thru 2816110 (Less 2816066)	455-350	05-01745	\$129.95	PA-28-140	28-20002 thru 28-24999	600-72	05-01254	\$132.95
PA28-161 Cadet	2841001 and On	455-350	05-01745	\$129.95	PA-28-150,PA-28-160	28-1 thru 28-4377	600-72	05-01254	\$132.95
PA28-180	28-671 thru 28-4377	12693-04	05-02209	\$296.95	PA-28S-160	28-1 thru 28-1760	600-72	05-01254	\$132.95
PA28-180	28-4378 thru 28-5152	455-333	05-01746	\$135.95	PA-28-180,PA-28S-180	28-671 thru 28-4377	600-72	05-01254	\$132.95
PA28-180	28-5153 thru 28-5869	455-350	05-01745	\$129.95	PA-28-235	28-10003 thru 28-11038	600-72	05-01254	\$132.95
PA28-180	28-7105001 thru 28-7505261	455-350	05-01745	\$129.95	PA28-140	28-25000 thru 28-26956	455-352	05-01757	\$369.95
PA28R-180	28R-30005 thru 28R-30481	455-322	05-01747	\$163.95	PA28-140	28-7125001 thru 28-7725290	455-352	05-01757	\$369.95
PA28R-180	28R-30483 thru 28R-31279	455-322	05-01747	\$163.95	PA28-151	28-7415001 thru 28-7715314	455-352	05-01757	\$369.95
PA28R-180	28R-7130001 thru 28R-7130019	455-322	05-01747	\$163.95	PA28-161	28-7716002 thru 28-8616057	455-352	05-01757	\$369.95
PA28-181	28-7690001 thru 28-8290174	455-350	05-01745	\$129.95	PA28-161 Cadet	2816001 thru 2816110 (Less 2816066)	455-352	05-01757	\$369.95
PA28-181	28-8390001 and On	455-350	05-01745	\$129.95	PA28-180	28-4378 thru 28-5152	455-332	05-02212	\$107.95
PA28-201T	28-7921001 thru 28-7921095	455-322	05-01747	\$163.95	PA28-180	28-5153 thru 28-5869	455-352	05-01757	\$369.95
PA28R-200	28R-30482,28R-35001 thru 28R-35830	455-322	05-01747	\$163.95	PA28-180	28-7105001 thru 28-7505261	455-352	05-01757	\$369.95
PA28R-200	28R-7130001 thru 28R-7635545	455-322	05-01747	\$163.95	PA28R-180	28R-30005 thru 28R-30481	455-322	05-01747	\$163.95
PA28R-201	28R-7737002 thru 28R-7837317	455-322	05-01747	\$163.95	PA28R-180	28R-30483 thru 28R-31279	455-322	05-01757	\$369.95
PA28R-201T	28R-7730002 thru 28R-7803372	455-322	05-01747	\$163.95	PA28R-180	28R-7130001 thru 28R-7130019	455-322	05-01757	\$369.95
PA28R-201T	28R-730001 thru 28R-2803015	455-322	05-01747	\$163.95	PA28-181	28-7690001 thru 28-8290174	455-352	05-01757	\$369.95
PA28RT-201	28R-7918001 thru 28R-8018116	455-322	05-01747	\$163.95	PA28-181	28-8390001 and On	455-352	05-01757	\$369.95
PA28RT-201	28R-8118001 and On	455-322	05-01747	\$163.95	PA28-181	28-7921001 thru 28-7921095	455-361	05-02213	\$107.33
PA28RT-201T	28R-7931001 thru 28R-8031188	455-322	05-01747	\$163.95	PA28-201T	28R-30482,28R-35001 thru 28R-35830	455-322	05-01757	\$369.95
PA28RT-201T	28R-8131001 and On	455-322	05-01747	\$163.95	PA28R-200	28R-7135001 thru 28R-7635545	455-322	05-01757	\$369.95
PA28-235	28-10003 thru 28-11039	12693-04	05-02209	\$296.95	PA28R-200	28R-7737002 thru 28R-7837317	455-322	05-01757	\$369.95
PA28-235	28-11040 thru 28-11393	455-333	05-01746	\$135.95	PA28-201	28R-730001 thru 28R-730002	455-361	05-02213	\$107.33
PA28-235	28-7110001 thru 28-7210033	455-333	05-01746	\$135.95	PA28R-201T	28R-7703002 thru 28R-7803372	455-361	05-02213	\$107.33
PA28-235	28-7310001 thru 28-7710089	455-333	05-01746	\$135.95	PA28R-201T	28R-710001 thru 28R-710002	455-361	05-02213	\$107.33
PA28-236	28-7911001 thru 28-8211060	455-333	05-01746	\$135.95	PA28R-201T	28R-710001 thru 28R-710002	455-361	05-02213	\$107.33
PA28-236	28-8311001 and On	455-333	05-01746	\$135.95	PA28RT-201	28R-7931001 thru 28R-8031188	455-361	05-02213	\$107.33
PA32-260	32-1111 thru 32-1320	455-360	05-01748	\$141.95	PA28RT-201T	28R-8131001 and On	455-361	05-02213	\$107.33
PA32-260	32-7100001 thru 32-7800008	455-360	05-01748	\$141.95	PA28RT-201T	28R-811040 thru 28-811393	455-332	05-02212	\$107.95
PA32-300	32-40000 thru 32-40565	69530-02	-	0	PA28-235	28-7110001 thru 28-7210033	455-332	05-02212	\$107.95
PA32-300	32-40566 thru 32-41018	455-358	05-01749	\$149.95	PA28-235	28-7310001 thru 28-7710089	455-332	05-02212	\$107.95
PA32-301	32-7140001 thru 32-7940282	455-358	05-01749	\$149.95	PA28-236	28-7911001 thru 28-8211060	455-332	05-02212	\$107.95
PA32-301	32-8006001 thru 32-8406020	455-358	05-01749	\$149.95	PA28-236	28-8311001 and On	455-332	05-02212	\$107.95
PA32-301T	32-8024001 thru 32-8424002	455-344	05-01750	\$101.95	PA32-260	32-1111 thru 32-1320	455-361	05-02213	\$107.33
PA32-301T	32-8524001 and On	455-344	05-01750	\$101.95	PA32-260	32-7100001 thru 32-7800008	455-361	05-02213	\$107.33
PA32R-301T	32R-8029001 thru 32R-8229078	455-360	05-01748	\$141.95	PA32-301T	32-8024001 thru 32-8424002	455-344	05-01750	\$101.95
PA32R-301T	32R-8329001 and On	455-360	05-01748	\$141.95	PA32R-301T	32-8524001 and On	455-344	05-01750	\$101.95
PA32RT-300T	32R-7887001 thru 32R-7987146	455-360	05-01748	\$141.95	PA32R-301T	32R-8029001 thru 32R-8229078	455-360	05-01748	\$141.95
PA32-300	32-40000 thru 32-40565	65451-04	05-02216	\$291.86	PA32RT-300T	32R-8329001 and On	455-360	05-01748	\$141.95

