

HARDWARE

AIRCRAFT WASHERS

The standard washer is 1/16 inch thick and is available in two types for each of the most commonly used bolt diameters. The smaller diameter washer is known as the AN960, and the larger diameter washer, the AN970. The larger washer is often called a wood washer because it is used most frequently against wood surfaces to provide a larger bearing surface.

Plain washers are used in bolt installations to present a smooth level bearing surface for either the bolt head or nut - sometimes both. Use a washer under the part to be torqued, be it the nut or bolt head or under both if you deem it necessary. Any place a bolt is not perpendicular to the surface may require the use of a tapered shim or specially made tapered washer.

Since bolt lengths are made in 1/8 inch increments, washers may sometimes be necessary to obtain the correct grip length for a bolt that is a little too long. A maximum of two standard 1/16 inch thick washers are sufficient to correct for a slightly long bolt. If not, use the next size shorter bolt.

Steel lock washers may be used as a locking feature for plain nuts but do not place a steel lock washer against an aluminum alloy nut or aluminum fitting.

NUTS

If you are a newcomer to the realm of homebuilt aircraft and aircraft maintenance, you may be surprised to learn that aircraft bolts do not come with nuts. Each nut and bolt is bought separately. Primarily, I suppose, because of the very large variety of nuts which are available for specific aircraft requirements.

Aircraft nuts have no identifying markings or lettering on them, but they are made of the same material as the bolts.

All nuts can be started with fingers. If a nut gives you trouble in this regard, better recheck the threads - they may be coarse instead of fine. Aircraft nuts and bolts do sometimes have coarse threads although they are rarely used by homebuilders.

SHEAR NUT

Shear nuts, either the self-locking or castle types,

are easily recognized. They are those thin looking nuts, and they are used most often with clevis bolts. Never use shear nuts where the installation is subjected to tension loading.

SELF-LOCKING NUTS & NUT SAFETY FEATURES

All nuts/bolt installations in your aircraft should have some safety features to prevent their loosening in service. Methods employed include the self-locking nuts, cotter-key combinations, jam nuts, lock washers, palnuts, and still found in primitive areas, peening of the bolt end with a hammer.

Self-locking nuts are, by far, the most commonly used type of nuts as they require no external help for safetying. The nuts feature an integral safetying provision as part of their construction.

Self-locking nuts are used because they provide tight shake-proof installations which can withstand continued severe vibration. They must not; however, be used in any joint or connection where either the nut or bolt is subject to rotation. Self-locking nuts may be used with any anti-friction bearings (rod ends) or control pulleys but only if the inner race of the bearing is clamped to a fitting (or part of the structure) by a bolt and nut.

The two types of self-locking nuts (all-metal type and fiberlock type) are interchangeable except that the fiberlocking type may not be used in locations where the temperatures exceed 250° F. Metal self-locking nuts are used in places where temperatures exceed 250° F and may run as high as 400° F. Elastic stop nuts may be reused many times, certainly until the fiber has lost its locking friction or has become brittle with age. If you can turn the nut up all the way with your fingers, replace it.

CASTLE NUTS

These nuts have no self-locking provision so they must be secured to the bolt mechanically with a cotter pin or safety wire or some sort of clip, otherwise they might loosen under vibration. The castle nut is slotted and requires a bolt with a drilled hole to accept a cotter pin. Regular castle nuts are rugged

and capable of withstanding high tension loads. Be careful when using a castle nut on a clevis bolt in the control system where rudder pedals or other linkage might interfere with other parts. Cotter pins have a way of snagging.

TORQUING

Except as a last resort, do not torque a bolt by turning it.

Tighten or torque castellated nuts as you would any other standard nut. If the slots and cotter pin hole in the bolt will not line up for safetying, tighten the nut to the next slot even though the recommended torque values will be exceeded. This over torquing leeway applies only to castle nuts and not others. Cotter pins when used should fit snugly but not so tight you have to hammer them into the bolt hole. Bend the ends so that one end is over the end of the bolt reaching to its center or slightly beyond. The other leg is bent snugly against the nut.

Coarse threads require slightly less torque and so do shear nuts. Actually, about 1/2 the amount of torque is sufficient for them.

And, finally, even if you don't use a torque wrench - no self-respecting homebuilder will ever allow himself to be caught using a pair of pliers to tighten a nut.

BOLTING PRACTICES

One of the most common methods of securely joining two objects together is the use of a bolt-nut combination. This provides a unit which has a predictable strength, unless the bolt has been improperly installed. If this happens, strength is substantially reduced and failure may result.

Aircraft bolts are about .001 to .003 inch smaller than their nominal diameter, permitting easy installation in a properly drilled hole. The hole should be drilled such that the head of the bolt will lie solidly against the surface of the metal, as seen in the figure. Burrs around the edge of the hole should be removed before the bolt is inserted. Bolts are generally used in some shear application, therefore the smooth shank should extend entirely through the hole. No threads should be in contact with the bearing surface, as seen in the figure.

Most applications using bolts require the use of a washer. The proper washer for the job must be carefully chosen. The bolt installation is complete when the unit has been torqued to the specification set down by the manufacturer.

SAFETYING

Apply to all types of bolts, fillister head screws, square head plugs. Directions of twist from the second to the third unit is counterclockwise to keep the loop in position against the head of the bolt. The wire entering the hole in the third unit will be the lower wire and by making a counterclockwise twist after it leaves the hole, the loop will be secured in place around the head of that bolt.

Methods for wiring various standard items. Note: The wire may be wrapped over the unit rather than around it when wiring castellated nuts or other items where there is a clearance problem.



HARDWARE

BASIC "AN" PART NO.	THREAD	T	RATED STRENGTH (POUNDS)					
			ULTIMATE TENSIL AT ROOT DIA		YIELD TENSILE AT ROOT DIA		SINGLE SHEAR AT FULL DIA	
			STEEL	ALUM ALLOY	STEEL	ALUM ALLOY	STEEL	ALUM ALLOY
AN3	10-32	NF-3A	2,210	1,100	1,690	710	2,125	990
AN4	1/4-28	UNF-3A	4,080	2,030	3,130	1,310	3,680	1,715
AN5	5/16-24	UNF-3A	6,500	3,220	4,980	2,080	5,750	2,685
AN6	3/8-24	UNF-3A	10,100	5,020	7,740	3,240	8,280	3,870
AN7	7/16-20	UNF-3A	13,600	6,750	10,430	4,350	11,250	5,250
AN8	1/2-20	UNF-3A	18,500	9,180	14,190	5,920	14,700	6,850
AN9	9/16-18	UNF-3A	23,600	11,700	18,100	7,550	18,700	8,700
AN10	5/8-18	UNF-3A	30,100	14,900	23,080	9,610	23,000	10,750
AN12	3/4-16	UNF-3A	44,000	21,800	33,730	14,100	33,150	15,500
AN14	7/8-14	UNF-3A	60,000	29,800	46,000	19,200	45,050	21,050
AN16	1-14	NF-3A	80,700	40,000	61,870	25,800	50,980	21,500
AN17	1-12	UNF-3A	80,700	40,000	61,870	25,800	58,900	27,500
AN18	1-1/8-12	UNF-3A	101,800	50,500	78,050	32,600	73,750	34,500
AN20	1-1/4-12	UNF-3A	130,200	64,400	99,820	41,500	91,050	42,500

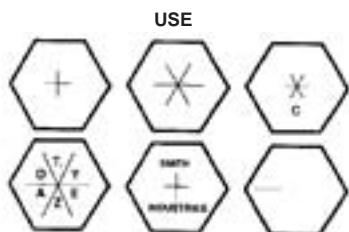


A N 3 - 14 A

Diameter in
1/16th of an
inch

A: Undrilled shank
No letter: Drilled shank

First number: Length in whole inches
Second or only number: additional 1/8ths inches



(Corrosion Resistant)



Aluminum bolt:
Half as strong as steel
Use only if specified

Non-certified bolt:
NOT for aircraft use.

ALL "AN" BOLTS HAVE:
GRIP TOLERANCE OF +/- 1/16
NOMINAL LENGTH TOLERANCE OF + 1/32 - 1/64

MATCHING BOLTS - NUTS - WASHERS

SIZE THREAD	ELASTIC STOP NUT		METAL Nut	CASTLE NUTS		COTTER Pin	STEEL FLAT WASHERS		
	Thin	Regular		Regular	Shear		Regular	Thin	Wide
1032 AN3	MS20364-1032	MS20365-1032	AN363-1032	AN310-3	AN320-3	MS24665-132	AN960-10	AN960-10L	AN970-3
1/4-28 AN4	MS20364-428	MS20365-428	AN363-428	AN310-4	AN320-4	MS24665-132	AN960-416	AN960-416L	AN970-4
5/16-24 AN5	MS20364-524	MS20365-524	AN363-524	AN310-5	AN320-5	MS24665-132	AN960-516	AN960-516L	AN970-5
3/8-24 AN6	MS20364-624	MS20365-624	AN363-624	AN310-6	AN320-6	MS24665-283	AN960-616	AN960-616L	AN970-6
7/16-20 AN7	MS20364-720	MS20365-720	AN363-720	AN310-7	AN320-7	MS24665-283	AN960-716	AN960-716L	AN970-7
1/2-20 AN8	MS20364-820	MS20365-820	AN363-820	AN310-8	AN320-8	MS24665-283	AN960-816	AN960-816L	AN970-8

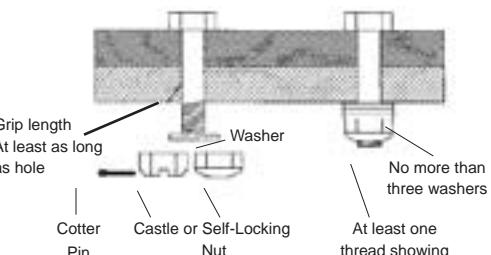
TORQUE VALUES OIL-FREE CADMIUM-PLATED THREADS		
NUTS		
BOLT SIZE	Tension type MS20365 AN310 40,000 PSI	Shear-type MS20364 AN320 24,000 PSI
8-32	12-15	7-9
10-32	20-25	12-15
1/4-28	50-70	30-40
5/16-24	100-140	60-85
3/8-24	160-190	95-110
7/16-20	450-500	270-300
1/2-20	480-690	290-410

Torque values in inch-pounds for tightening nuts.

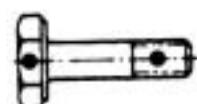
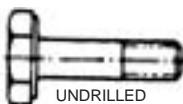
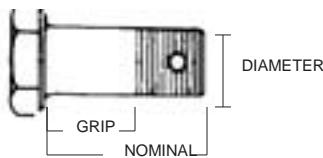
To obtain values in foot-pounds,
divide inch-pounds by 12.

Bolt heads UP & FORWARD when possible.

NO elastic stop nuts in engine compartment.



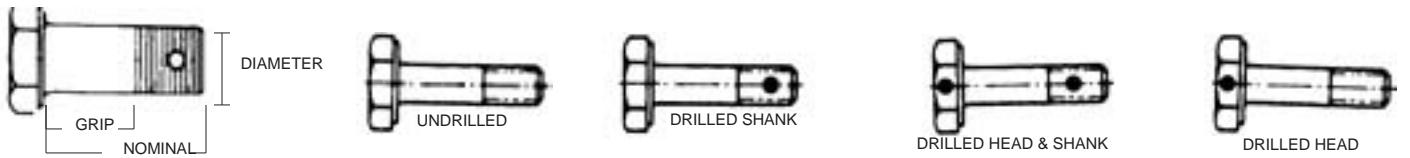
HARDWARE



AN3 - 3/16" 1032					
LENGTH NOM.GRIP	DRILLED SHANK	UNDRILLED SHANK	DRILLED HEAD & SHANK	DRILLED HEAD ONLY	
	PART NO.	PRICE EA.	PART NO.	PRICE EA.	PART NO.
15/32 1/16	AN3-3 0.45	AN3-3A 0.19		AN3H-3A 0.55	
17/32 1/8	AN3-4 0.55	AN3-4A 0.27	AN3H-4 1.43	AN3H-4A 0.69	
21/32 1/4	AN3-5 0.68	AN3-5A 0.27		AN3H-5A 0.73	
25/32 3/8	AN3-6 0.63	AN3-6A 0.31	AN3H-6 1.59	AN3H-6A 0.58	
29/32 1/2	AN3-7 0.52	AN3-7A 0.31		AN3H-7A 0.59	
1-1/32 5/8	AN3-10 0.82	AN3-10A 0.37		AN3H-10A 0.53	
1-5/32 3/4	AN3-11 0.55	AN3-11A 0.39		AN3H-11A 0.53	
1-7/32 7/8	AN3-12 0.64	AN3-12A 0.35		AN3H-12A 0.56	
1-13/32 1	AN3-13 0.59	AN3-13A 0.43		AN3H-13A 0.56	
1-17/32 1-1/8	AN3-14 0.54	AN3-14A 0.34		AN3H-14A 0.58	
1-21/32 1-1/4	AN3-15 0.57	AN3-15A 0.42	AN3H-15 1.04	AN3H-15A 0.94	
1-25/32 1-3/8	AN3-16 0.57	AN3-16A 0.38		AN3H-16A 0.83	
1-29/32 1-1/2	AN3-17 0.55	AN3-17A 0.45		AN3H-17A 0.89	
2-1/32 1-5/8	AN3-20 0.86	AN3-20A 0.50		AN3H-20A 0.96	
2-5/32 1-3/4	AN3-21 0.69	AN3-21A 0.44			
2-9/32 1-7/8	AN3-22 0.63	AN3-22A 0.48		AN3H-22A 0.76	
2-13/32 2	AN3-23 0.75	AN3-23A 0.49		AN3H-23A 0.98	
2-17/32 2-1/8	AN3-24 0.76	AN3-24A 0.55		AN3H-24A 0.99	
2-21/32 2-1/4	AN3-25 0.86	AN3-25A 0.58	AN3H-25 0.84	AN3H-25A 1.35	
2-25/32 2-3/8	AN3-26 1.05	AN3-26A 0.56		AN3H-26A 1.60	
2-29/32 2-1/2	AN3-27 0.79	AN3-27A 0.58			
3-1/32 2-5/8	AN3-30 0.70	AN3-30A 0.62			
3-5/32 2-3/4	AN3-31 0.77	AN3-31A 0.68			
3-9/32 2-7/8	AN3-32 1.15	AN3-32A 0.69			
3-13/32 3	AN3-33 0.99	AN3-33A 0.88			
3-17/32 3-1/8	AN3-34 1.09	AN3-34A 0.82			
3-21/32 3-1/4	AN3-35 1.90	AN3-35A 1.59		AN3H-35A 1.74	
3-25/32 3-3/8	AN3-36 2.39	AN3-36A 1.96			
3-29/32 3-1/2	AN3-37 2.19	AN3-37A 1.49			
4-1/32 3-5/8	AN3-40 1.45	AN3-40A 1.36			
4-5/32 3-3/4	AN3-41 2.20	AN3-41A 1.61			
4-9/32 3-7/8	AN3-42 na	AN3-42A 2.10			
4-13/32 4	AN3-43 3.50	AN3-43A 2.06			
4-17/32 4-1/8	AN3-44 2.39	AN3-44A 3.08			
4-21/32 4-1/4	AN3-45 na	AN3-45A 3.49		AN3H-45A 3.68	
4-25/32 4-3/8	AN3-46 3.88	AN3-46A 3.64			
4-29/32 4-1/2	AN3-47 5.25	AN3-47A 3.85			
5-1/32 4-5/8	AN3-50 8.48				
5-5/32 4-3/4	-	AN3-51A 8.33			
5-9/32 4-7/8	-	AN3-52A 8.30			
5-13/32 5	-	-	-		
5-17/32 5-1/8	-	AN3-54A 10.00			
5-21/32 5-1/4	-	AN3-55A 6.75			
5-25/32 5-3/8	-	-			
5-29/32 5-1/2	-	-	-		
6-1/32 5-5/8	AN3-60 8.00	AN3-60A 7.88			
6-5/32 5-3/4	-	-	-		
6-9/32 5-7/8	-	-	-		
6-13/32 6	-	AN3-63A 7.52			
6-17/32 6-1/8	-	AN3-64A 9.75			
6-21/32 6-1/4	-	-	-		
6-25/32 6-3/8	-	-			
6-29/32 6-1/2	-	-	-		
7-1/32 6-5/8	-	-			
7-5/32 6-3/4	-	-			
7-9/32 6-7/8	-	-			
7-13/32 7	-	-			
7-17/32 7-1/8	-	-			
7-21/32 7-1/4	-	-			
7-25/32 7-3/8	-	-			
7-29/32 7-1/2	-	-			
8-1/32 7-5/8	-	-			