PROP CONTROLS					THROTTLE CONTROL FOR BELLANCA VIKING AIRCRAFT				
Model	Serial Number	P/N	Our P/N	Price	Model	Serial Number	Our P/N	Price	P/N S191783-18
PA24-250	24-105 thru 24-2174	455-184	05-02214	\$240.42	17-30A	30263 & On, and aircraft w/S/N prefix: "75-"	05-01763	\$279.95	
PA24-250	24-2176 thru 24-2298	455-184	05-02214	\$240.42	17-31A	73-32-128 & On, and aircraft w/S/N prefix "75-"	05-01763	\$279.95	
PA24-250	24-2175, 24-2299 thru 24-3687	455-252	05-02215	\$230.80	17-31ATC	73-31067 & On, and aircraft w/S/N prefix "75-"	05-01763	\$279.95	
PA24-260	24-3642, 24-4000 thru 24-4782	455-252	05-02215	\$230.80					
PA24-260	24-4784 thru 24-4803	455-252	05-02215	\$230.80					
PA28R-180	28R-30005 thru 28R-30481	455-322	05-01747	\$163.95					
PA28R-180	28R-30483 thru 28R-31279	455-322	05-01747	\$163.95					
PA28R-180</td									

PIPER

(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.....	\$214.95
Front Plate P/N 05-07675	\$127.95
Back Plate P/N 05-07680	\$68.75
Complete Assembly P/N 05-07685	\$298.00

PA-25 Spinner Components

Assembly for Fixed Pitch Propellers serial numbers 2986-3691	
Dome Only P/N 05-07690	\$217.95
Back Plate P/N 05-07695	\$123.95
Front Plate P/N 05-07705	\$97.75
Complete Assembly P/N 05-07710	\$438.50

Spinner Components for 235 hp. with FA8452 McCauley Propeller.	
Dome Only P/N 05-07715	\$309.95
Back Plate P/N 05-07720	\$164.95
Front Plate P/N 05-07725	\$111.95

Spinner Assembly for PA-18/18A, 150 hp.

Spinner Dome P/N 05-07730	\$232.95
Front Plate P/N 05-07735	\$88.50
Back Plate P/N 05-07740	\$136.95
Complete Assembly P/N 05-07745	\$426.95



RIB KITS FOR PIPIERS

Description	P/N	Price
J3 RIB KIT (LH)	05-02373	\$12.00
J3 RIB KIT (RH)	05-02374	\$12.00
PA18-150 RIB KIT (LH)	05-02375	\$12.00
PA18-150 RIB KIT (RH)	05-02376	\$12.00

INDIVIDUAL RIBS FOR PIPIERS

J-3

Piper#	Our P/N	Description	Price	# Per Wing
10742-002	05-02407	Tip Rib, LH #13	\$20.00	1
10742-003	05-02404	Tip Rib, RH #13	\$20.00	1
12662-002	05-02389	Nose Rib	\$20.00	10
12902-000	05-02387	Outboard Aileron Bay Rib, LH #12	\$20.00	1
12902-001	05-02393	Outboard Aileron Bay Rib, RH #12	\$20.00	1
13022-002	05-02386	3/4 Rib, #10 and #11	\$20.00	2
13022-002	05-02383	3/4 Rib, LH or RH #7	\$20.00	1
13022-002	05-02384	3/4 Rib, LH or RH #8	\$20.00	1
13022-005	05-02382	3/4 Rib, LH or RH #6	\$20.00	1
13022-006	05-02385	3/4 Rib, #9 at strut point	\$20.00	1
13042-000	05-02381	Inboard Aileron Bay Rib, LH #5	\$20.00	1
13042-001	05-02392	Inboard Aileron Bay Rib, RH #5	\$20.00	1
13052-002	05-02379	Full Rib, LH or RH #2	\$20.00	1
13052-002	05-02380	Full Rib, #3 and #4	\$20.00	2
13052-004	05-02378	Butt Rib, LH #1	\$20.00	1
13052-004	05-02391	Butt Rib, RH #1	\$20.00	1
15712-000	05-02390	Nose Rib at strut point	\$20.00	1
16192-000	05-02377	Tip Nose Rib, LH	\$20.00	1
16192-001	05-02395	Tip Nose Rib, RH	\$20.00	1

PA-18 150 hp.

Piper#	Our P/N	Description	Price	# Per Wing
10634-005	05-02396	Butt Rib, LH #1	\$20.00	1
10634-007	05-02404	Butt Rib, RH #1	\$20.00	1
10635-002	05-02397	Tank Bay Rib, #2 and #3	\$20.00	2
10653-002	05-02398	3/4 Rib, LH #4	\$20.00	1
10653-005	05-02405	3/4 Rib, RH #4	\$20.00	1
10742-002	05-02388	Tip Rib, LH #16	\$20.00	1
10742-003	05-02394	Tip Rib, RH #16	\$20.00	1
12662-002	05-02389	Nose Rib	\$20.00	10
12902-000	05-02387	Outboard Aileron Bay Rib, LH #15	\$20.00	1
12902-001	05-02393	Outboard Aileron Bay Rib, RH #15	\$20.00	1
13022-002	05-02386	3/4 Rib, #10, #13 and #14	\$20.00	3
13022-009	05-02385	3/4 Rib, LH or RH, #11	\$20.00	1
13022-010	05-02403	3/4 Rib, LH or RH, #8	\$20.00	1
13022-011	05-02386	3/4 Rib, LH or RH, #9 and #12	\$20.00	2
13042-002	05-02402	3/4 Rib, LH #7	\$20.00	1
13042-003	05-02407	3/4 Rib, RH #7	\$20.00	1
13052-007	05-02399	3/4 Rib, LH or RH, #5	\$20.00	1
13052-009	05-02406	3/4 Rib, RH #6	\$20.00	1
13052-010	05-02401	3/4 Rib, LH #6	\$20.00	1
15712-000	05-02390	Nose Rib at strut point	\$20.00	1
16192-000	05-02377	Tip Nose Rib, LH	\$20.00	1
16192-001	05-02393	Tip Nose Rib, RH	\$20.00	1

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

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Prices Subject to Change Without Notice

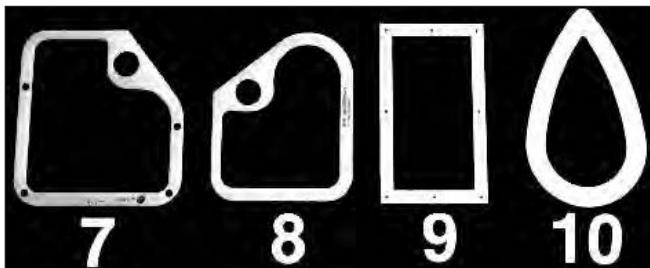
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

COMMON PIPER GROMMETS



- 1) Grommet, TailP/N 05-07750.....\$8.30
- 2) GrommetP/N 05-07755.....\$11.10
- 3) GrommetP/N 05-07765.....\$2.00
- 4) GrommetP/N 05-07770.....\$4.65
- 5) Grommet, Inspection Plate (original Piper type: 80122-49)
P/N 05-07775.....\$4.35
- 6) Grommet, StrutP/N 05-07780.....\$6.20

AP



- 7) Grommet, Tail (used on PA-25 and later PA-18's)
P/N 05-07785.....\$21.30
- 8) Grommet, TailP/N 05-07790.....\$6.80
- 9) Grommet, CoverP/N 05-07795.....\$8.00
- 10) Grommet, Pulley CoverP/N 05-07800.....\$8.20

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\$114.95

FLEXIBLE RUBBER BRAKE LINE


From brake master cylinder to copper lines on gear vee.
P/N 05-07530\$66.25

OIL PRESSURE HOSE


P/N 05-07360\$89.00

SPARS - WING TIPS - FUEL TANKS - COVES

SPARS

(302-030) Spar Blank (Rear 4")	05-30195	\$101.95
(302-030) Spar Blank (Rear 4-3/4")	05-30200	\$115.00
(302-030) Spar Blank (Rear 5-3/4")	05-30205	\$150.95
(302-040) Rear Spar Reinforcement 11'	05-30225	\$65.25

AILERON & FLAP PARTS



10' "D" Section for
Aileron/Flap
Leading Edges.



Aileron / Flap Kit
(Piper Type)



Piper Type Flap or
Aileron Hinge
Ass'y



(Steel)
Aileron Pivot Hinge
(4130 Steel)

Aileron/Flap Hinge Type (Piper type)	05-30000	\$55.00
Aileron/Flap Hinge 63"/66"	05-30020	\$58.00
Complete flap Kit Piper Type 10	05-30105	\$351.95
Aileron/Flap Hinge Machined	05-01407	\$50.00
Trailing Edge 10 Pre-Formed	05-01412	\$41.95

AILERON COVES

(335-028) Piper Type.....	05-30145	\$45.80
(340-007) Taylorcraft Type.....	05-30155	\$45.80
(310-009) Riblett GA Cove	05-30160	\$45.80

FLAP COVES

(330-015) Piper Type.....	05-30165	\$45.80
(330-012) Citabria Type	05-30170	\$45.80
(340-007) Taylorcraft Type.....	05-30175	\$45.80
(310-009) Riblett GAU 613	05-30185	\$28.60

FUEL TANKS

(325-010) Riblett 57" Fuel Tank.....	05-30345	\$495.00
(335-020) Piper Type.....	05-30350	\$593.95
(330-015) Citabria Type	05-30355	\$495.00
(340-010) Taylorcraft Type.....	05-30360	\$495.00
(315-011) Riblett 63" fuel tank.....	05-30365	\$495.00
(310-015) Riblett 66" fuel tank.....	05-30370	\$495.00
(302-060) Small, Slide-in Shelf Support	05-30330	\$16.95
(302-059) Medium, Slide-in Shelf Support	05-30335	\$16.95

WING TIPS

(330-017) Citabria Type.....	05-30065	\$425.00
(340-010) Taylorcraft Type.....	05-30360	\$495.00
(335-025) Piper Type.....	05-30070	\$425.00
(310-024) GAU 613	05-30075	\$475.00

AEROTECT AIRCRAFT PAINT PROTECTION KITS

Polished kits are designed to protect the aircraft finish which are most susceptible damage from chipping and scratching. The kits cover the main and nose wheel covers and struts. These pre-cut kits are made of 8 mil thick 3M aerospace paint protection film. This film is meant to be semi permanent and does not need to be removed before flight. Practically invisible, Aerotect kits are designed to protect the beauty of your aircraft for years to come.

Description	Part No.	Price
Lancair Columbia 350	05-01791	\$321.95
Lancair Columbia 400	05-01792	\$321.95
Lancair Legacy FG	05-01793	\$266.95
Lancair ES	05-01794	\$266.95
Lancair ESP	05-01795	\$266.95
Piper Cherokee	05-01796	\$234.95
Piper Archer	05-01797	\$234.95
Piper Six	05-01798	\$234.95
Pilatus PC-12	05-01799	\$266.95
Vans Aircraft 7-A	05-01801	\$266.95
Vans Aircraft 8-A	05-01802	\$266.95
Vans Aircraft 9-A	05-01803	\$266.95
Vans Aircraft 10-A	05-01804	\$266.95

Description	Part No.	Price
Cessna 172 Skyhawk	05-01781	\$322.95
Cessna 182 Skyline	05-01782	\$369.95
Cessna 206 Stationair	05-01783	\$318.95
Cessna 208 Caravan	05-01784	\$193.95
Cessna 210 Centurion	05-01785	\$141.95
Cirrus SR-20	05-01786	\$285.95
Cirrus SR-22	05-01787	\$285.95
Diamond DA-20	05-01788	\$169.95
Diamond DA-40	05-01789	\$169.95
Grumman American	05-01790	\$193.95

LEADING EDGES - RIBS - STRUTS - HEAT BOXES

LEADING EDGES

- (330-018) Citabria Type Leading Edge05-30115.....\$96.75
 (310-010) GAU 57" Leading Edge05-30130\$96.75
 (310-011) GAU 63" Leading Edge05-30135\$96.75
 (310-011) 66" Leading Edge05-30140\$96.75

STAMPED RIBS

- (330-001) Citabria type Stamped Ribs 05-30255\$65.25
 (325-001) Ribblet GAU 613-57"05-30275\$51.00
 (315-001) Ribblet GAU 613-63"05-30280\$56.50
 (310-001) Ribblet GAU 613-66"05-30285\$56.50
 (335-001) Piper type05-30250\$51.00
 (340-001) Taylorcraft type05-30265\$51.00

PIPER TYPE WING FITTINGS



Spar to Fuselage Attach Fitting (Casting)

- Piper Type Wing Fitting Spacer 3..05-30185\$28.60
 Piper Type Wing Strut Attach Fitting 05-30190\$12.80

ATTACH FITTINGS



Spar to Fuselage Attach Fitting (Casting)

- Spar/Fuselage Attach Fitting05-30235.....\$8.40
 Spar/Fuselage Reinforcement05-30245.....\$8.00

STRUTS / STRUT FITTINGS



6060-T6 Aluminum Struts
(Anodized)



Jury Strut to Spar Fitting

- Large Strut 4.250 x 1.6005-30290\$143.95
 Small Strut - 2.6525 x .87505-01411\$90.00
 Lower Strut end (Citabria type)05-30320\$59.25
 Lower Strut end (Cub type)05-30325\$59.25
 Strut End Block05-30315\$54.25
 Stainless Jury Strut Clamp05-01408\$28.60