AN4 - 1/4" -28					
LENGTH NOM.GRIP	DRILLED SHANK	UNDRILLED SHANK	DRILLED HEAD & SHANK	DRILLED HEAD ONLY	
	PART NO.	PRICE EA.	PART NO.	PRICE EA.	PART NO.
15/32 1/16	AN4-3 0.55	AN4-3A 0.35			AN4H-3A 0.49
17/32 1/8	AN4-4 0.57	AN4-4A 0.30			AN4H-4A 0.67
21/32 3/16	AN4-5 0.55	AN4-5A 0.29	AN4H-5 1.35		AN4H-5A 0.55
25/32 5/16	AN4-6 0.60	AN4-6A 0.32	AN4H-6 2.69		AN4H-6A 0.69
29/32 7/16	AN4-7 0.59	AN4-7A 0.32			AN4H-7A 0.88
1-1/32 9/16	AN4-10 0.61	AN4-10A 0.40	AN4H-10 1.43		AN4H-10A 0.85
1-5/32 11/16	AN4-11 0.66	AN4-11A 0.45			AN4H-11A 0.75
1-9/32 13/16	AN4-12 0.57	AN4-12A 0.39	AN4H-12 1.94		AN4H-12A 0.59
1-13/32 15/16	AN4-13 0.69	AN4-13A 0.51			AN4H-13A 0.76
1-17/32 1-1/16	AN4-14 0.67	AN4-14A 0.41	AN4H-14 3.10		AN4H-14A 0.63
1-21/32 1-3/16	AN4-15 0.76	AN4-15A 0.41	AN4H-15 2.10		AN4H-15A 0.67
1-25/32 1-5/16	AN4-16 0.68	AN4-16A 0.52			AN4H-16A 0.73
1-29/32 1-7/16	AN4-17 0.71	AN4-17A 0.52			AN4H-17A 0.88
2-1/32 1-9/16	AN4-20 0.72	AN4-20A 0.54			AN4H-20A 1.05
2-5/32 1-11/16	AN4-21 0.74	AN4-21A 0.58			AN4H-21A 1.14
2-9/32 1-13/16	AN4-22 0.76	AN4-22A 0.59			AN4H-22A 1.14
2-13/32 1-15/16	AN4-23 0.78	AN4-23A 0.61			AN4H-23A 1.49
2-17/32 2-1/16	AN4-24 0.92	AN4-24A 0.73			AN4H-24A 1.15
2-21/32 2-3/16	AN4-25 0.92	AN4-25A 0.88			AN4H-25A 0.88
2-25/32 2-5/16	AN4-26 0.75	AN4-26A 0.59	AN4H-26 1.26		AN4H-26A 2.28
2-29/32 2-7/16	AN4-27 0.82	AN4-27A 0.67			AN4H-27A 1.02
3-1/32 2-9/16	AN4-30 0.96	AN4-30A 0.76			AN4H-30A 1.12
3-5/32 2-11/16	AN4-31 1.05	AN4-31A 0.89			AN4H-31A 1.75
3-9/32 2-13/16	AN4-32 1.05	AN4-32A 0.84			AN4H-32A 2.50
3-13/32 2-15/16	AN4-33 1.17	AN4-33A 0.90			AN4H-33A 1.75
3-17/32 3-1/16	AN4-34 1.11	AN4-34A 0.91			
3-21/32 3-3/16	AN4-35 1.23	AN4-35A 1.01			
3-25/32 3-5/16	AN4-36 1.70	AN4-36A 1.44			
3-29/32 3-7/16	AN4-37 1.50	AN4-37A 1.53			
4-1/32 3-9/16	AN4-40 2.90	AN4-40A 1.66			
4-5/32 3-11/16	AN4-41 2.47	AN4-41A 2.02			
4-9/32 3-13/16	AN4-42 2.97	AN4-42A 2.07	AN4H-42 7.74		
4-13/32 3-15/16	AN4-43 8.40	AN4-43A 2.21			
4-17/32 4-1/16	AN4-44 2.50	AN4-44A 2.47			
4-21/32 4-3/16	AN4-45 3.06	AN4-45A 2.69			
4-25/32 4-5/16	AN4-46 3.30	AN4-46A 2.82			
4-29/32 4-7/16	AN4-47 3.57	AN4-47A 2.93			
5-1/32 4-9/16	AN4-50 3.85	AN4-50A 3.27			
5-5/32 4-11/16	AN4-51 9.60	AN4-51A 9.19			
5-9/32 4-13/16	AN4-52 10.85	AN4-52A 8.61			
5-13/32 4-15/16	AN4-53 9.35	AN4-53A 10.75			
5-17/32 5-1/16		AN4-54A 8.88			
5-21/32 5-3/16		AN4-55A 8.92			
5-25/32 5-5/16	AN4-56 9.10	AN4-56A 8.17			
5-29/32 5-7/16	AN4-57 8.58	AN4-57A 8.91			
6-1/32 5-9/16	AN4-60 9.22	AN4-60A 5.56			
6-5/32 5-11/16		AN4-61A 11.01			
6-9/32 5-13/16					
6-13/32 5-15/16		AN4-63A 8.14			
6-17/32 6-1/16	AN4-64 7.00	AN4-64A 10.44			
6-21/32 6-3/16	AN4-65 8.50				
6-25/32 6-5/16		AN4-66A 11.88			
6-29/32 6-7/16		AN4-67A 14.00			
7-1/32 6-9/16					
7-5/32 6-11/16					
7-9/32 6-13/16					
7-13/32 6-15/16					
7-17/32 7-1/16					
7-21/32 7-3/16		AN4-75A 20.99			
7-25/32 7-5/16					
7-29/32 7-7/16					
8-1/32 7-9/16		AN4-80A 16.19			

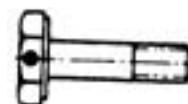
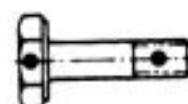
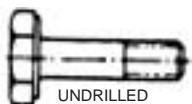
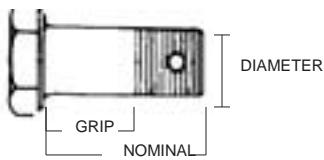
HARDWARE



AN5 - 5/16" - 24									
LENGTH	DRILLED SHANK		UNDRILLED SHANK		DRILLED HEAD & SHANK		DRILLED HEAD ONLY		
	NOM.	GRIP	PART NO.	PRICE EA.	PART NO.	PRICE EA.	PART NO.	PRICE EA.	
19/32	1/16	AN5-4	0.65	AN5-4A	0.39		AN5H-4A	0.70	
23/32	3/16	AN5-5	0.65	AN5-5A	0.32		AN5H-5A	0.70	
27/32	5/16	AN5-6	0.65	AN5-6A	0.45		AN5H-6A	0.75	
31/32	7/16	AN5-7	0.60	AN5-7A	0.35		AN5H-7A	0.85	
1-3/32	9/16	AN5-10	0.79	AN5-10A	0.32	AN5H-10	2.90	AN5H-10A	0.70
1-7/32	11/16	AN5-11	0.75	AN5-11A	0.39		AN5H-11A	0.80	
1-11/32	13/16	AN5-12	0.82	AN5-12A	0.50	AN5H-12	5.58	AN5H-12A	0.80
1-15/32	15/16	AN5-13	0.74	AN5-13A	0.46		AN5H-13A	0.65	
1-19/32	1-1/16	AN5-14	0.81	AN5-14A	0.50		AN5H-14A	1.70	
1-23/32	1-3/16	AN5-15	0.85	AN5-15A	0.56	AN5H-15	0.91	AN5H-15A	0.98
1-27/32	1-5/16	AN5-16	0.84	AN5-16A	0.51				
1-31/32	1-7/16	AN5-17	0.79	AN5-17A	0.60	AN5H-17	NLA	AN5H-17A	1.50
2-3/32	1-9/16	AN5-20	0.80	AN5-20A	0.59	AN5H-20	0.95	AN5H-20A	1.80
2-7/32	1-11/16	AN5-21	0.88	AN5-21A	0.63		AN5H-21A	1.22	
2-11/32	1-13/16	AN5-22	0.85	AN5-22A	0.65				
2-15/32	1-15/16	AN5-23	0.72	AN5-23A	0.70		AN5H-23A	2.15	
2-19/32	2-1/16	AN5-24	0.85	AN5-24A	0.69		AN5H-24A	1.25	
2-23/32	2-3/16	AN5-25	0.98	AN5-25A	0.79		AN5H-25A	4.19	
2-27/32	2-5/16	AN5-26	1.10	AN5-26A	0.68		AN5H-26A	2.13	
2-31/32	2-7/16	AN5-27	1.14	AN5-27A	0.79				
3-3/32	2-9/16	AN5-30	0.99	AN5-30A	0.89		AN5H-30A	NLA	
3-7/32	2-11/16	AN5-31	1.30	AN5-31A	0.99	AN5H-31	NLA	AN5H-31A	3.50
3-11/32	2-13/16	AN5-32	1.30	AN5-32A	1.05				
3-15/32	2-15/16	AN5-33	1.33	AN5-33A	1.08	AN5H-33	NLA	AN5H-33A	NLA
3-19/32	3-1/16	AN5-34	1.60	AN5-34A	1.35				
3-23/32	3-3/16	AN5-35	1.80	AN5-35A	1.45		AN5H-35A	2.50	
3-27/32	3-5/16	AN5-36	1.60	AN5-36A	1.35				
3-31/32	3-7/16	AN5-37	1.80	AN5-37A	2.81				
4-3/32	3-9/16	AN5-40	1.93	AN5-40A	1.44				
4-7/32	3-11/16	AN5-41	1.99	AN5-41A	1.85				
4-11/32	3-13/16	AN5-42	2.15	AN5-42A	1.99				
4-15/32	3-15/16	AN5-43	2.28	AN5-43A	NLA				
4-19/32	4-1/16	AN5-44	NLA	AN5-44A	2.05		AN5H-44A	NLA	
4-23/32	4-3/16	AN5-45	2.60	AN5-45A	2.60				
4-27/32	4-5/16	AN5-46	2.40	AN5-46A	2.25				
4-31/32	4-7/16	AN5-47	2.50	AN5-47A	2.50				
5-3/32	4-9/16	AN5-50	8.33	AN5-50A	8.50				
5-7/32	4-11/16	AN5-51	NLA	AN5-51A	8.45				
5-11/32	4-13/16	AN5-52	9.10	AN5-52A	9.10				
5-15/32	4-15/16	AN5-53	8.22	AN5-53A	8.22				
5-19/32	5-1/16	AN5-54	9.90	AN5-54A	8.43				
5-23/32	5-3/16	AN5-55	8.22	AN5-55A	8.22				
5-27/32	5-5/16	AN5-56	8.75	AN5-56A	NLA				
5-31/32	5-7/16	AN5-57	NLA	AN5-57A	8.86				
6-3/32	5-9/16	AN5-60	9.81	AN5-60A	9.81				
6-7/32	5-11/16	AN5-6	NLA	AN5-61A	11.45				
6-11/32	5-13/16	AN5-62	NLA	AN5-62A	NLA				
6-15/32	5-15/16	AN5-63	12.25	AN5-63A	9.80				
6-19/32	6-1/16	AN5-64	NLA	AN5-64A	19.43				
6-23/32	6-3/16	AN5-65	NLA	AN5-65A	NLA				
6-27/32	6-5/16	AN5-66	NLA	AN5-66A	NLA				
6-31/32	6-7/16	AN5-67	NLA	AN5-67A	NLA				
7-3/32	6-9/16	AN5-70	NLA	AN5-70A	NLA				
7-7/32	6-11/16	AN5-71	NLA	AN5-71A	14.99				
7-11/32	6-13/16	AN5-72	NLA	AN5-72A	NLA				
7-15/32	6-15/16	AN5-73	NLA	AN5-73A	17.00				
7-19/32	7-1/16	AN5-74	NLA	AN5-74A	NLA				
7-23/32	7-3/16	AN5-75	NLA	AN5-75A	NLA				
7-27/32	7-5/16	AN5-76	NLA	AN5-76A	NLA				
7-31/32	7-7/16	AN5-77	NLA	AN5-77A	NLA				
8-3/32	7-9/16	AN5-80	NLA	AN5-80A	NLA				