AP

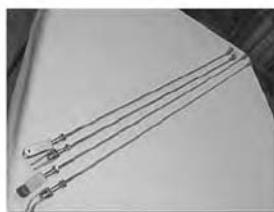
BELL CRANKS



Aileron Bell Crank 364 Aluminum T-6 Hard

- Flap Bell Crank (Piper type).....05-30040\$59.25

TAIL BRACE WIRES



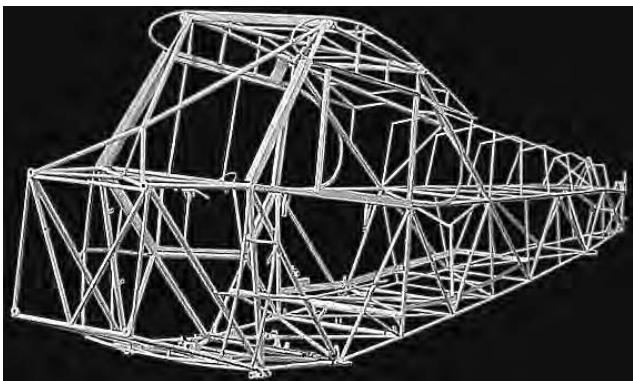
Tail Brace Wires, Complete Set.
All Stainless. Tests 225 #'s more than Original Equipment

- 302-047 Tail Brace Wires (Stainless) ..05-01386 ..\$249.00

CARB HEAT BOXES

- 65-100 Carb Heat Box - Continental....05-01387\$177.00
 or-0360 Carb Heat Box - Lycoming.....05-01388\$188.00
 Continental Carb Heat Box05-01389\$194.00

SUPERCUB PARTS



AP

**PA18 UPPER DOOR**

Constructed using all square tubing. FAA approved.

P/N 05-00459\$287.95

**PA18 LOWER DOOR**

Latching mechanism greatly improved over original. Utilizes push rods instead of wires. Powder coated.

P/N 05-00460\$460.95

**PA18 STABILIZER**

Bushings installed, powder coated and ready to cover. FAA-PMA approved.

P/N 05-00461\$345.95

**PA18 ELEVATOR**

Bushings installed, powder coated and ready to cover. FAA-PMA approved.

P/N 05-00462\$345.95

**PA18 RUDDER**

Bushings installed, powder coated and ready to cover. FAA-PMA approved.

P/N 05-00463\$373.95

**PA18 VERTICAL FIN**

Bushings installed, powder coated and ready to cover. FAA-PMA approved.

P/N 05-00464\$271.95

**CUB TYPE AXLES**

1-1/2 inch Axle, Cub Type, Weld On. FAA-PMA Approved Left and Right Axle Assemblies Sold Separately

1-1/2" (R) P/N 05-02139\$62.25

1-1/4" (L) P/N 05-02142\$62.25

**PA18 TAILPOST**

Bushings installed, powder coated and ready to cover. FAA-PMA approved.

P/N 05-00465\$62.25

\$10 CRATE CHARGE FOR ALL ITEMS ABOVE

**FLAP HINGE-OUTBOARD**

For fabric wing piper models, powder coated. FAA-PMA approved.

P/N 05-00480\$58.50

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

212

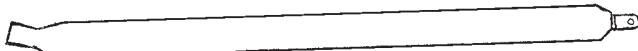
Prices Subject to Change Without Notice

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\$10,865.00

Shipped freight collect from factory in Alaska.
Add \$900 crate fee.

**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.

PA 18 Front Lift Strut -P/N 05-00485\$419.95

PA 18 High Strength Rear Lift Strut -P/N 05-00486\$471.95

PA 12-14 Front Lift Strut -P/N 05-00487\$418.95

PA 12-14 High Strength Rear Lift Strut -P/N 05-00488\$471.95

\$20 CRATE CHARGE FOR LIFT STRUTS

**PA18 ARCHES FOR
FABRIC FORMERS**

Complete set of 6 "turtle deck" arches pre-cut to correct size, weld on as is. FAA-PMA

P/N 04-00469per set \$195.95

**PA 18 WING FITTINGS**

Weld on, FAA-PMA approved.

Front left sideP/N 05-00470\$59.95

Front right sideP/N 05-00471\$59.95

Rear left sideP/N 05-00472\$35.00

Rear right sideP/N 05-00473\$35.00

**PA 18 REAR GEAR FITTING**

Weld on, FAA-PMA approved.

Left sideP/N 05-00474\$143.95

Right sideP/N 05-00475\$143.95

**PA 18 FRONT GEAR FITTING**

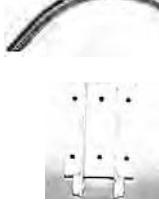
Weld on, FAA-PMA approved. Fits right or left side.

P/N 05-00476\$113.95

**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\$113.95

**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\$30.90

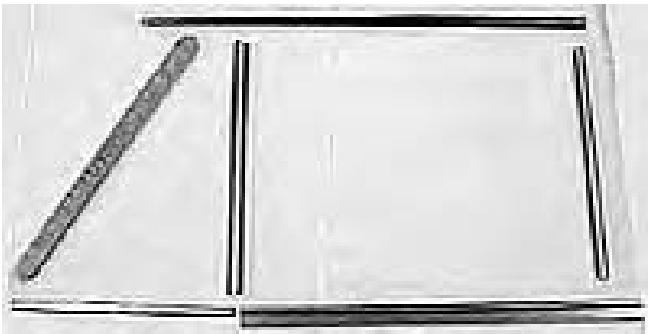
**AILERON HINGE**

For fabric wing piper models. Powder coated. FAA-PMA approved.