AN6 - 3/8" - 24									
LENGTH	DRILLED SHANK		UNDRILLED SHANK		DRILLED HEAD & SHANK		DRILLED HEAD ONLY		
	NOM.	GRIP	PART NO.	PRICE EA.	PART NO.	PRICE EA.	PART NO.	PRICE EA.	
45/64	1/16	AN6-5	0.92	AN6-5A	0.63	AN6H-5	0.88	AN6H-5A	1.55
53/64	3/16	AN6-6	0.95	AN6-6A	0.65	AN6H-6	NLA	AN6H-6A	1.25
61/64	5/16	AN6-7	0.99	AN6-7A	0.66			AN6H-7A	1.99
1-5/64	7/16	AN6-10	0.79	AN6-10A	0.55	AN6H-10	NLA	AN6H-10A	2.77
1-13/64	9/16	AN6-11	0.88	AN6-11A	0.70	AN6H-11	NLA	AN6H-11A	1.85
1-21/64	11/16	AN6-12	0.90	AN6-12A	0.60			AN6H-12A	2.35
1-29/64	13/16	AN6-13	0.98	AN6-13A	0.64	AN6H-13	NLA	AN6H-13A	1.85
1-37/64	15/16	AN6-14	0.89	AN6-14A	0.70			AN6H-14A	2.04
1-45/64	1-1/16	AN6-15	1.04	AN6-15A	0.70			AN6H-15A	1.25
1-53/64	1-3/16	AN6-16	1.06	AN6-16A	0.83				
1-61/64	1-5/16	AN6-17	1.05	AN6-17A	0.80			AN6H-17A	7.55
2-5/64	1-7/16	AN6-20	1.04	AN6-20A	0.75			AN6H-20A	1.11
2-13/64	1-9/16	AN6-21	1.40	AN6-21A	0.85			AN6H-21A	4.35
2-21/64	1-11/16	AN6-22	1.20	AN6-22A	0.91	AN6H-22	1.58	AN6H-22A	2.30
2-29/64	1-13/16	AN6-23	1.45	AN6-23A	0.99			AN6H-23A	NLA
2-37/64	1-15/16	AN6-24	1.21	AN6-24A	0.99	AN6H-24	NLA		
2-45/64	2-1/16	AN6-25	1.23	AN6-25A	1.02			AN6H-25A	2.50
2-53/64	2-3/16	AN6-26	1.30	AN6-26A	1.15				
2-61/64	2-5/16	AN6-27	1.25	AN6-27A	1.13			AN6H-27A	NLA
3-5/64	2-7/16	AN6-30	1.22	AN6-30A	1.23				
3-13/64	2-9/16	AN6-31	1.31	AN6-31A	1.35			AN6H-31A	5.30
3-21/64	2-11/16	AN6-32	1.91	AN6-32A	1.44				
3-29/64	2-13/16	AN6-33	2.00	AN6-33A	1.36				
3-37/64	2-15/16	AN6-34	2.00	AN6-34A	2.40			AN6H-34A	3.02
3-45/64	3-1/16	AN6-35	2.10	AN6-35A	1.45			AN6H-35A	NLA
3-53/64	3-3/16	AN6-36	2.15	AN6-36A	1.65			AN6H-36A	3.50
3-61/64	3-5/16	AN6-37	2.31	AN6-37A	1.76			AN6H-37A	5.08
4-5/64	3-7/16	AN6-40	2.33	AN6-40A	1.94			AN6H-40A	3.97
4-13/64	3-9/16	AN6-41	2.35	AN6-41A	1.68			AN6H-41A	4.21
4-21/64	3-11/16	AN6-42	2.50	AN6-42A	2.25	AN6H-42	NLA	AN6H-42A	5.24
4-29/64	3-13/16	AN6-43	3.30	AN6-43A	2.91	AN6H-43	NLA	AN6H-43A	6.20
4-37/64	3-15/16	AN6-44	2.99	AN6-44A	2.88			-	-
4-45/64	4-1/16	AN6-45	2.79	AN6-45A	2.51			AN6H-45A	5.24
4-53/64	4-3/16	AN6-46	3.12	AN6-46A	2.76			AN6H-46A	5.46
4-61/64	4-5/16	AN6-47	3.56	AN6-47A	3.59			-	-
5-5/64	4-7/16	AN6-50	10.45	AN6-50A	8.85			AN6H-50A	11.10
5-13/64	4-9/16	AN6-51	9.17	AN6-51A	8.96			AN6H-51A	9.17
5-21/64	4-11/16	AN6-52	9.70	N6-52A	9.18			AN6H-52A	14.69
5-29/64	4-13/16	AN6-53	9.60	AN6-53A	9.39			AN6H-53A	9.53
5-37/64	4-15/16	AN6-54	9.76	AN6-54A	10.35			AN6H-54A	10.68
5-45/64	5-1/16	AN6-55	8.74	AN6-55A	8.64			AN6H-55A	11.19
5-53/64	5-3/16	AN6-56	9.92	AN6-56A	8.64				
5-61/64	5-5/16	AN6-57	9.92	AN6-57A	9.75				
6-5/64	5-7/16	AN6-60	9.92	AN6-60A	11.51				
6-13/64	5-9/16								
6-21/64	5-11/16								
6-29/64	5-13/16					AN6-63A	11.55		
6-37/64	5-15/16								
6-45/64	6-1/16								
6-53/64	6-3/16	AN6-66	NLA						
6-61/64	6-5/16	AN6-67	NLA						
7-5/64	6-7/16	AN6-70	14.43	AN6-70A	NLA				
7-13/64	6-9/16								
7-21/64	6-11/16								
7-29/64	6-13/16								

HARDWARE



AN7 - 7/16" - 20"

LENGTH	DRILLED SHANK		UNDRILLED SHANK		DRILLED HEAD & SHANK		DRILLED HEAD ONLY	
	NOM.	GRIP	PART NO.	PRICE EA.	PART NO.	PRICE EA.	PART NO.	PRICE EA.
23/32	1/16		AN7-6	0.81	AN7-6A	3.00		
27/32	3/16		AN7-7	2.39	AN7-7A	2.80		
31/32	5/16		AN7-10	2.51	AN7-10A	1.75		
1-3/32	7/16		AN7-11	1.95	AN7-11A	1.75		
1-7/32	9/16		AN7-12	2.05	AN7-12A	2.99		
1-11/32	11/16		AN7-13	2.30	AN7-13A	1.75	AN7H-13	3.10
1-19/32	15/16		AN7-14	2.20	AN7-14A	2.10		
1-23/32	1-1/16		AN7-15	2.98	AN7-15A	2.10		
1-27/32	1-3/16		AN7-16	2.23	AN7-16A	1.93	AN7H-16	NLA
1-31/32	1-5/16		AN7-17	2.50	AN7-17A	2.36		
2-3/32	1-7/16		AN7-20	2.10	AN7-20A	2.10		
2-7/32	1-9/16		AN7-21	1.94	AN7-21A	2.50		
2-11/32	1-11/16		AN7-22	2.22	AN7-22A	2.07		
2-15/32	1-13/16		AN7-23	2.54	AN7-23A	2.45		
2-19/32	1-15/16		AN7-24	2.12	AN7-24A	2.20		
2-23/32	2-1/16		AN7-25	2.97	AN7-25A	2.69		
2-27/32	2-3/16		AN7-26	2.55	AN7-26A	2.80		
2-31/32	2-5/16		AN7-27	2.50	AN7-27A	2.90		
3-3/32	2-7/16		AN7-30	3.40	AN7-30A	3.30		
3-7/32	2-9/16		AN7-31	3.03	AN7-31A	2.98		
3-11/32	2-11/16		AN7-32	3.38	AN7-32A	3.50		
3-15/32	2-13/16		AN7-33	2.87	AN7-33A	2.81		
3-19/32	2-15/16		AN7-34	2.90	AN7-34A	2.63		
3-23/32	3-1/16		AN7-35	3.03	AN7-35A	2.52		
3-27/32	3-3/16		AN7-36	2.97	AN7-36A	3.71		
3-31/32	3-5/16		AN7-37	3.40	AN7-37A	3.50		
4-3/32	3-7/16		AN7-40	4.62	AN7-40A	3.30		
4-7/32	3-9/16		AN7-41	3.66	AN7-41A	4.75		
4-11/32	3-11/16		AN7-42	3.87	AN7-42A	4.38		
4-15/32	3-13/16		AN7-43	4.46	AN7-43A	4.50		
4-19/32	3-15/16		AN7-44	4.46	AN7-44A	4.55		
4-23/32	4-1/16		AN7-45	4.72	AN7-45A	6.13		
4-27/32	4-3/16		AN7-46	4.54	AN7-46A	4.44		
4-31/32	4-5/16		AN7-47	4.70	AN7-47A	5.95		
5-3/32	4-7/16		AN7-50	10.73	AN7-50A	15.23		

NAS BOLT

Shear, hexagon head modified, short thread. Alloy steel 160,000 - 180,000 PSI per MIL-H-6875. (Available while supplies last).



DIA/THREAD	GRIP	LENGTH	PART NUMBER	PRICE EACH
1/4-28	.250	.466	NAS1104-4	0.32
1/4-28	.438	.754	NAS1104-7	0.63
1/4-28	.562	.878	NAS1104-9D	1.84
1/4-28	.625	.941	NAS1104-10	0.60
1/4-28	.688	1.004	NAS1104-11	0.96
1/4-28	2.250	2.566	NAS1104-36	2.00
3/8-24	1.00	1.391	NAS1106-16	3.75
3/8-24	3.125	3.500	NAS1106-50	7.95

AN3 & AN4 BOLT KIT

AN3 & 4 drilled and not drilled bolts in plastic container (LPB-1). Kit includes 10 each: AN3 - 4,5,6,7,10,12,13,14 undrilled, AN3 - 6,7,10 drilled, AN4 - 5,6,7,10,12,13,14 undrilled, AN4-6,7,10,12 drilled. Plastic container keeps all the bolts separately and is marked for sizing. Note: If entering this number on the website it will automatically list all the numbers including the plastic bin.

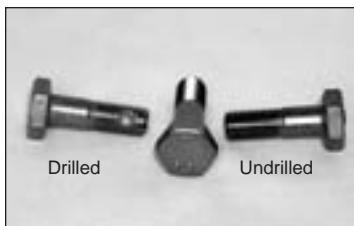


DESCRIPTION	PART NUMBER	PRICE
BOLT KIT	BP100	111.59

HARDWARE

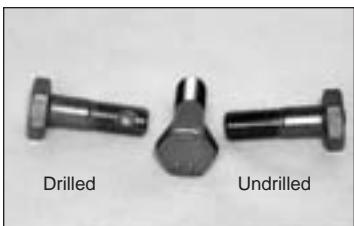
AN3C

Mil - B - 6812E Material 431SS MIL-S-17832 Stainless steel bolts. Available in drilled or undrilled (A) shanks



AN4C

Mil - B - 6812E Material 431SS MIL-S-17832 Stainless steel bolts. Available in drilled or undrilled (A) shanks



STAINLESS AN3C - 3/16 (1032)

		DRILLED		UNDRILLED	
LENGTH		SHANK PART NO.	PRICE EA.	SHANK PART NO.	PRICE EA.
NOM.	GRIP				
3/8	1/16			AN3C-3A	0.76
1/2	1/8	AN3C-4	0.84	AN3C-4A	0.64
5/8	1/4	AN3C-5	0.88	AN3C-5A	0.58
3/4	3/8	AN3C-6	0.91	AN3C-6A	0.55
7/8	1/2	AN3C-7	0.96	AN3C-7A	0.69
1	5/8	AN3C-10	0.89	AN3C-10A	0.69
1-1/8	3/4	AN3C-11	0.95	AN3C-11A	0.74
1-1/4	7/8	AN3C-12	1.05	AN3C-12A	0.66
1-3/8	1	AN3C-13	0.88	AN3C-13A	0.68
1-1/2	1-1/8	AN3C-14	0.99	AN3C-14A	0.75
1-5/8	1-1/4	AN3C-15	1.15	AN3C-15A	0.80
1-3/4	1-3/8			AN3C-16A	0.80
1-7/8	1-1/2			AN3C-17A	0.85
2	1-5/8			AN3C-20A	0.75
2-1/8	1-3/4			AN3C-21A	0.87
2-1/4	1-7/8			AN3C-22A	1.05
2-3/8	2			AN3C-23A	1.05
2-1/2	2-1/8			AN3C-24A	1.28
2-5/8	2-1/4			AN3C-25A	1.12
2-3/4	2-3/8			AN3C-26A	1.59
2-7/8	2-1/2				
3	2-5/8			AN3C-30A	2.45

STAINLESS AN4C - 1/4-28

		DRILLED		UNDRILLED		
LENGTH		SHANK PART NO.	PRICE EA.	SHANK PART NO.	PRICE EA.	
NOM.	GRIP					
3/8	1/16				AN4C-3A	0.52
1/2	1/8				AN4C-4A	0.65
5/8	3/16	AN4C-5	0.91		AN4C-5A	0.66
3/4	5/16	AN4C-6	1.00		AN4C-6A	0.75
7/8	7/16	AN4C-7	0.85		AN4C-7A	0.69
1	9/16	AN4C-10	1.25		AN4C-10A	0.77
1-1/8	11/16	AN4C-11	1.25		AN4C-11A	0.75
1-1/4	13/16	AN4C-12	1.22		AN4C-12A	0.95
1-3/8	15/16	AN4C-13	1.57		AN4C-13A	1.24
1-1/2	1-1/16	AN4C-14	1.12		AN4C-14A	0.95
1-5/8	1-3/16	AN4C-15	1.15		AN4C-15A	0.95
1-3/4	1-5/16	AN4C-16	1.89		AN4C-16A	0.70
1-7/8	1-7/16				AN4C-17A	1.10
2	1-9/16				AN4C-20A	1.03
2-1/8	1-11/16				AN4C-21A	1.98
2-1/4	1-13/16				AN4C-22A	1.29
2-3/8	1-15/16				AN4C-23A	1.31
2-1/2	2-1/16				AN4C-24A	1.50
2-5/8	2-3/16				AN4C-25A	2.07
2-3/4	2-5/16				AN4C-26A	2.39
2-7/8	2-7/16				AN4C-27A	5.83
3	2-9/16				AN4C-30A	3.50

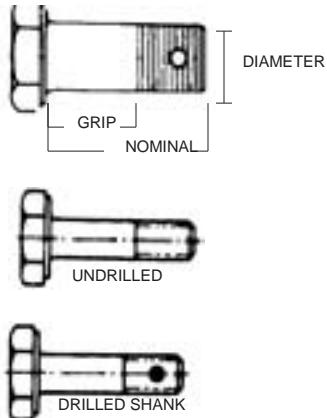
AN5C

Mil - B - 6812E Material 431SS MIL-S-17832 Stainless steel bolts. Available in drilled or undrilled (A) shanks



STAINLESS AN5C - 5/16-24

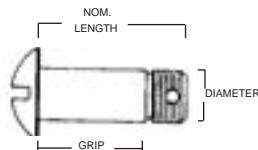
		DRILLED		UNDRILLED	
LENGTH		SHANK PART NO.	PRICE EA.	SHANK PART NO.	PRICE EA.
NOM.	GRIP				
1/2	1/16	drilled	-	AN5C-4A	-
5/8	3/16	not	-	AN5C-5A	\$86
3/4	5/16	available	-	AN5C-6A	\$95
7/8	7/16	-	-	AN5C-7A	\$1.00
1	9/16	-	-	AN5C-10A	\$1.26
1-1/2	11/16	-	-	AN5C-11A	\$1.21
1-1/4	13/16	-	-	AN5C-12A	\$1.88
1-3/8	15/16	-	-	AN5C-13A	\$1.39
1-1/2	1-1/16	-	-	AN5C-14A	\$1.51
1-5/8	1-3/16	-	-	AN5C-15A	\$1.68
1-3/4	1-5/16	-	-	AN5C-16A	\$1.59
1-7/8	1-7/16	-	-	AN5C-17A	\$1.90



HARDWARE

AN23, AN24, AN25 CLEVIS BOLTS

Steel, cadmium plated, drilled or undrilled, a non-corrosion-resistant steel clevis bolt that meets or exceeds double shear strength requirements per MIL-H-6875. Cadmium plated to Spec. QQ-P-416. NOTE: Most clevis bolts are not stocked with a drilled shank. If the drilled hole is countersunk, it is an acceptable substitute for the -A.