P/N 05-00478\$51.00

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

SUPERCUB PARTS


FRONT LOWER WINDOW CHANNEL

Left Side FAA-PMA P/N 05-00491\$14.90

AFT LOWER WINDOW CHANNEL

Left Side FAA-PMA P/N 05-00492\$51.95

FRONT WINDOW CHANNEL

Left Side FAA-PMA P/N 05-00493\$35.95

UPPER WINDOW FORMER

Left Side FAA-PMA P/N 05-00494\$42.40

FORWARD VERTICAL WINDOW CHANNEL

Left Side FAA-PMA P/N 05-00495\$42.40

AFT VERTICAL WINDOW CHANNEL

Left Side FAA-PMA P/N 05-00496\$33.20

ADDITIONAL FAA-PMA PARTS FOR PA18 SUPERCUB

Description	Part No.	Price
Lower Stabilizer brace wire attach.	05-00509	\$25.50
Piper hinge - half	05-00510	\$8.50
Interior tab	05-00511	\$2.20
Pulley bracket	05-00512	\$14.90
Pulley bracket	05-00513	\$17.00
Forward elevator pulley half	05-00514	\$18.10
Flap lever hinge - weld on fuselage or seat	05-00516	\$23.40
Flap pulley bracket	05-00517	\$13.90
Shock strut	05-00518	\$90.25
Trim cable pulley bracket	05-00519	\$9.60
fuel selector bracket	05-00520	\$20.20
Tailspring bracket	05-00521	\$37.10
Tailspring mount pad - forward	05-00522	\$26.50
Aileron pulley bracket	05-00523	\$25.50
Floorboard tabs	05-00524	\$8.50
Floorboard tabs	05-00525	\$9.60
Cabane Vee	05-00526	\$197.95
10' Spar blank	05-00529	\$46.00
Elevator horn	05-00530	\$36.10
Rudder horn	05-00531	\$41.40
RH rudder pedal assy.	05-00532	\$78.00
LH rudder pedal assy.	05-00533	\$78.00
RH brake pedal assy.	05-00534	\$68.00
LH brake pedal assy.	05-00535	\$68.00
3/8 Piper "U" channel - 4' lengths	05-00537	\$5.85
5/8 barrel assy. - weld in lift strut ends	05-00538	\$54.95
Elevator ribs - full set for one	05-00539	\$48.00
Stabilizer ribs - full set for one	05-00540	\$51.00
Pre-bent tube - front of stabilizer	05-00541	\$65.00
Exhaust stack front - PA18 150 hp	05-00542	\$451.95
Exhaust stack rear - PA18 150 hp	05-00543	\$462.95
Muffler assy. - PA18 150 hp	05-00544	\$419.95


PA18 LANDING GEAR

Specify right or left side.

1 1/4 axle, heavy duty; FAA-PMA P/N 05-00489\$507.00

1 1/2 axle, heavy duty; FAA-PMA P/N 05-00490\$454.95

EXTENDED LANDING GEAR AVAILABLE - CALL FOR QUOTE!


REAR TORQUE TUBE SUPPORT & BEARING

Weld on; FAA-PMAP/N 05-00497\$92.75


FRONT TORQUE TUBE SUPPORT & BEARING

Weld on; FAA-PMAP/N 05-00498\$92.75

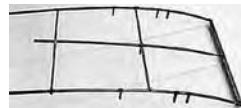

REAR STABILIZER ATTACH BRACKET

Tack welded; FAA-PMAP/N 05-00499\$84.75


HEAVY DUTY 5/8 LIFT STRUT FORK

Rolled threads, stainless, heat treated.

P/N 05-00501\$99.75


TOP DECK SUPERSTRUCTURE

P/N 05-00502\$264.95

Add \$30 crate charge


JACK SCREW TOWER

P/N 05-00503\$105.95

\$20 CRATE FEE


TAIL REPAIR SECTION - 4'

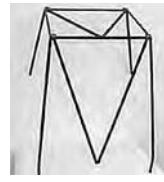
Without Jack screw tower.

P/N 05-00504\$800.00

With Jack screw tower

P/N 05-00505\$1,189.00

\$20 CRATE FEE


FIREWALL BULKHEAD REPAIR SECTION

P/N 05-00506\$797.50

\$20 CRATE FEE


1 1/2" AXLE

- Cub type, Weld on P/N 05-02139\$149.95


1 1/4" AXLE

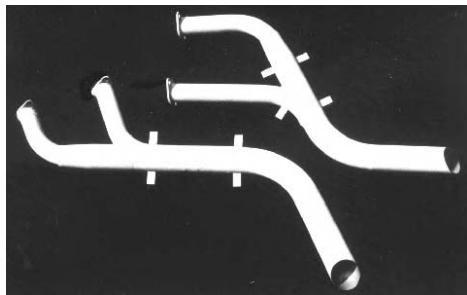
- Cub type, Weld on P/N 05-02142\$129.95

AP

LUSCOMBE

(FAA/PMA Approved)

LUSCOMBE 8E & 8F EXHAUST STACKS



Left Hand Exhaust Stack	P/N 05-07805	\$265.95
Right Hand Exhaust Stack	P/N 05-07810	\$272.95

AP

LUSCOMBE CABIN HEAT SHROUD



Fits on U09604 Stack (8E/8F) and the 8A 2-piece Stacks	P/N 05-07820	\$196.95
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CARBURETOR & CABIN HEAT SHROUD

P/N 05-08115 \$261.95



RUDDER & ELEVATOR HINGE PIN & BRACKET

Hinge Pin	P/N 05-07825	\$21.30
Hinge Pin Bracket P/N 05-07830.....		\$16.50



MISCELLANEOUS

Luscombe Gas Cap	P/N 05-07835	\$86.75
Landing Light Lens	P/N 05-07840	\$27.50
Landing Light Lens	P/N 05-07845	\$31.00



VERTICAL FIN FRONT ATTACH

Fitting P/N 05-07985 \$148.95
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 Assembly	P/N 06-14600	\$103.95
Main Leaf Only	P/N 06-14700	\$37.00



ALL-ALUMINUM LANDING GEAR FAIRING

For Standard Gear

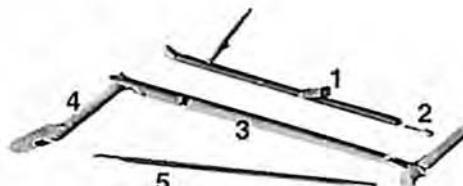
Left	P/N 05-07865	\$135.95
Right	P/N 05-07870	\$138.95

For Silflex Gear

Left	P/N 05-07875	\$173.95
Right	P/N 05-07880	\$173.95

FAA/PMA LANDING GEAR PARTS

(For Standard Gears)



Left Hand Jack Strut (1).....	P/N 05-07885	\$338.95
Right Hand Jack Strut (1)	P/N 05-07890	\$358.95
Fork End (S-9) (2)	P/N 05-07895	\$42.20
Left Hand Lower Leg (3)	P/N 05-07900	\$547.00
Right Hand Lower Leg (3)	P/N 05-07905	\$548.00
Left Hand Upper Arm (4)	P/N 05-07910	\$685.00
Right Hand Upper Arm (4)	P/N 05-07915	\$798.00
Tie Rod without fittings, 36 $\frac{1}{4}$ " long (5)	P/N 05-07920	\$95.00
Left Hand Jack Strut (Silflex)	P/N 05-07930	\$389.95
Right Hand Gear Fairing	P/N 05-07935	\$227.95

FAA/PMA WING PARTS

Left hand aileron	P/N 05-00452	\$2,179.93
Right hand aileron	P/N 05-00453	\$1,835.00
Left hand lift strut (metal wing).....	P/N 05-00454	\$1,039.00
Right hand lift strut (metal wing)	P/N 05-00455	\$1,039.00
Carry-thru spar (front or rear).....	P/N 05-00456	\$260.95