LENGTH NOM. GRIP	10-32		1/4-28		5/16-24	
	DRILLED PART NO.	PRICE	UNDRILLED PART NO.	PRICE	DRILLED PART NO.	PRICE
17/32 3/16	AN23-8	0.65	AN23-8A	0.49	AN24-8	1.35
19/32 1/4	AN23-9	0.72	AN23-9A	0.45	AN24-9	0.60
21/32 5/16	AN23-10	0.72	AN23-10A	0.50	AN24-10	0.55
23/32 3/8	AN23-11	0.79	AN23-11A	0.55	AN24-11	0.89
25/32 7/16	AN23-12	0.88	AN23-12A	0.49	AN24-12	1.05
27/32 1/2	AN23-13	0.74	AN23-13A	0.45	AN24-13	1.05
29/32 9/16	AN23-14	0.86	AN23-14A	0.45	AN24-14	1.40
31/32 5/8	AN23-15	0.69	AN23-15A	0.50	AN24-15	1.30
1-1/32 11/16	AN23-16	0.89	AN23-16A	0.45	AN24-16	1.05
1-3/32 3/4	AN23-17	0.88	AN23-17A	0.46	AN24-17	1.27
1-5/32 13/16	AN23-18	0.89	AN23-18A	0.69	AN24-18	1.31
1-7/32 7/8	AN23-19	0.91	AN23-19A	0.78	AN24-19	1.27
1-9/32 15/16	AN23-20	0.49	AN23-20A	0.59	AN24-20	0.99
1-11/32 1	AN23-21	1.33	AN23-21A	0.51	AN24-21	0.99
1-13/32 1-1/16	AN23-22	0.53	AN23-22A	0.59	AN24-22	0.95
1-15/32 1-1/8	AN23-23	0.85	AN23-23A	0.66	AN24-23	0.69
1-17/32 1-3/16	AN23-24	1.80	AN23-24A	0.50	AN24-24	0.69
1-19/32 1-1/4			AN23-25A	1.72	AN24-25	0.69
1-21/32 1-5/16	AN23-26	1.15	AN23-26A	1.79	AN24-26	1.98
1-23/32 1-3/8	AN23-27	0.80	AN23-27A	1.79	AN24-27	1.27
1-25/32 1-7/16	AN23-28	3.88			AN24-28	0.75
1-27/32 1-1/2	AN23-29	1.30				
1-29/32 1-9/16	AN23-30					
1-31/32 1-5/8	AN23-31	0.97				
2-1/32 1-11/16	AN23-32	1.58	AN23-32A	1.79	AN24-32	NLA

MS20073 ENGINE BOLTS

Bolts are supplied with three holes drilled through each head for the application of lock wire. Bolts available are 3/8-24 thread diameter size. Available while supplies last.



DIA/THREAD	GRIP	LENGTH	PART NO.	PRICE EACH
3/8-24	.625	1.297	MS20073-06-12	2.12
3/8-24	.750	1.422	MS20073-06-13	2.65
3/8-24	1.250	1.922	MS20073-06-17	2.65
3/8-24	3.00	3.672	MS20073-06-35	3.45
3/8-24	3.375	4.047	MS20073-06-40	4.28
3/8-24	3.625	4.297	MS20073-06-42	4.28
3/8-24	3.750	4.442	MS20073-06-43	4.28
3/8-24	3.875	4.547	MS20073-06-44	4.28

HARDWARE

AN42, 43, 44, 45, 46 EYE BOLTS

AN42, 43, 44, 45, 46 EYE BOLTS

Eyebolts are special purpose bolts to be used where external tension loads are to be applied. The eye is designed for attachment of such devices as a turnbuckle fork, a clevis, or a cable shackle. Manufactured and cadmium plated in same manner as AN3-AN8 aircraft bolts. Minimum tensile strength 125,000 PSI.

AN42B: 3/16" Shank, 3/16" Hole, 10-32 Threads

AN43B: 1/4" Shank, 3/16" Hole, 1/4-28 Threads

AN44: 5/16" Shank, 1/4" Hole, 5/16-24 Threads

AN45: 5/16" Shank, 5/16" Hole, 5/16-24 Threads

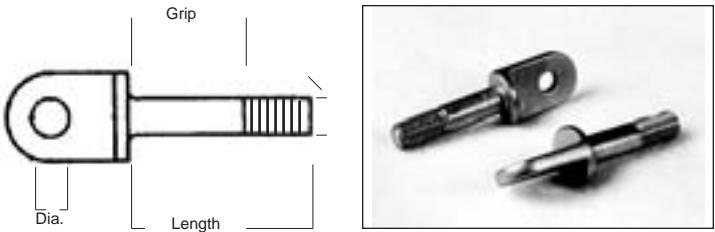
AN46: 3/8" Shank, 3/8" Hole, 3/8-24 Threads

AN42B - SHANK 3/16" - 1032, HOLE - 3/16"

NOM	GRIP	HOLE	THR'D	DRILLED	PRICE	UNDRILLED	PRICE
1/2"	1/8"	3/16"	10-32	AN42B-4	4.19	AN42B-4A	4.25
5/8	1/4	3/16"	10-32	AN42B-5	5.40		
3/4	3/8	3/16"	10-32	AN42B-6	4.61	AN42B-6A	4.55
7/8	1/2	3/16"	10-32	AN42B-7	5.99	AN42B-7A	4.80
1	5/8	3/16"	10-32	AN42B-10	5.75	AN42B-10A	4.35
1-1/8	3/4	3/16"	10-32	AN42B-11	5.89	AN42B-11A	4.28
1-1/4	7/8	3/16"	10-32	AN42B-12	7.25	AN42B-12A	4.27
1-3/8	1	3/16"	10-32	AN42B-13	5.97	AN42B-13A	4.65
1-1/2	1-1/8	3/16"	10-32	AN42B-14	6.52	AN42B-14A	4.99
1-5/8	1-1/4	3/16"	10-32	AN42B-15	6.80	AN42B-15A	6.30
1-3/4	1-3/8	3/16"	10-32	AN42B-16	7.35	AN42B-16A	6.35
1-7/8	1-1/2	3/16"	10-32	AN42B-17	6.99	AN42B-17A	6.89
2	1-5/8	3/16"	10-32	AN42B-20	7.52	AN42B-20A	6.08
2-1/8	1-3/4	3/16"	10-32	AN42B-21	6.92	AN42B-21A	6.29
2-1/4	1-7/8	3/16"	10-32	AN42B-22	7.75	AN42B-22A	NLA
2-3/8	2	3/16"	10-32	AN42B-23	7.99	AN42B-23A	5.99
2-1/2	2-1/8	3/16"	10-32	AN42B-24	7.95		
2-5/8	2-1/4	3/16"	10-32	AN42B-25	8.99	AN42B-25A	6.10
2-3/4	3-3/8	3/16"	10-32	AN42B-26	2.89	AN42B-26A	NLA
2-7/8	2-1/2	3/16"	10-32	AN42B-27	2.88	AN42B-27A	5.99
3	2-5/8	3/16"	10-32	AN42B-30	10.99	AN42B-30A	15.90

AN43B - SHANK 1/4" - 1/4-28, HOLE - 3/16"

NOM	GRIP	HOLE	THR'D	DRILLED	PRICE	UNDRILLED	PRICE
1/2	1/16	3/16"	1/4-28	AN43B-4	5.50	AN43B-4A	3.68
5/8	3/16	3/16"	1/4-28	AN43B-5	6.25	AN43B-5A	4.70
3/4	5/16	3/16"	1/4-28	AN43B-6	5.85	AN43B-6A	5.35
7/8	7/16	3/16"	1/4-28	AN43B-7	6.25	AN43B-7A	5.23
1	5/8	3/16"	1/4-28	AN43B-10	5.94	AN43B-10A	5.85
1-1/8	11/16	3/16"	1/4-28	AN43B-11	7.79	AN43B-11A	NLA
1-1/4	13/16	3/16"	1/4-28	AN43B-12	6.99	AN43B-12A	6.70
1-3/8	15/16	3/16"	1/4-28	AN43B-13	7.63	AN43B-13A	5.99
1-1/2	1-1/16	3/16"	1/4-28	AN43B-14	7.99	AN43B-14A	6.25
1-5/8	1-3/16	3/16"	1/4-28	AN43B-15	9.54	AN43B-15A	6.05
1-3/4	1-5/16	3/16"	1/4-28	AN43B-16	7.91	AN43B-16A	6.77
1-7/8	1-7/16	3/16"	1/4-28	AN43B-17	9.78	AN43B-17A	6.99
2	1-9/16	3/16"	1/4-28	AN43B-20	8.99	AN43B-20A	7.75
2-1/8	1-11/16	3/16"	1/4-28	AN43B-21	8.85		
2-1/4	1-13/16	3/16"	1/4-28	AN43B-22	7.88	AN43B-22A	7.99
2-3/8	1-15/16	3/16"	1/4-28	AN43B-23	8.25	AN43B-23A	7.99
2-1/2	2-1/16	3/16"	1/4-28	AN43B-24	9.95		
2-5/8	2-3/16	3/16"	1/4-28	AN43B-25	8.99	AN43B-25A	8.99
2-3/4	2-5/16	3/16"	1/4-28	AN43B-26	9.98	AN43B-26A	8.99
2-7/8	2-7/16	3/16"	1/4-28	AN43B-27	9.85		
3	2-9/16	3/16"	1/4-28	AN43B-30	11.95		
3-1/8	2-11/16	3/16"	1/4-28	AN43B-31	12.75		
3-1/4	2-13/16	3/16"	1/4-28	AN43B-32	12.75		
3-3/8	2-15/16	3/16"	1/4-28	AN43B-33	11.88		
3-3/4	3-3/8	3/16"	1/4-28	AN43B-36	13.34		



AN44 - SHANK - 5/16" - 5/16-24, HOLE - 1/4"

NOM	GRIP	HOLE	THR'D	DRILLED	PRICE	UNDRILLED	PRICE
11/16	3/16	1/4"	5/16-24			AN44-5A	7.35
13/16	5/16	1/4"	5/16-24			AN44-6A	6.11
1	9/16	1/4"	5/16-24	AN44-10	8.42	AN44-10A	6.99
1-1/4	13/16	1/4"	5/16-24	AN44-12	7.81	AN44-11A	7.85
1-3/8	15/16	1/4"	5/16-24	AN44-13	9.76		
1-1/2	1-1/16	1/4"	5/16-24	AN44-14	9.94		
1-5/8	1-3/16	1/4"	5/16-24	AN44-15	9.99		
1-3/4	1-5/16	1/4"	5/16-24	AN44-16	10.50		
1-3/4	7/16	1/4"	5/16-24			AN44-17A	9.75
2	1-9/16	1/4"	5/16-24	AN44-20	10.65		
2-3/8	1-15/16	1/4"	5/16-24	AN44-23	12.26		
2-1/16	2-5/8	1/4"	5/16-24	AN44-24	NLA		

AN45 - SHANK 5/16" - 5/16-24, HOLE - 5/16"

NOM	GRIP	HOLE	THR'D	DRILLED	PRICE	UNDRILLED	PRICE
7/8	7/16	5/16"	5/16-24	AN45-7	9.25		
1	9/16	5/16"	5/16-24	AN45-10	9.28		
1-1/8	11/16	5/16"	5/16-24	AN45-11	9.99		
1-1/4	13/16	5/16"	5/16-24	AN45-12	10.23		
1-3/4	1-5/16	5/16"	5/16-24	AN45-16	11.57		
2	1-9/16	5/16"	5/16-24	AN45-20	11.94		
2-5/8	2-1/16	5/16"	5/16-24	AN45-24	13.75		
2-7/8	2-5/16	5/16"	5/16-24	AN45-26	15.75		

AN46 - SHANK 3/8" - 3/8-24. HOLE - 3/8"

NOM	GRIP	HOLE	THR'D	DRILLED	PRICE	UNDRILLED	PRICE
7/8	5/16	3/8"	3/8-24	AN46-7	9.65	AN46-7A	7.99
1-5/8	15/16	3/8"	3/8-24				
1-3/4	1-5/16	3/8"	3/8-24	AN46-17	13.49	AN46-17A	12.82
2	1-7/16	3/8"	3/8-24				
2-1/8	1-9/16	3/8"	3/8-24				
2-1/4	1-11/16	3/8"	3/8-24	AN46-22	16.00		
2-3/8	1-13/16	3/8"	3/8-24	AN46-23	13.63		
2-5/8	2-1/16	3/8"	3/8-24			AN46-25A	14.99
2-3/4	2-3/16	3/8"	3/8-24	AN46-26	15.49		
2-7/8	2-1/16	3/8"	3/8-24			AN46-27A	15.43
3	2-7/16	3/8"	3/8-24			AN46-30A	13.57
3-1/4	2-11/16	3/8"	3/8-24			AN46-32A	17.31

NYLON CAP

Are designed for use in place of standard and thin height hex nuts in applications where, for reasons for safety or appearance, it is desirable to cover exposed bolt ends. They are also suitable for sealing internal or external pressures, up to 80 PSI past the bolt threads, provided a proper seal is effected between the nut seat and its mating surface. Maintain locking effectiveness up to 250 degree F. The locking insert and cap are an integral part. Stock black.

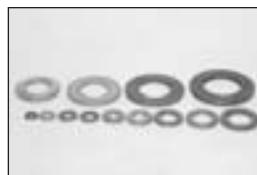


THREAD	ALLOY	COLOR CAP	PART NUMBER	PRICE
8-32	STEEL	BLACK	21NKM82	0.26
10-32	STEEL	BLACK	21NKM02	0.20
1/4"-28	STEEL	BLACK	21NKE048	0.21

HARDWARE

AN960 WASHERS

Regular and light series in steel, corrosion resistant (stainless) and aluminum flat washers. Steel is cad II plated steel



BOLT OR SCREW SIZE NO.	I.D. INCH	O.D. INCH	THICKNESS	CAD PLATED STEEL PART NUMBER	PRICE EACH	PRICE /100	CORROSION RESISTANT PART NUMBER	PRICE EACH	PRICE /100	ALUMINUM PART NUMBER	PRICE EACH	PRICE /100
#3	-	.105	.250	.032	AN960-3	0.99	AN960C-3	0.84	.032	AN960PD-3	1.25	
#4	440	.125	.312	.032	AN960-4	0.79	AN960C-4	1.01	.032	AN960PD-4	0.99	
#6	632	.149	.375	.032	AN960-6	1.10	AN960C-6	1.28	.032	AN960PD-6	1.01	
#8	832	.174	.375	.032	AN960-8	0.68	AN960C-8	1.01	.032	AN960PD-8	1.81	
#10	AN3	.203	.438	.063	AN960-10	0.99	AN960C-10	1.63	.063	AN960PD-10	1.25	
1/4"	AN4	.265	.500	.063	AN960-416	0.89	AN960C-416	1.99	.063	AN960PD-416	1.28	
5/16"	AN5	.328	.562	.063	AN960-516	0.99	AN960C-516	1.54	.063	AN960PD-516	2.34	
3/8"	AN6	.390	.625	.063	AN960-616	1.20	AN960C-616	2.34	.063	AN960PD-616	1.55	
7/16"	AN7	.453	.750	.063	AN960-716	1.75	AN960C-716	2.25	.063	AN960PD-716	3.45	
1/2"	AN8	.515	.875	.063	AN960-816	3.14	AN960C-816	3.13	.063	AN960PD-816	2.87	
9/16"	AN9	.578	1.062	.063	AN960-916	3.10	AN960C-916	4.72	.063	AN960PD-916	4.25	
5/8"	AN10	.640	1.188	.063	AN960-1016	2.95	AN960C-1016	3.00	.063	AN960PD-1016	-	
3/4"	AN12	.765	1.312	.090	AN960-1216	4.77	AN960C-1216	9.23	.063	AN960PD-1216	-	
LIGHT SERIES WASHERS												
#3	-	.105	.250	.016	AN960-3L	0.99	AN960C-3L	0.89	.016	AN960PD-3L	-	-
#4	440	.125	.312	.016	AN960-4L	0.77	AN960C-4L	1.01	.016	AN960PD-4L	1.28	
#6	632	.149	.375	.016	AN960-6L	0.99	AN960C-6L	0.90	.016	AN960PD-6L	1.28	
#8	832	.174	.375	.016	AN960-8L	0.87	AN960C-8L	0.89	.016	AN960PD-8L	0.99	
#10	AN3	.203	.438	.032	AN960-10L	0.95	AN960C-10L	1.20	.016	AN960PD-10L	1.01	
1/4"	AN4	.265	.500	.032	AN960-416L	1.05	AN960C-416L	0.75	.016	AN960PD-416L	2.34	
5/16"	AN5	.328	.562	.032	AN960-516L	1.01	AN960C-516L	0.90	.016	AN960PD-516L	1.01	
3/8"	AN6	.390	.625	.032	AN960-616L	1.20	AN960C-616L	0.95	.016	AN960PD-616L	1.35	
7/16"	AN7	.453	.750	.032	AN960-716L	1.31	AN960C-716L	1.81	.016	AN960PD-716L	3.13	
1/2"	AN8	.515	.875	.032	AN960-816L	2.20	AN960C-816L	1.54	.016	AN960PD-816L	3.40	
9/16"	AN9	.578	1.062	.032	AN960-916L	2.27	AN960C-916L	3.66	.016	AN960PD-916L	-	
5/8"	AN10	.640	1.188	.032	AN960-1016L	2.20	AN960C-1016L	3.07	.016	AN960PD-1016L	-	
3/4"	AN12	.765	1.312	.032	AN960-1216L	4.77	AN960C-1216L	-	.016	AN960PD-1216L	-	

AN970 FLAT WASHERS

Manufactured of carbon steel, cadmium plated per QQ-P-416A, Type II, Class 2. They provide a greater bearing area than AN960 washers. Used on wooden structures under both the head of the bolt and the nut to prevent crushing the surface.



601 FINISHING WASHERS - 82°

(NAS391) No. 601 Countersunk Type washers are made of nickel-plated brass. To be used with 82° and 100° countersunk screws.



BOLT NUMBER	BOLT SIZE	I.D. INCHES	O.D. INCHES	THICKNESS	PART NUMBER	PRICE EACH	PRICE P/100
AN3	3/16"	.203	.875	.063	AN970-3	0.24	
AN4	1/4"	.265	1.125	.063	AN970-4	0.26	
AN5	5/16"	.328	1.375	.063	AN970-5	0.26	
AN6	3/8"	.390	1.625	.063	AN970-6	0.33	
AN7	7/16"	.453	1.812	.109	AN970-7	0.52	
AN8	1/2"	.515	2.000	.109	AN970-8	0.69	
AN9	9/16"	.578	2.188	.125	AN970-9	0.85	
AN10	5/8"	.640	2.375	.125	AN970-10	0.85	

AN960 & AN970 WASHER ASSORTMENT



Kit contains the following:

AN960: 100 each:
, -6, -8, -10, -416, -516, -616

AN970: 15 each:

-3, -4, -5, -6

Packed in Large plastic box.

DESCRIPTION	PART NUMBER	PRICE EACH
Assorted washer	WP100	43.14

603 FINISHING WASHERS - 100°

(NAS390) No. 603 Flush Type washers are made of nickel-plated brass.



SCREW SIZE	PART NUMBER	PRICE EA	PRICE P/100
6	603-6	1.79	
8	603-8	1.99	
10	603-10	1.79	

HARDWARE

COUNTERSUNK WASHER

Spring steel washers for use with 100° flat head screws to provide reinforced, low-profile attachments.



COUNTERSUNK HI STRENGTH

High strength alloy steel washer. Cad II plated, heat treat: 125,000 to 145,000 PSI. These washers are primarily for use with the 160,000 PSI internal wrenching bolts. MIL-H-6875



SCREWRIVET O.D. SIZE	O.D. SIZE	HOLE DIA.	MAT'L THICK	PART NUMBER	PRICE EACH
632	1/8"	.500	.140-.147	A3236-012-24A	3.99
832	5/32"	.562	.171	A3135-017-24A	3.88
1032	5/32"	.750	.196	A3235-020-24A	3.66
1032	5/32"	.750	.196	A3235-028-24A	3.66
1/4"	1/4"	.812	.255-.260	A3475-020-24A	3.66
1/4"	1/4"	.812	.255-.260	A3475-028-24A	4.65

WASHERS - STAINLESS STEEL

A series Stainless steel washers for use with stainless steel 100° screws (MS24693C) to provide reinforced, low-profile attachments.

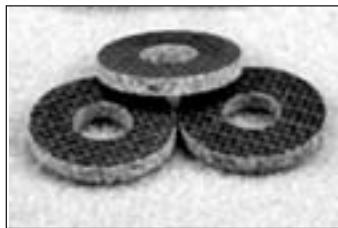
Flat & tinnermann washers for use with sheet metal screws. Sold in packaged of 25 ea.

SCREW SIZE	MAT'L THICKNESS	PART NUMBER	PRICE EACH	PRICE P/100
6-32	.012	A3236-6	3.25	
8-32	.017	A3135-8	2.92	
10-32	.020	A3235-10	3.99	



MISCELLANEOUS WASHERS

(As used in aircraft kits)



DESCRIPTION	PART NUMBER	PRICE EACH
Phenolic Washers: 1/2 O.D.x 3/16 x 1/16 tee	LE100-057	3.71
Nylon washers: #6 Screw: .031 thick	NW-6	1.71
#8 Screw : .031 thick	NW-8	1.71
#10 Screw : .031 thick	NW-10	1.71

INTERNAL TOOTH LOCK WASHER

Provide efficient locking action by spring tension and biting action of tapered twisted teeth. Made of 1050 spring steel and cadmium plated per specification QQ-P-416A, Type II Class 3. (Old AN number AN936-A)



BOLT NO.	SIZE	STEEL PART NO.	PRICE 25 PACK	STAINLESS PRICE PART NO.25 PACK
-	#4	MS35333-36	0.90	
-	#6	MS35333-37	1.01	MS35333-71 1.30
-	#8	MS35333-38	0.85	MS35333-72 2.60
AN3	#10	MS35333-39	1.15	MS35333-73 1.70
AN4	1/4	MS35333-40	1.28	MS35333-74 2.75
AN5	5/16	MS35333-41	1.01	MS35333-75 5.52
AN6	3/8	MS35333-42	1.40	
AN7	7/16	MS35333-43	2.20	
AN8	1/2	MS35333-44	2.87	
AN9	9/16	MS35333-45	3.18	

EXTERNAL TOOTH LOCK WASHER

Provide efficient locking action by spring tension and biting action of tapered twisted teeth. Made of 1050 spring steel and cadmium plated per specification QQ-P-416A, type II, Class 3. Old AN part number AN936-B



BOLT NO.	SIZE	STEEL PART NO.	PRICE 25 PACK	STAINLESS PRICE PART NO.25 PACK
-	#4	MS35335-29	1.33	
-	#6	MS35335-30	0.75	MS35335-58 3.18
-	#8	MS35335-31	1.00	MS35335-59 1.10
AN3	#10	MS35335-32	0.95	MS35335-60 2.25
AN4	1/4	MS35335-33	1.28	
AN5	5/16	MS35335-34	1.54	
AN6	3/8	MS35335-35	2.07	MS35335-63 11.93
AN7	7/16	MS35335-36	3.18	
AN8	1/2	MS35335-37	3.45	

SPLIT - LOCK WASHER

Split, helical lock washers are made of carbon steel, cadmium plated per QQ-P-416A, type II Class 3. (Old AN part number AN935).



BOLT NO.	SIZE	STEEL PART NO.	PRICE 25 PACK	STAINLESS PRICE PART NO.25 PACK
-	#6	MS35338-41	0.48	MS35338-136 1.28
-	#8	MS35338-42	1.81	MS35338-137 0.99
AN3	#10	MS35338-43	0.75	MS35338-138 1.05
AN4	1/4	MS35338-44	0.60	MS35338-139 1.81
AN5	5/16	MS35338-45	0.90	MS35338-140 4.35
AN6	3/8	MS35338-46	2.87	MS35338-141 4.76
AN7	7/16	MS35338-47	2.07	MS35338-142 10.88
AN8	1/2	MS35338-48	2.00	MS35338-143 15.69

HARDWARE

WASHER LOCKING

Rod end locking washer made of 1095 spring steel. Cadmium plated per QQP-416 type II, Class 2. this washer is intended for use with the NAS 509 jam nut for positive locking.



AN310 CASTELLATED NUT

Used with drilled shank bolts to accept cotter pins, safety wire or clips.



DESCRIPTION	PART NUMBER	PRICE EACH
3/8-24	NAS513-6	0.85

AN320 SHEAR NUT

Plain castellated steel cadmium plated in accordance with QQ-P-416.



THREAD SIZE	CAD PLATED PART NO.	PRICE EA.	PRICE P/100	CORRISION RESISTANT	PRICE EACH
10-32	AN310-3	0.41	-	AN310-C3	0.80
1/4-28	AN310-4	0.53	-	AN310-C4	0.81
5/16-24	AN310-5	0.74	-	AN310-C5	1.25
3/8-24	AN310-6	0.80	-	AN310-C6	1.55
7/16-20	AN310-7	1.10	-	AN310-C7	1.59
1/2-20	AN310-8	1.52	-	-	-
9/16-20	AN310-9	2.00	-	-	-
5/8-18	AN310-10	3.50	-	-	-
3/4-16	AN310-12	3.99	-	-	-
1-14	AN310-16	4.81	-	-	-

THREAD SIZE	PART NUMBER	PRICE EA	PRICE P/100
10-32	AN320-3	0.55	
1/4-28	AN320-4	0.65	
5/16-24	AN320-5	0.74	
3/8-24	AN320-6	0.78	
7/16-20	AN320-7	0.99	
1/2-20	AN320-8	1.29	
5/8-18	AN320-10	1.86	
3/4-16	AN320-12	2.23	

AN340 COURSE THREAD PLAIN HEX NUT

Machine screw nut course thread, steel or brass. Brass used for instruments. Non-structural course thread, steel 50,000 PSI tensile strength minimum. (MS35649)



THREAD SIZE	STEEL PART NUMBER	PRICE EA	BRASS PART NUMBER	PRICE EACH
4-40	AN340-4	0.18	AN340-B4	0.48
6-32	AN340-6	0.14	AN340-B6	0.29
8-32	AN340-8	0.12	AN340-B8	0.25
10-24	AN340-10	0.16	-	-
3/8-16	AN340-616	0.42	-	-

AN345 FINE THREAD PLAIN HEX NUT

Machine screw fine thread, steel or brass. Steel 50,000 PSI tensile strength minimum. (MS35650)



THREAD SIZE	STEEL PART NO.	PRICE EA	BRASS PART NO.	PRICE EACH
10-32	AN345-10	0.15	AN345-B10	0.29
1/4-28	AN345-416	0.17	-	-
5/16-24	AN345-516	0.25	-	-
3/8-24	AN345-616	0.73	-	-

AN315 PLAIN NUT

Hexagon airframe nut, steel cadmium plated in accordance with QQ-P-416. Available in right or left hand threads. When ordering use (L) to indicate left hand threads.



THREAD SIZE	RIGHT PART NO.	PRICE EA	PRICE P/100	LEFT PART NO.	PRICE EACH
6-40	AN315-640R	0.48	-	-	-
10-32	AN315-3	0.15	-	AN315-3L	0.51
1/4-28	AN315-4	0.16	-	AN315-4L	0.49
5/16-24	AN315-5	0.15	-	AN315-5L	0.59
3/8-24	AN315-6	0.26	-	AN315-6L	0.85
7/16-20	AN315-7	0.69	-	AN315-7L	0.69
1/2-20	AN315-8	0.65	-	AN315-8L	0.65
5/8-18	AN315-10	1.88	-	-	-
3/4-16	AN315-12	3.25	-	-	-
1-14	AN315-16	3.00	-	-	-

AN316 CHECK NUT

Jam, Hexagon nut steel cadmium plated in accordance with QQ-P-416. Available in right or left hand threads. When ordering use (L) to indicate left hand threads.