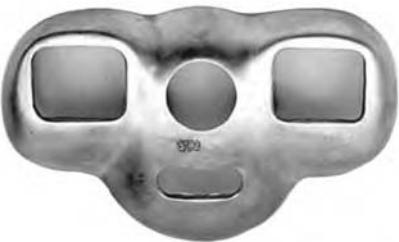
FAA/PMA TAIL SECTION PARTS

Fin, square tip	P/N 05-07940	\$1,586.00
Rudder, square tip	P/N 05-07945	\$1,005.00
Rudder Horn for square tip rudder.....	P/N 05-07950	\$70.75
Tailwheel Leaf Spring Assembly	P/N 06-14600	\$103.95
Main Leaf only	P/N 06-14700	\$37.00
Rudder & Elevator Hinge Pin.....	P/N 05-07970	\$19.90
Rudder & Elevator Hinge Pin Bracket	P/N 05-07975	\$13.60

LUSCOMBE

(FAA/PMA APPROVED)

ALL ALUMINUM COWLING



Nose Cowl	P/N 05-07990	\$894.00
Bottom Cowl	P/N 05-07995	\$497.50
Top Cowl	P/N 05-08000	\$224.27
L/H Cowl	P/N 05-08005	\$99.00
R/H Cowl	P/N 05-08010	\$99.00

Note: Cowling is trimmed oversize requiring a finish trim for each individual airplane.



FIREWALL DISHPAN

Used on Luscombe with an electrical system.

P/N 05-08015\$351.95



FIREWALL TO ENGINE MOUNT RUBBER BUSHING

6 ea. required per aircraft.

P/N 05-08020\$27.40



LUSCOMBE ENGINE MOUNT

For all Continental powered Luscombe, A-65 thru C-90

P/N 05-08025\$1,019.00

MANUALS



- 8A Owner's Manual P/N 13-00230\$3.40
- 8E Owner's Manual P/N 13-00235\$3.45
- 8 Series Master Parts List, illustrated P/N 13-00240\$14.85
- Service Manual, early fabric wings P/N 13-00245.....\$11.95

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

BLANK INSTRUMENT PANEL



P/N 05-08030\$336.95

CONTROL CABLES (Galvanized)



AP

Brake Cable Assembly	P/N 05-08035	\$48.90
Elevator Cable, SN 1-4199.....	P/N 05-08040	\$84.75
Elevator Cable, SN 4200 and up	P/N 05-08045	\$90.75
Left Hand Rudder Cable.....	P/N 05-08050	\$74.50
Right Hand Rudder Cable	P/N 05-08055	\$74.50
Stick to Aileron Cable	P/N 05-08065	\$98.75
Left Hand or Right Hand Aileron Balance Cable. 16 ft., 7/8 in.	P/N 05-08070	\$75.25
Left Hand or Right Hand Aileron Balance Cable. 15 ft., 10-3/4 in.	P/N 05-08075	\$61.25
Forward Trim Cable	P/N 05-08080	\$82.75
Aft Trim Cable Assembly (2 req'd)	P/N 05-08085	\$107.95

8A EXHAUST COMPONENTS *Fits all A-65 Continental Engines*



Rear Crossover	P/N 05-08090	\$155.95
Left Hand Stack	P/N 05-08095	\$173.95
Right Hand Stack	P/N 05-08100	\$173.95
Exhaust Clamp	P/N 05-08105	\$34.70
Complete Assembly (includes 2 exhaust clamps)	P/N 05-08110	\$563.00

LUSCOMBE 8A CARBURETOR & CABIN HEAT SHROUD

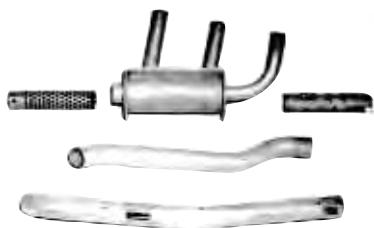


Fits on U8627-5 StackP/N 05-08115\$261.95

STINSON

(Type Certificate Approved)

EXHAUST SYSTEM



(1) Muffler
SN 1-3109P/N 05-08120\$644.00
SN 3110 and upP/N 05-08125\$645.95
Perforated Tube
SN 1-3109P/N 05-08130\$168.95
(3) Perforated Tube
SN 3110 and upP/N 05-08135\$170.95
(4) Tailpipe, Left Hand
SN 112-3109P/N 05-08140\$252.36
SN 3110 and upP/N 05-08145\$224.95
(5) Tailpipe, Right Hand
SN 112-3109P/N 05-08150\$268.95
SN 3110 and upP/N 05-08155\$206.95

AP

HEAT SHROUDS



Carb. Heat Shroud	P/N 05-08165	\$220.95
Cabin Heat Shroud, For SN 744 & up	P/N 05-08170	\$196.95
Shroud Clip	P/N 05-08175	\$32.00

COMPLETE SPINNER ASSEMBLIES

Ready for installation for Stinson with
wood or metal propellers.



Wood Propeller Spinner Assembly	P/N 05-08180	\$427.95
Metal Propeller Spinner Assembly	P/N 05-08185	\$437.95

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

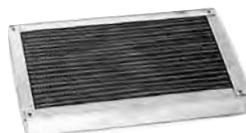


Gauge	P/N 05-08200	\$147.95
Sender	P/N 05-08205	\$217.95



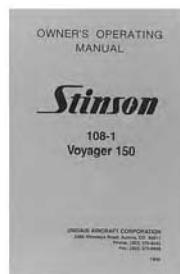
RUDDER ARM

P/N 05-08210	\$74.37
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CARBURETOR AIR FILTER

For Franklin 150-165 hp. Stinson 108 Series	P/N 05-08215	\$65.75
Leading Edge Slat for all 108 Series	P/N 05-08220	\$327.95
Leading Light Lens	P/N 05-08225	\$40.75



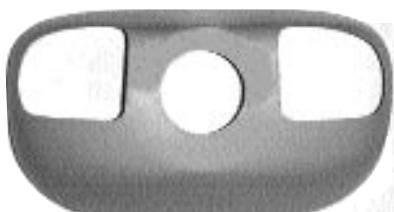
STINSON MANUALS

108 Series Parts Catalog	P/N 05-08230	\$15.70
General Service Manual	P/N 05-08235	\$25.90
Service Bulletins and Letters	P/N 05-08240	\$16.70
Stinson Specs, ADs and STCs	P/N 05-08245	\$7.40
108 CAA Operating Limits	P/N 05-08250	\$3.95
108-1 CAA Operating Limits	P/N 05-08255	\$4.50
108-2 CAA Operating Limits	P/N 05-08265	\$3.95
108-3 CAA Operating Limits	P/N 05-08270	\$4.10
108-1 Owner's Manual	P/N 05-08275	\$9.70
108-2 Owner's Manual	P/N 05-08280	\$9.85
108-3 Owner's Manual	P/N 05-08285	\$9.90
108-1 Seaplane Operating Limits	P/N 05-08290	\$4.50
108-2 Seaplane Operating Limits	P/N 05-08295	\$4.50
108-3 Seaplane Operating Limits	P/N 05-08300	\$4.50
108 Ski-Plane Supplement	P/N 05-08305	\$1.28
108-1 Ski-Plane Supplement	P/N 05-08310	\$1.31
Appendix A Supplement	P/N 05-08315	\$1.20
Stinson Story of Aircraft Progress	P/N 05-08320	\$14.70
Stinson Time-Speed-Distance Computer....	P/N 05-08325	\$7.60
Stinson Computer Instructions	P/N 05-08330	\$4.25

STINSON

(Type Certificate Approved)

ALUMINUM NOSE COWL



Applicable to 108 through 108-3 series Stinsons.