THREAD SIZE	RIGHT PART NUMBER	PRICE EA	PRICE P/100	LEFT PART NUMBER	PRICE EACH
10-32	USE 315-3	-	-	-	-
1/4-28	AN316-4	0.15	-	AN316-4L	0.48
5/16-24	AN316-5	0.18	-	AN316-5L	0.67
3/8-24	AN316-6	0.18	-	AN316-6L	0.66
7/16-20	AN316-7	0.48	-	AN316-7L	0.86
1/2-20	AN316-8	0.49	-	AN316-8L	1.29
9/16-20	AN316-9	1.40	-	-	-
5/8-18	AN316-10	1.45	-	-	-
3/4-16	AN316-12	2.10	-	-	-

HARDWARE

AN350 WING NUT MS35425

Plain, steel cadmium plated in accordance with QQ-P-416. 50,000 PSI tensile strength minimum. (-632 & -832 not available from Wicks.)



AN363 CORROSION RESISTANT METAL LOCK

(MS21046) Corrosion resistant metal to metal lock nut, temps to 550°F.



THREAD SIZE	PART NUMBER	PRICE EACH
10-32	AN350-1032	1.45
1/4-28	AN350-4	1.70
832	MS35425-19	0.77

AN360 NUT

Steel, cadmium plated.



DIA. THREAD	PART NUMBER	PRICE EACH
1/4-28	AN360-4	3.89
5/16-24	AN360-5	0.75

AN363 METAL LOCK

(MS21045) Metal to metal lock nut, temps to 550°F.



THREAD SIZE	PART NUMBER	PRICE EACH
6-32	AN363-632	0.35
8-32	AN363-832	0.35
10-32	AN363-1032	0.29
1/4-28	AN363-428	0.46
5/16-24	AN363-524	0.39
3/8-24	AN363-624	0.48
7/16-20	AN363-720	0.99
1/2-20	AN363-820	1.30
5/8-18	AN363-1018	1.51

MS20365 FIBERLOCK

NE regular hex, light fiberlock nut. Temps to 250° F. (MS21044N). Cad plated steel.



THREAD SIZE	PART NUMBER	PRICE EACH
4-40	MS20365-440	0.14
6-32	MS20365-632	0.23
8-32	MS20365-832	0.17
10-32	MS20365-1032	0.12
1/4-28	MS20365-428	0.15
5/16-24	MS20365-524	0.22
3/8-24	MS20365-624	0.37
7/16-20	MS20365-720	0.65
1/2-20	MS20365-820	0.69
9/16-18	MS20365-918	0.93
5/8X11	AN365-1011A	2.84

THREAD SIZE	PART NUMBER	PRICE EA	PRICE P/100
6-32	AN363C-632	1.10	
8-32	AN363C-832	1.20	
10-32	AN363C-1032	0.86	
1/4-28	AN363C-428	1.29	
5/16-24	AN363C-524	1.66	

AN366F ANCHOR NUT TWO LUG (MS21078)

Cadmium plated steel. Nylon locking insert. For blind mounted applications. Use 3/32" diameter rivets to attach -632, -832, -1032 and -428. Use 1/8" diameter rivets to attach -524. 1/16" thick. Note -624 are no longer available.



THREAD SIZE	PART NUMBER	PRICE EACH
6-32	AN366F-632	9.54
8-32	AN366F-832	5.80
10-32	AN366F-1032	3.20
1/4-28	AN366F-428	3.17

MS17825 SELF-LOCKING CASTELLATED NUT

Cadmium plated steel with nylon insert, these nuts are used in applications for which slotted or castellated nuts are approved at temperature of 250° F and below. Head design is for use with drilled shank bolts, eyebolts, clevis bolts and studs. Slots in nut accommodate a cotter pin for safety purposes.



THREAD SIZE	PART NUMBER	PRICE EACH
10-32	MS17825-3	1.25
1/4-28	MS17825-4	1.29
5/16-24	MS17825-5	1.39
3/8-24	MS17825-6	1.43

MS20364 THIN FIBERLOCK

NE regular hex, light thin fiberlock nut. Temps to 250° F. (MS21083N). Cad plated steel.



THREAD SIZE	PART NUMBER	PRICE EACH
4-40	MS20364-440	0.28
6-32	MS20364-632	0.22
8-32	MS20364-832	0.25
10-32	MS20364-1032	0.35
1/4-28	MS20364-428	0.26
5/16-24	MS20364-524	0.42
3/8-24	MS20364-624	0.57
7/16-20	MS20364-720	0.68
1/2-20	MS20364-820	0.90
5/8-18	MS20364-1018	1.10

HARDWARE

HEX NUT LIGHT WEIGHT REDUCED DIMENSION

High temp and tensile strength. Use in limited mounting or wrenching areas. (Nas679)



MS21049 ANCHOR NUT TWO LUG

(K1100) Cadmium plated self-locking, nutplate, 2 lug 100° countersunk, low height, alloy steel 450°F. Attach with 3/32 rivets. K: designates countersunk or dimpled rivet hole. L: designates dry film lubricated (black)



THREAD SIZE	AXIAL STRENGTH LB MINIMUM	PART NUMBER	PRICE EACH
4-40	1,110	MS21042-04	0.43
6-32	1,670	MS21042-06	0.27
8-32	2,490	MS21042-08	0.33
10-32	3,470	MS21042-3	0.29
1/4-28	6,200	MS21042-4	0.34
5/16-24	9,820	MS21042-5	0.70
3/8-24	15,200	MS21042-6	0.80
7/16-20	20,600	NAS1291x7	4.22
5/8-18		NAS1423-10	4.45

MS21044 CORROSION RESISTANT

Corroion resistant fiberlock nut, self lockin, non-metallic inset, hexagon regular height. Temps to 250 degrees. Supercedes AN365C, MS20365C, NAS1021C.



THREAD SIZE	PART NUMBER	PRICE EACH	PER 100
6-32	MS21044C06	0.35	
8-32	MS21044C08	0.35	
10-32	MS21044C3	0.35	
1/4-28	MS21044C4	0.45	
5/16-24	MS21044C5	0.55	

MS21047 ANCHOR NUT TWO LUG (K1000)

Self locking low height steel 450°F. Use 3/32" rivet to attach sizes -06, -08, -3, -4, 1/8" rivet for -5. K: designates countersunk or dimpled rivet hole. L: designates dry film lubricated (black).



THREAD SIZE	PART NUMBER	PRICE EACH
6-32	MS21047-06	0.48
8-32	countersunk MS21047-L08K	0.49
8-32	MS21047-08	0.56
10-32	MS21047-3	0.46
10-32	countersunk dry film lubricated MS21047-L3K	0.69
1/4-28	dry film lubricated MS21047-L4	0.49
5/16-24	dry film lubricated MS21047-L5	0.91
3/8-24	dry film lubricated MS21047-L6	1.75

THREAD SIZE	PART NUMBER	PRICE EACH
8-32	dry film lubricated MS21049-L08	0.47
8-32	countersunk dry film lubricated MS21049-L08K	0.82
10-32	dry film lubricated MS21049-L3	0.49
10-32	dry film lubricated countersunk MS21049-L3K	0.73

MS21051 ANCHOR NUT

ONE LUG (K2000) Cadmium plated self-locking plate nut, low height, alloy steel, 450°F. Attach -08, -3, -4, with 3/32 rivets. K: designates countersunk or dimpled rivet hole. L; designated dry film lubricated (black)



THREAD SIZE	PART NUMBER	PRICE EACH
6-32	MS21051-L06	0.69
8-32	MS21051-08	0.37
10-32	MS21051-3	0.43
1/4-28	MS21051-4	0.99

MS21055 CORNER ANCHOR NUT

ALL METAL (K3000)
All metal corner nut attaches with 3/32" diameter rivets.



THREAD SIZE	PART NUMBER	PRICE EACH
8-32	MS21055-08	0.76
10-32	MS21055-3	0.75
1/4-28	MS21055-L4	1.22

MS21059 FLOATING ANCHOR NUT

TWO LUG (F5000)
Plated steel with dry film lubricant applied. Counterbore in base area of nut eliminates shimming to prevent bottoming on the imperfect thread. Use to allow engagement of thread in cases of bolt hole misalignment. Attach with 3/32" diameter rivet, except L6 uses 1/8" rivet. K: designates countersunk or dimpled rivet holes. L: designates dry film lubricated.



THREAD SIZE	PART NUMBER	PRICE EACH
6-32	MS21059-L06	0.68
6-32	countersunk MS21059-L06K	0.84
8-32	MS21059-L08	0.65
8-32	countersunk MS21059-L08K	0.68
10-32	MS21059-L3	0.68
10-32	countersunk MS21059-L3K	0.98
1/4-28	MS21059-L4	0.99
5/16-24	MS21059-L5	1.45
3/8-24	MS21059-L6	2.80

HARDWARE

MS21061 SELF LOCKING FLOATING

ONE LUG

Low height, alloy steel. Attach with 3/32" rivets.



THREAD	PART NUMBER	PRICE EACH
6-32	MS21061-L06	0.73
8-32	MS21061-L08	0.61
10-32	MS21061-L3	0.60
1/4-28	MS21061-L4	0.71

MS21069 ANCHOR NUT THIN

TWO LUG THIN (MK1000)

Reduced rivet spacing. High temp. Particularly suited for use in blind close clearance areas. Attach with 3/32" diameter rivet.

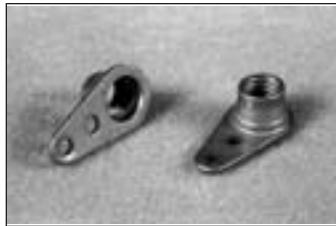


THREAD SIZE	PART NUMBER	PRICE EACH
6-32	MS21069-L06	0.45
8-32	MS21069-L08	0.42
10-32	MS21069-L3	0.43
1/4-28	MS21069-L4	0.49

MS21071 ANCHOR NUT MINIATURE

ALL METAL (MK2000)

Cadmium plated steel with low height 450° Attach -06, -08, -3 and -4 with 3/32" dia. rivets. Attach -5 with 1/8" dia. rivet.



THREAD SIZE	PART NUMBER	PRICE EACH
6-32	MS21071-06	0.32
8-32	MS21071-08	0.57
10-32	MS21071-3	1.20
1/4-28	MS21071-4	0.85

MS21073 SELF-LOCKING CORNER NUTPLATE

Reduced rivet spacing, low height steel, 450° F, 125 KSI, cad plated steel L: designates dry film lubricated (black)



THREAD SIZE	PART NUMBER	PRICE EACH
6-32	MS21073-06	0.55
8-32	MS21073-08	0.88
10-32	MS21073-3	0.69
4-40	MS21073-L04	0.69

MS21075 MINIATURE FLOATING NUTS 2 LUG

Reduced rivet spacing, high temp to allow engagement of thread in case of bolt hole misalignment. Counterbore in base area of nut eliminates shimming to prevent bottoming on the imperfect thread . Attach with 3/32" dia. rivet.



THREAD SIZE	PART NUMBER	PRICE EACH
6-32	MS21075-06	2.50
8-32	MS21075-08	1.56
10-32	MS21075-3	1.40
10-32	MS21075-L3	0.69
1/4-28	MS21075-4	1.15

MS21080 ANCHOR NUT ONE LUG

Cadmium plated steel. Nylon locking insert. Used where edge distance and space limitations do not permit use of two-lug or corner anchor nut. Use 3/32" dia. rivet to attach -06, -08, -3, -4. Use 1/8" dia. rivet to attach -5.



THREAD SIZE	PART NUMBER	PRICE EA
10-32	MS21080-3	4.31

MS21081 ANCHOR NUT - CORNER NUT

Cadmium plated steel. Nylon locking insert. Used where space limitations prohibit an in-line arrangement of rivet holes. Use 3/32" dia. rivet to attach -06, -08, -3, & -4. Use 1/8" dia. rivet to attach -5.



THREAD SIZE	PART NUMBER	PRICE EA
10-32	MS21081-3	8.96
1/4-28	MS21081-4	7.80
5/16-24	MS21081-5	1.49

MS27151 PAL NUTS

MS27151 engine nuts replace AC356 Palnuts. They are stamped from 1050 spring steel and cadmium plated per QQ-P-416A, Type II, Class 3.



THREAD SIZE	PART NO	PRICE EA	PRICE P/100
6-32	MS27151-5	0.15	
8-32	MS27151-6	0.15	
10-32	MS27151-7	0.21	
1/4-28	MS27151-13	0.16	
5/16-24	MS27151-16	0.19	
3/8-24	MS27151-19	0.19	
7/16-20	MS27151-21	0.22	
1/2-20	MS27151-24	0.36	

HARDWARE

DRILLED JAM NUT

Drilled jam nut made of 4130 steel, cad plated per QQ-P-416, type II Class 2.. Nuts are magnetic particle inspected in accordance with MIL-I-6868, but not marked. Intended for use the NAS513 keyed washer for positive locking of rod end terminals to hydraulic piston rods, tie rod ends, push-pull rod, etc.



CAP NUTS

Commercial grade also called acorn nuts.



THREAD	PART NUMBER	PRICE EACH
1032 (-3)	NAS509-3	0.71
1/4-28 (-4)	NAS509-4	1.99
5/16-24 (-5)	NAS509-5	1.35
3/8-24 (-6)	NAS509-6	1.99

HEX NUT - LOW HEIGHT

Heat treated, cadmium plated steel with dry film lubricant applied. Self-locking. Standard temperature to 450° F.



THREAD SIZE	PART NUMBER	PRICE EACH
6-32	NAS679-A06	0.42
8-32	NAS679-A08	0.42
10-32	NAS679-A3	0.44
1/4-28	NAS679-A4	0.25
5/16-24	NAS679-A5	0.70
3/8-24	NAS679-A6	0.69
7/16-20	NAS679-A7	2.39

NAS1473 FLOATING ANCHOR NUT

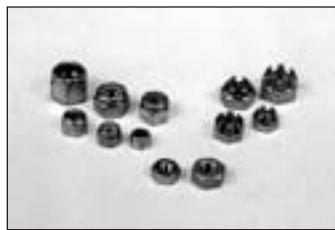
2 lug floating anchor nut, self locking with cap. Steel nut and shell with aluminum alloy or steel washer cadmium plated, type II Class 2. Nut is cadmium plated, type II, Class 2 plus an approved dry film lubricant. Fuel resistant black rubber seal for use up to 225° F (MIL-R-6855) Can be used in fuel tanks.