Nose Cowl	P/N 05-08335	\$698.00
Bottom Cowl.....	P/N 05-00086	\$1,275.00
Left side Cowl	P/N 05-00087	\$689.00
Right side Cowl	P/N 05-00088	\$690.00



LANDING GEAR FAIRINGS

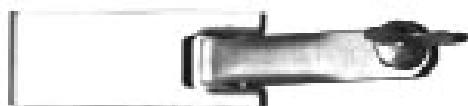
Left Fairing	P/N 05-08340.....	\$208.95
Right Fairing	P/N 05-08345.....	\$208.95



FUSELAGE TO LANDING GEAR FILLETS

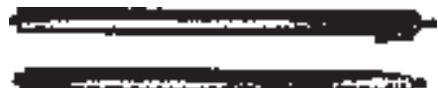
Left	P/N 05-08350.....	\$313.95
Right.....	P/N 05-08355.....	\$302.95

ENGINE COWL LEVER ASSEMBLY



Cowl Fastener Assembly	P/N 05-08365	\$59.50
Cowl Fastener Pin	P/N 05-08370	\$0.45
Cowl Fastener Receptacle	P/N 05-08375	\$1.44
Receptacle Cup	P/N 05-08380	\$16.40

WING LIFT STRUTS



Front Strut	P/N 05-08385.....	\$850.00
Rear Strut.....	P/N 05-08390.....	\$798.50



LANDING LIGHT LENS

P/N 05-08225..... \$40.75

PITOT TUBE



P/N 05-08395..... \$175.00

AP



CONTROL SURFACE BEARING

P/N 05-08400..... \$23.00

CONTROL CABLES

DESCRIPTION	NO. REQ'D	P/N	PRICE
Aileron Idler Cable	2	P/N 05-08405	\$69.75
Aileron Control Cable	2	P/N 05-08410	\$64.00
Flap Control Cable	2	P/N 05-08415	\$61.00
Rudder Cable—1946, 1947	2	P/N 05-08420	\$77.25
Rudder Cable, 1948	2	P/N 05-08425	\$98.25
Aileron Idler Cable (in fuselage)	1	P/N 05-08430	\$42.70
Control Column Cable, Left Half	1	P/N 05-08435	\$90.25
Control Column Cable, Right Half	1	P/N 05-08440	\$90.25
"Up" Elevator Cable	1	P/N 05-08445	\$66.25
"Down" Elevator Cable	1	P/N 05-08450	\$66.25
Upper Flap Control Cable (in fuselage)	1	P/N 05-08455	\$62.25
Elevator Tab Control Cable, SN 1 thru 2249	1	P/N 05-08465	\$50.25
Elevator Tab Control Cable, SN 2250 and up	1	P/N 05-08470	\$47.50
Rudder Trim Cable, SN 2250 and up	2	P/N 05-08475	\$43.30
Rudder Trim Driver Cable, SN 2250 and up	1	P/N 05-08480	\$57.00



STRUT FILLETS

Rear Lift Strut Upper Fillet	P/N 05-08485	\$119.95 ea.
Left P/N 05-08490		\$119.95 ea.
Forward Lift Strut Upper Fillet		
Left P/N 05-08495		\$53.75 ea.
Right P/N 05-08500		\$58.75 ea.
Lift Strut, Lower Fillet, left	P/N 05-08505	\$126.95 ea.
Lift Strut, Lower Fillet, right	P/N 05-08510	\$126.95 ea.

AERONCA - CHAMPION - CITABRIA

(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	\$448.69
7AC Rear Strut	P/N 05-08520	\$285.95
11AC Front Strut	P/N 05-08525	\$449.95
11AC Rear Strut	P/N 05-08530	\$327.95
Citabria Front Strut	P/N 05-08535	\$399.95
Citabria Rear Strut	P/N 05-08540	\$285.05
Decathlon Front Strut, Left	P/N 05-08545	\$600.00
Decathlon Front Strut, Right	P/N 05-08550	\$596.00
Decathlon Rear Strut	P/N 05-08555	\$275.95
Scout Front Strut	P/N 05-08565	\$317.95
Scout Rear Strut	P/N 05-08570	\$269.95

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WING LIFT STRUT FORK

P/N 05-08575



7AC CONTROL CABLES (Galvanized Steel)

Short Aileron Cable (2 req'd)	P/N 05-08580	\$25.90
Rudder Cable, Long (2 req'd)	P/N 05-08585	\$69.75
Rudder Cable, Short (2 req'd)	P/N 05-08590	\$66.50
Aileron Control Cable (4 req'd)	P/N 05-08595	\$46.60
Brake Cable and Housing Assembly (2 req'd), (PMA App.)	P/N 05-08600	\$87.25
Brake Cable Only (2 req'd)	P/N 05-08605	\$37.40
Down Elevator Cable (1 req'd)	P/N 05-08610	\$109.95
Aeronca Cowl Elevator Cable	P/N 05-08615	\$90.75
Trim Cable (2 req'd)	P/N 05-08620	\$66.00
Up Elevator Cable (1 req'd)	P/N 05-08625	\$81.25



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

\$217.95

RH Stack

P/N 05-08710

\$216.95

Heat Muff

P/N 05-08715

\$171.95



CITABRIA FUEL VENT DEFLECTOR

P/N 05-08655

\$46.60



STAINLESS STEEL TAILBRACE WIRE

7AC, 7EC, 7FC—Upper & Lower

Citabria, Decathlon, Scout—Lower

1. Wire Only

P/N 05-08665

\$24.80

3. Assembly

P/N 05-08670

\$48.27

Citabria, Decathlon, Scout—Upper

2. Wire Only

P/N 05-08675

\$24.80

4. Assembly

P/N 05-08680

\$48.27



ALL ALUMINUM COWLING

Nose Cowl

P/N 05-08685

\$901.00

Fuselage Cowl (7AC only) P/N 05-08690

\$559.00

Top Cowl

P/N 05-08695

\$314.95

Bottom Cowl

P/N 05-08700

\$247.95



LANDING GEAR U-BOLTS

Citabria/Decathlon

P/N 05-08645

\$104.95

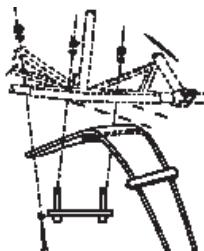
Scout (new style)

P/N 05-08650

\$97.75

(Hardware required—see below)

LANDING GEAR ATTACH HARDWARE FOR CITABRIA, DECATHLON, SCOUT



For Citabria and Decathlon

Nut (6 required)

P/N 05-08720

\$8.60

Bolt (2 required)

P/N 05-08725

\$22.70

Cupped Washer (2 req.) P/N 05-08730

\$0.61

Washer (6 required)

P/N 05-08735

\$0.30

For Scout

Nut (6 required)

P/N 05-08720

\$8.60

Bolt (2 required)

P/N 05-08745

\$10.10

Cupped Washer (2 req.) P/N 05-08730

\$0.61

Washer (6 required)

P/N 05-08735

\$0.30

OLEO SHOCK STRUT



Fits 7ECA, 7GCAA and 7GCBC:

with High Energy Taxi Spring

P/N 05-08740

\$944.00

with Standard Spring

P/N 05-08750

\$880.00

Fits 7AC and 11AC

P/N 05-08755

\$634.00

7AC and 11AC Spring Only

P/N 05-08760

\$66.75



LANDING GEAR OLEO CASE FRAME

Oleo Case Frame (Uncovered)

7AC & 11AC Series

P/N 05-08765

\$498.95

Early Citabria

P/N 05-08770

\$498.95



TAILWHEEL LEAF SPRINGS – COMPLETE SETS

Citabria/Decathlon (short)

P/N 05-08780

\$103.95

Scout (long)

P/N 05-08785

\$119.95



LANDING GEAR AXLE ASS'Y. FOR AERONCA & CITABRIA

Early Citabria Axle Strut

P/N 05-08790

\$737.00

Aeronca Axle Strut

P/N 05-08795

\$591.00

ERCOUPE – FORNEY – ALON – MOONEY

(Type Certificate Approved)

ALL ALUMINUM COWLING



Nose Cowl Assemblies

With no cold air intake hole	P/N 05-08800	\$655.00
With cold air intake hole	P/N 05-08805	\$670.00

Side Cowl Assemblies

DZUS Fasteners	P/N 05-08810	\$473.95
CAMLOC Fasteners	P/N 05-08815	\$458.95

Bottom Cowls

P/N 05-08820	\$493.95
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SPARK PLUG FAIRINGS



Mooney Fairing (top in photo, approx. 17 inches long) P/N 05-08825	\$67.75
Ercoupe Fairing (bottom in photo, approx. 14-3/4 inches long) P/N 05-08830	\$54.75



ERCOUPE ENGINE MOUNT

P/N 05-08835	\$1,880.00
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FILLER NECK GROMMET

P/N 05-08840	\$12.80
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NOSE GEAR STEERING BALL

This is the original type steering ball as used on Ercoupe, Forney and Alon. P/N 05-08845	\$10.70
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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	\$4.85
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Washer (SN 813 and up) (14 required per plane) P/N 05-08855	\$10.80
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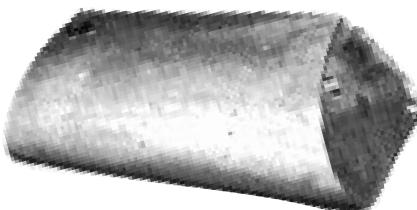
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6 GALLON FUSELAGE TANKS



For Ercoupe, welded alum., SN 2623 & up P/N 05-08865	\$1,475.00
For Forney, Alon.....P/N 05-08870	\$1,350.00
For M-10P/N 05-08875	\$1,226.00

WELDED 9-GALLON WING TANK



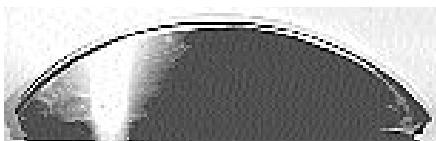
For Forney, Alon and M-10 Models with gauge in left hand tank. Left Hand Tank (48147)	P/N 05-08885	\$1,501.00
Right Hand Tank	P/N 05-08890	\$1,501.00



CARBURETOR HEAT SHROUD

<i>For all Ercoupe models</i> P/N 05-08895	\$131.95
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BLANK INSTRUMENT PANEL



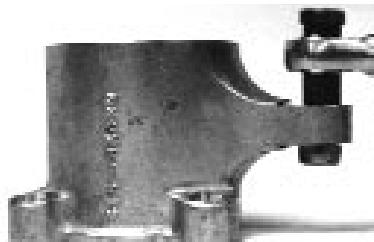
Lay out your instrument and radio arrangement using this blank Ercoupe Panel which has locating holes only for the two control columns. FAA field approval required.

P/N 05-08900	\$253.95
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ERCOUPE-FORNEY-ALON-MOONEY-TAYLORCRAFT

(TYPE CERTIFICATE APPROVED)

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	\$87.25	
Push Rod	P/N 05-08910	\$130.95

AP

EXHAUST SYSTEM FOR ERCOUPE 415 SERIES & EARLY FORNEY



Left Hand Stack (stainless)	P/N 05-08920	\$478.95
Right Hand Stack (Stainless)	P/N 05-08930	\$528.00
Muffler.....	P/N 05-08935	\$634.00
Carburetor Heat Shroud.....	P/N 05-08940	\$115.95
Cabin Heat Shroud.....	P/N 05-08945	\$47.00



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

\$24.20



AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

220

Prices Subject to Change Without Notice

(FAA/PMA APPROVED)

ENGINE MOUNT

For 65 hp. Continental	P/N 05-08955	\$562.00
For 85 hp. Continental	P/N 05-08960	\$743.00



EXHAUST SYSTEM

For all 65 hp. Continental engines in B series through BC 12 series.
P/N 05-08965

\$742.00

B, BC, & LIFT STRUTS (Oiled and sealed)

Front strut	P/N 05-08970	\$627.00
Rear strut	P/N 05-08975	\$567.00

LEADING EDGE SKINS



Outboard Leading Edge (54 1/4")	P/N 05-08980	\$66.50
Center Leading Edge (57 1/4")	P/N 05-08985	\$77.50
Inboard Leading Edge (64")	P/N 05-08990	\$77.50



HEAT SHROUD

P/N 05-08995

\$696.00



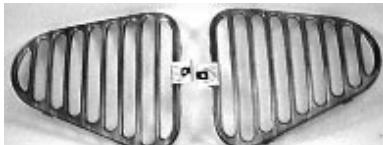
ALUMINUM NOSE COWL

Applicable to B series and BC12D Continental powered Taylorcraft (cowl grills not included)

P/N 05-09005

\$686.00

NOSE COWL GRILLS



Stamped aluminum grills with natural aluminum finish. For all standard Taylorcraft nose cowls.

Left Grill

P/N 05-09010

\$44.30

Right Grill

P/N 05-09015

\$42.60



TAILWHEEL SPRING SET

P/N 05-09020

\$102.95

AIRCRAFT SPRUCE EAST
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