THREAD SIZE	PART NUMBER	PRICE EACH
8-32	NAS1473A08	2.80
10-32	NAS1473A3	2.56

NUT ASSORTMENT

Contains 20 each of the following nuts:
MS20365: -632,-832,-1032,-428,-524,-624 AN310: -3, -4, -5,-6, AN315: -3,-4 packed in divided plastic case.



DESCRIPTION	PART NUMBER	PRICE EACH
Nut package	NP100	106.99

THREAD SIZE	PART NUMBER	PRICE EACH
6-32	CN632	0.35
8-32	CN832	0.39
10-32	CN1032	0.37
1/4-28	CN428	0.49

T-NUTS

3 prong tee nut to be used for blind fastening into wood. 5/16" diameter hole needed through wood.



THREAD SIZE	PART NUMBER	PRICE EACH
832 thread, 1/4" barrel length	TN832	0.18
1032 thread, 5/16" barrel length	TN1032	0.18
1/4-20 thread, 7/16" barrel length	TN1/4x20	0.24

SHOCK MOUNTS

For vibration and shock proofing on instruments and radios.

SQUARE TYPE- 100PL-6 is 1-1/4" overall x 1" hole square plate type mount has 6-lb rating, monel mounting plate, non magnetic, with rubber center. Dimension: .141" dia. base holes for 6-32 screws, .166" center hole dia. for 8-32 screws.

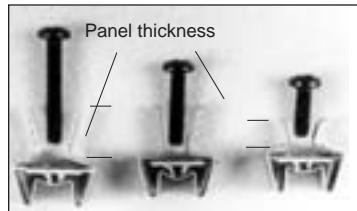


ROUND MOUNT - 1-1/4" overall length as used on Cessna aircraft. Rubber center is 1/2" x 9/16" with 8-32 threaded steel projections.

TYPE	PART NUMBER	PRICE EACH
Square	100PL6	7.50
Round	1213645-1	4.20

INSTRUMENT NUTS

Non magnetic, cadmium plated, cage type speed nut permits mounting of aircraft instruments to front face of panel. Cage is compressed with finger-pressure to allow insertion of legs into clearance holes. The legs spring apart upon release of pressure to receive 6-32 brass screws at back of instrument. Stock only 632 size. Not for use on Westach instruments. **Screws are not included with nuts.** See screw section of catalog for proper length and type.



DESCRIPTION	PART NUMBER	PRICE EACH
.313 panel thickness (5/16")	A8942-632-493	1.09
.375 panel thickness (3/8")	A8943-632-493	1.09
.375 and over (3/8")	A8944-632-493	1.09

HARDWARE

ANCHOR TYPE SPEED NUTS DIMPLED

For attaching doors, access plates or any part that must be fastened securely. Nuts can be welded or riveted in place. Length of rivet depends upon thickness of materials. Made of aircraft spring steel finished with phosphate and three coats olive phenolic paint. Dimpled for MS20426AD rivet installation.

SCREW SIZE	HOLE DIA	PART NUMBER	PRICE EACH
6	.105	Dimpled A6195-6Z-1D	0.55
8	.105	Dimpled A6195-8Z-1D	0.55

ANCHOR TYPE SPEED NUTS -FLAT

For attaching doors, access plates or any part that must be fastened securely. Nuts can be welded or riveted in place. Length of rivet depends upon thickness of materials. Made of aircraft spring steel finished with phosphate and three coats olive phenolic paint. Flat for use with MS20470 rivet installation.

SCREW SIZE	HOLE DIA	PART NUMBER	PRICE EACH
6	.105	Flat A6191-6Z-1D	0.65
8	.105	Flat A6191-8Z-1D	0.49
8	.135	Flat A8579-8Z-1D	0.21
10	.105	Flat A6191-10Z-1D	0.62

U-TYPE

Clip retaining, snaps into locked on position over panel edge or in center panel location which eliminates welding or riveting. Ideal for blind or hard to reach locations. Made of aircraft spring steel finished with phosphate and 3 coats olive phenolic paint. With relief notch.

SCREW SIZE	PANEL THICKNESS	LENGTH A	WIDTH B	PART NUMBER	PRICE EACH
6	.025 - .064	.84	.44	A1785-6Z-1D	0.50
8	.025 - .051	.61	.44	A1789-8Z-1D	0.45
8	.025 - .064	.84	.44	A1787-8Z-1D	0.45
10	.025 - .064	.84	.44	A1787-10Z-1D	0.45
10	.081 - .094	.62	.44	A1758-10Z-1D	0.55

U-TYPE

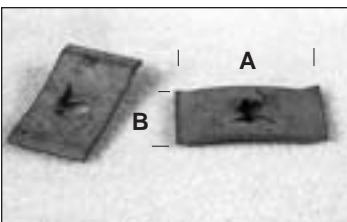
With relief notch, but no extrusion on lower leg

SCREW SIZE	PANEL THICKNESS	LENGTH A	WIDTH B	PART NUMBER	PRICE EACH
8	.025 - .064	.84	.44	A1788-8Z-1D	0.42



FLAT TYPE

Vibration resistant with maximum strength, these fasteners replace threaded nuts, lock washers and spanner washers and yet weigh less. For use with TYPE B tapping screws, the turned up ends prevent marring of surface. Made of aircraft spring steel finished with phosphate and three coats olive phenolic paint.



SCREW SIZE	LENGTH "A"	WIDTH "B"	PART NO.	PRICE EACH
4	.50	.31	A1776-4Z-1D	0.39
6	.63	.44	A1777-6Z-1D	0.48
8	.63	.44	A1778-8Z-1D	0.39
10	.88	.50	A1779-10Z-1D	0.45

SNAP-IN HOLE PLUGS

Used to plug holes in skin or panels, or for use as a removable access hole cover. 4 hole sizes available. Made of steel.



HOLE SIZE	PANEL THICKNESS	PART NUMBER	PRICE EACH
3/4"	.109-.125	SHP75	0.50
1"	.125-.156	SHP100	0.65
1-1/4"	.062-.093	SHP125	0.70
1-1/2"	.031-.062	SHP150	0.75

CLIP NUTS

High strength forged hex nuts suitable for structural and non-structural applications in metal, plastic or composite materials. Clip portion is made of carbon steel, cadmium plated QQ-P-416, Type II, Class 1, the nut portion is made of alloy steel, cadmium plated per QQ-P-416 Type II, Class 2, moly disulfide dry film lube.



SIZE	EDGE DISTANCE	PANEL THICKNESS	PART NUMBER	PRICE EACH
6-32	.180-.280	.030-.051	CN294667	1.22
8-32	.250-.380	.020-.070	CN130008	0.63
8-32	.310-.500	.020-.090	CN130007	0.47
10-32	.350-.500	.020-.090	CN130120	0.89
10-32	.350-.500	.091-.150	CN130123	0.66

FLOATING CLIP NUTS

Clip and nut are both made of carbon steel, heat treated, cad plated per QQ-P-416, Type II, Class 2. Nut also has a moly disulfide dry film lube.

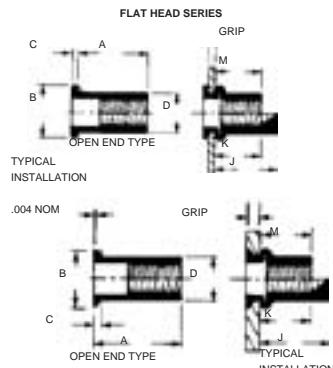


SIZE	EDGE DISTANCE	PANEL THICKNESS	PART NUMBER	PRICE EACH
6-32	.380-.500	.020-.160	FCN632-43	1.21
8-32	to .250	.020-.060	FCN832-11	1.15
8-32	to .375	.020-.125	FCN832-26	0.84
8-32	.380 -.500	.020-.160	FCN832-43	0.80
10-32	to .250	.020-.060	FCN1032-11	0.70
10-32	to .375	.020-.125	FCN1032-26	0.55
10-32	.380-.500	.020-.125	FCN1032-36	0.95

HARDWARE

RIVNUTS - ALUMINUM FLAT HEAD & COUNTERSUNK HEAD SERIES

The rivnut is a one-piece internally threaded and counterbored tubular aluminum rivet that can be pulled up or headed while working entirely from the side, forming a bulge or head on the blind side. This upset is large enough to resist being pulled through metal or plastic even under conditions of eccentric load. It overcomes the difficulty of installing brackets, handles or other attachments to tubular pieces. **RIVNUT INSTALLATION** Rivnut is threaded onto pull-up stud of a hand or power-heading tool. Rivnut on header tool mandrel, inserted in drilled hole ready for installation. Arrow indicates direction of mandrel movement as tool is operated. Mandrel retracts pulling threaded portion of Rivnut shank toward blind side of work, forming bulge around unthreaded shank area. Rivnut is clinched securely in place. Unthreading the tool mandrel leaves internal Rivnut threads intact, unharmed.



RIVNUT TOOL 8-32, 10-24, 10-32

This durable rivnut installation tool is built around special bearing & pivoting pin design features. Rugged attributes include a forged, heat-treated steel handle with comfortable grips and a strong die-cast aluminum alloy body. Capacity: 1/4-20. Includes 8-32, 10-24 & 10-32 mandrels and nosepieces. 6-32 mandrel & nosepiece sold separately. Wt: 19 oz

WEIGHT	CAPACITY	PART NUMBER	PRICE
19 OZ	1/4"-20	M9200	59.99

RIVNUT TOOL NOSEPIECE 6-32

This durable rivnut installation tool is built around special bearing & pivoting pin design features. Rugged attributes include a forged, heat-treated steel handle with comfortable grips and a strong die-cast aluminum alloy body. Capacity: 1/4-20. Includes 8-32, 10-24 & 10-32 mandrels and nosepieces. 6-32 mandrel & nosepiece sold separately. Wt: 19 oz

WEIGHT	CAPACITY	PART NUMBER	PRICE
19 OZ	1/4"-20	M9261	3.99

RIV-NUT INSTALLER

Converts your conventional hand pop riveter into an economical Riv-Nut installer tool.



SIZE	PART NUMBER	PRICE EA
6-32	R290-632	12.32
8-32	R290-832	12.31
10-32	R290-1032	12.31

RIVNUT FASTENER HEADER

Wrench type rivnut fastener headers for use with 6-32/ 8-32 and 10-32 thread sizes. Always lubricate 1/2" jackscrew threads before using.



DESCRIPTION	PART NO.	PRICE EACH
6-32 thread	C845-632	42.03
8-32 thread	C845-832	42.03
10-32 thread	C845-1032	42.03

RIVNUT FASTENER HEADER REPLACEMENT

Match thread size with fastener header. Available in 632, 832 and 1032 thread sizes.



FITS	PART NUMBER	PRICE
C845-1032	J70-1032	20.84
C845-632	J70-632	20.84
C845-832	J70-832	20.84

FASTENER HEAD

Rivnut speed header tool, 10-32 thread designed for push-pull, smooth spiral action. Can be converted to 6-32 or 8-32 thread with conversion kits - SCA632 OR SCA832. Replacement parts for tool are available as special order only.



THREAD SIZE	PART NUMBER	PRICE
10-32	L60001032	123.10
CONVERSION KITS:		
6-32	SCA632	35.00
8-32	SCA832	34.50

RIVNUT TOOL MANDREL 6-32

This durable rivnut installation tool is built around special bearing & pivoting pin design features. Rugged attributes include a forged, heat-treated steel handle with comfortable grips and a strong die-cast aluminum alloy body. Capacity: 1/4-20. Includes 8-32, 10-24 & 10-32 mandrels and nosepieces. 6-32 mandrel & nosepiece sold separately. Wt: 19 oz



WEIGHT	CAPACITY	PART NUMBER	PRICE
19 OZ	1/4"-20	M9254	12.75

HARDWARE-RIVNUTS

RNA series will be no longer available when current supply is depleted. The MS27130 series (military spec for RNA series) will phase out the RNA series. Available in keyed or keyless open ends

THREAD SIZE	INSTALL DRILL SIZE	DIMENSIONS				GRIP RANGE	THREAD SIZE & GRIP DESZN.	INDENT MARK	OPEN A .015	END M .015	OLD RNA NUMBER	PART NUMBER	EA.	PRICE PER 100	
		MIN REF.	MAX	B .015	C NOM	D .000									
FLAT HEAD SERIES - KEYLESS															
6-32 UNC-3B	#12	.189	.193	.325	.032	.189	.010-.075	632-75	1RAD	.438	.300	RNA632-075	MS27130A7	0.21	
6-32 UNC-3B	#12	.189	.193	.325	.032	.189	.075-.120	632-120	3-RAD	.500	.315	RNA632-120	MS27130A8	0.18	
6-32 UNC-3B	#12	.189	.193	.325	.032	.189	.120-.160	632-160	5-RAD	.500	.270	RNA632-160	MS27130A9		
8-32 UNC-3B	#2	.221	.226	.357	.032	.221	.010-.075	832-75	1-RAD	.438	.300	RNA832-075	MS27130A13	0.17	
8-32 UNC-3B	#2	.221	.226	.357	.032	.221	.075-.120	832-120	3-RAD	.500	.315	RNA832-120	MS27130A14	0.23	
8-32 UNC-3B	#2	.221	.226	.357	.032	.221	.120-.160	832-160	5-RAD	.500	.270	RNA832-160	MS27130A15	0.60	
10-32 UNF-3B	1/4	.250	.256	.406	.038	.250	.010-.080	1032-80	Blank	.531	.380	RNA1032-080	MS27130A25	0.39	
10-32 UNF-3B	1/4	.250	.256	.406	.038	.250	.080-.130	1032-130	1-RAD	.594	.390	RNA1032-120	MS27130A26	0.65	
10-32 UNF-3B	1/4	.250	.256	.406	.038	.250	.130-.180	1032-180	2-RAD	.641	.390	RNA1032-180	MS27130A27	1.58	
FLAT HEAD SERIES - KEYED															
6-32 UNC-3B	#12	.189	.193	.325	.032	.189	.010-.075	632-75	1RAD	.438	.300	RNA632-075K	MS27130A7K	0.26	
6-32 UNC-3B	#12	.189	.193	.325	.032	.189	.075-.120	632-120	3-RAD	.500	.315	RNA632-120K	MS27130A8K	0.21	
8-32 UNC-3B	#2	.221	.226	.357	.032	.221	.010-.075	832-75	1-RAD	.438	.300	RNA832-075K	MS27130A13K	0.22	
8-32 UNC-3B	#2	.221	.226	.357	.032	.221	.075-.120	832-120	3-RAD	.500	.315	RNA832-120K	MS27130A14K	0.38	
10-32 UNF-3B	1/4	.250	.256	.406	.038	.250	.010-.080	1032-80	Blank	.531	.380	RNA1032-080K	MS27130A25K	0.52	
10-32 UNF-3B	1/4	.250	.256	.406	.038	.250	.080-.130	1032-130	1-RAD	.594	.390	RNA1032-130K	MS27130A26K	0.47	
COUNTER HEAD SERIES - 100° - KEYLESS															
6-32 UNC-3B	#12	.189	.193	.323	.063	.189	.065-.106	632-106	Blank	.500	.325	RNA632-106	MS27130A87	0.36	
6-32 UNC-3B	#12	.189	.193	.323	.063	.189	.106-.161	632-161	2-RAD	.500	.280	RNA632-161	MS27130A88	0.48	
8-32 UNC-3B	#2	.221	.226	.355	.063	.221	.065-.106	832-106	Blank	.500	.325	RNA832-106	MS27130A93	0.52	
8-32 UNC-3B	#2	.221	.226	.355	.063	.221	.106-.161	832-161	2-RAD	.500	.280	RAN832-161	MS27130A94	0.49	
10-32 UNF-3B	1/4	.250	.256	.391	.065	.250	.065-.116	1032-116	Blank	.578	.395	RNA1032-116	MS27130A99	0.60	
10-32 UNF-3B	1/4	.250	.256	.391	.065	.250	.116-.166	1032-166	1-RAD	.625	.385	RNA1032-166	MS27130A100	0.67	
COUNTER HEAD SERIES - 100° - KEYED															
6-32 UNC-3B	#12	.189	.193	.323	.063	.189	.065-.106	632-106	Blank	.500	.325	RNA632-106K	MS27130A87	0.36	
8-32 UNC-3B	#2	.221	.226	.355	.063	.221	.065-.106	832-106	Blank	.500	.325	RNA832-106K	MS27130A93	0.52	

*Keyless - does not lock in position

HARDWARE

AA-112 HI-TORQUER NUTSERT BASE TOOL

The Hi-Torquer manual placing tool system offers a low-cost method of installing Nutserts Threaded inserts. The Hi-Torquer incorporates a "Quick-Change" thread adaptation kit which makes it possible to place different thread sizes without the need for any tools like allen wrenches or screw drivers. One Hi-Torquer may be used to set all sizes of Nutserts simply by using the appropriate thread conversion kit to change from one thread size to another. **Order note:** for one complete tool, order one base tool AA-111 and the appropriate AAT-202 conversion kit. Order additional conversion kits for different size nutserts.



HI-TORQUER "EXPENDABLES"

Sizes No. 4, 6, & 8 have a socket head capscrew and supplied hex key for installing the Nutsert. The "916" single size placing tool offers an inexpensive means of installing small quantities of Nutsert in the field with a low cost, expendable tool. Ideal to send out with a small bag of Nutserts for accessory installation, field modifications, or rework and repair. Designed for use in non-production type situations, the "916" will satisfactorily place up to 100 Nutsert. Each tool is individually packaged with instructions for use. 10, 1/4", 5/16" & 3/8" Hex head screw. This tool requires a standard socket wrench to drive the hex head screw.

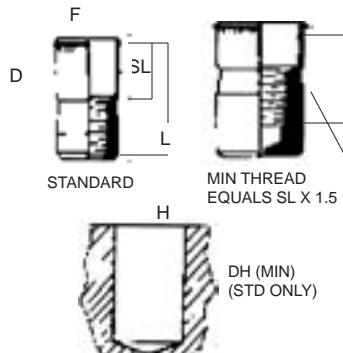


DESCRIPTION	PART NUMBER	PRICE EACH
Base tool	AA-112	49.65
THREAD SIZE	CONVERSION KIT PART NO.	PRICE EA
4-40	AAT-202-420	19.46
6-32	AAT-202-632	19.56
8-32	AAT-202-832	19.46
10-32	AAT-202-1032	19.67
1/4-20	AAT-202-420	19.46
1/4-28	AAT-202-428	18.18
5/16-18	AAT-202-518	19.46
5/16-24	AAT-202-524	19.46
3/8-16	AAT-202-616	19.40
3/8-24	AAT-202-624	21.09

NUTSERTS

Nutsert's unique swaging action and the axial knurl under the flange are the secrets behind its superior holding strength. Nutserts are a one-piece design consisting of a nut portion and a sleeve portion. A rotating tool mandrel, which is inserted into the threads from the sleeve side, causes a separation at the grooved break area, drawing the "nut" portion into the sleeve. As the nut portion pulls-up inside the sleeve, the sleeve is expanded, exerting a powerful 360° swage fit against the parent material. This expansion also causes the axial knurl, which is under the flange, to bite into the side of the hole, while the placing tool nose rolls the flange over, causing an additional locking effect to insure superior torque-out resistance.

THREAD SIZE	SINGLE SIZE PART NUMBER	PRICE PER TOOL
4-40	AAT-916-440	5.89
6-32	AAT-916-632	6.00
8-32	AAT-916-832	6.00
10-32	AAT-916-1032	5.89
1/4-20	AAT-916-420	5.89
1/4-28	AAT-916-428	5.89
5/16-18	AAT-916-518	6.84
5/16-24	AAT-916-524	5.89
3/8-16	AAT-916-616	5.89
3/8-24	AAT-916-624	6.25



THREAD SIZE	"D" MAX.	F MIN.	"SL" MAX.	"L" MAX.	"CSL" MAX.	"DH" MIN.	NUTSERT PART NO.	PRICE EACH
4-40	.1875	.206	.195	.390	.680	.400	ATS2-440	0.50
6-32	.2185	.234	.190	.380	.678	.390	ATS2-632	0.49
8-32	.2495	.265	.190	.380	.686	.390	ATS2-832	0.41
10-32	.2805	.296	.190	.380	.697	.390	ATS2-1032	0.48
1/4-20	.3745	.390	.263	.525	.935	.535	ATS2-420	0.49
1/4-28	.3745	.390	.263	.525	.935	.535	ATS2-428	0.63
5/16-18	.4995	.515	.313	.625	1.086	.635	ATS2-518	1.35
5/16-24	.4995	.515	.313	.625	1.086	.635	ATS2-524	1.29
3/8-16	.5615	.578	.375	.750	1.290	.760	ATS2-616	1.17
3/8-24	.5615	.578	.375	.750	1.290	.760	ATS2-624	0.59

HOLE SIZE VERSUS MATERIAL THICKNESS

THREAD SIZE	.030-.090		.091-.124		.125-.186		.187 & OVER	
	Drill	Decimal	Drill	Decimal	Drill	Decimal	Drill	Decimal
6-32	7/32	.2188	#2	.2210	#1	.2280	#1	.2280
8-32	1/4	.2500	"F"	.2570	17/64	.2656	17/64	.2656
10-32	9/32	.2812	"L"	.2900	"L"	.2900	19/64	.2969
1/4-20	3/8	.3750	3/8	.3750	"W"	.3860	25/64	.3906
1/4-28								
5/16-18								
5/16-24								
3/8-16								
3/8-24								

AN525 SLOTTED WASHER HEAD - STEEL

SLOTTED WASHER HEAD - Steel per AN-QQ-S-689; tensile strength 125,000 p.s.i. minimum. Cadmium plate finish per AN-P-61 (or zinc plate per AN-P-32).

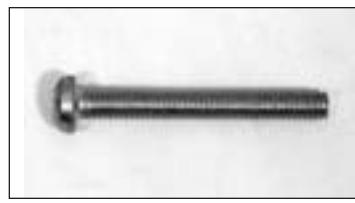
SIZE	LENGTH	PART NUMBER	PRICE
1032	1/2"	AN525-10-8	0.15
1032	5/8"	AN525-10-10	0.17

HARDWARE

AN525R WASHER HEAD CROSS RECESSED

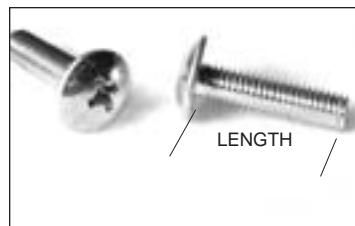
WASHER HEAD machine screw - Steel per AN-QQ-S-689; tensile strength 125,000 p.s.i. minimum. Cadmium plate finish per AN-P-61 (or zinc plate per AN-P-32).

DIA	LENGTH	PART NO.	PRICE EA.
THR'D	IN.		
8-32	1/4"	AN525-8R4	0.61
8-32	5/16"	AN525-8R5	0.16
8-32	3/8"	AN525-8R6	0.17
8-32	7/16"	AN525-8R7	0.18
8-32	1/2"	AN525-8R8	0.17
8-32	9/16"	AN525-8R9	0.17
8-32	5/8"	AN525-8R10	0.16
8-32	3/4"	AN525-8R12	0.19
8-32	7/8"	AN525-8R14	0.19
8-32	1"	AN525-8R16	0.21
8-32	1-1/8"	AN525-8R18	0.27
8-32	1-1/4"	AN525-8R20	0.27
8-32	1-1/2"	AN525-8R24	0.41
10-32	5/16"	AN525-10R5	0.17
10-32	3/8"	AN525-10R6	0.17
10-32	7/16"	AN525-10R7	0.17



AN526R TRUSS HEAD CROSS RECESSED

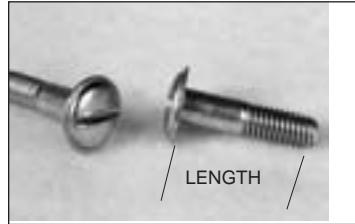
TRUSS HEAD machine screw Carbon steel per QQ-S-671, Type FS1010, 55,000 p.s.i. minimum tensile strength (or other steel meeting the same physical requirements). Cadmium plate finish per QQ-P-416, Type 1, Class 3.



DIA	LENGTH	PART NO.	PRICE EA.
THR'D	IN.		
10-32	1/2"	AN525-10R8	0.18
10-32	9/16"	AN525-10R9	0.19
10-32	5/8"	AN525-10R100	0.16
10-32	3/4"	AN525-10R120	0.29
10-32	7/8"	AN525-10R140	0.30
10-32	1"	AN525-10R160	0.30
10-32	1-1/8"	AN525-10R180	0.36
10-32	1-1/4"	AN525-10R200	0.36
10-32	1-1/2"	AN525-10R220	0.39
10-32	1-3/8"	AN525-10R240	0.40
10-32	1-1/2"	AN525-10R260	0.43
10-32	1-7/8"	AN525-10R301	0.15
10-32	2"	AN525-10R32	
1/4-28	5/8"	AN525-416R100	0.45
1/4-28	3/4"	AN525-416R121	0.25
1/4-28	7/8"	AN525-416R140	0.71

AN526 SLOTTED TRUSS HEAD

TRUSS HEAD machine screw - Carbon steel per QQ-S-671, Type FS1010, 55,000 p.s.i. minimum tensile strength (or other steel meeting the same physical requirements). Cadmium plate finish per QQ-P-416, Type 1, Class 3. Inquire for other size availability.



DIA	LENGTH	PART PRICE
THR'D	IN.	NO. EA
6-32	9/16"	AN526-6-9
6-32	5/8"	AN526-6-10
6-32	3/4"	AN526-6-12
8-32	3/8"	AN526-8-6
8-32	7/8"	AN526-8-14
8-32	1"	AN526-8-16

DIA	LENGTH	PART PRICE
THR'D	IN.	NO. EA
8-32	1-1/8"	AN526-8-18
8-32	1-1/2"	AN526-8-24
8-32	2"	AN526-8-32
10-32	3/8"	AN526-10-6
10-32	5/8"	AN526-10-10
10-32	7/8"	AN526-10-14

AN526C SLOTTED TRUSS HEAD - STAINLESS

Stainless steel, slotted machine screw.

SIZE	LENGTH	PART NUMBER	PRICE
632	1/2"	AN526C-6-8	0.32
1032	5/8"	AN526C-10-16	0.17

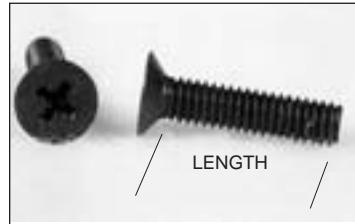
AN526C STAINLESS TRUSS HEAD CROSS RECESSED

TRUSS HEAD PHILLIPS Stainless steel machine screw

DIA	LENGTH	PART NUMBER	PRICE
THR'D	INCHES		EA
6-32	3/8"	AN526C-6R6	0.14
6-32	1/2"	AN526C-6R8	0.15
6-32	5/8"	AN526C-6R10	0.13
6-32	3/4"	AN526C-6R12	0.15
8-32	3/8"	AN526C-8R6	0.14
8-32	1/2"	AN526C-8R8	0.18
8-32	5/8"	AN526C-8R10	0.15
8-32	3/4"	AN526C-8R12	0.15
10-32	3/8"	AN526C-10R6	0.16
10-32	1/2"	AN526C-10R8	0.20
10-32	5/8"	AN526C-10R10	0.18
10-32	3/4"	AN526C-10R12	0.16
10-32	1"	AN526C-10R16	0.18

MS24693B BRASS FLAT HEAD CROSS RECESSED

CROSS RECESSED 100° FLAT HEAD machine screws
Brass screw, black oxide coated.
Brass Spec QQ-W-321 or QQ-B-626.
Black oxide per MIL-F-495.



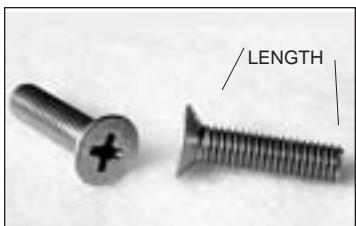
DIA	LENGTH	PART PRICE	
THR'D	IN.	NO. EA.	
4-40	1/4"	MS24693-BB2	0.14
4-40	5/16"	MS24693-BB3	0.14
4-40	7/16"	MS24693-BB5	0.14
4-40	1/2"	MS24693-BB6	0.19
4-40	5/8"	MS24693-BB7	0.14
4-40	3/4"	MS24693-BB8	
4-40	7/8"	MS24693-BB9	0.45
4-40	1"	MS24693-BB10	0.67
6-32	1/4"	MS24693-BB24	0.18
6-32	3/8"	MS24693-BB26	0.25
6-32	7/16"	MS24693-BB27	0.22
6-32	1/2"	MS24693-BB28	0.22
6-32	5/8"	MS24693-BB29	0.19
6-32	3/4"	MS24693-BB30	0.15
6-32	7/8"	MS24693-BB31	0.25
6-32	1"	MS24693-BB32	0.22
6-32	1-1/8"	MS24693-BB33	0.25

DIA	LENGTH	PART PRICE	
THR'D	IN.	NO. EA.	
6-32	1-1/4"	MS24693-BB34	0.22
6-32	1-1/2"	MS24693-BB36	0.30
6-32	2"	MS24693-BB40	0.80
8-32	3/8"	MS24693-BB48	0.20
8-32	7/16"	MS24693-BB49	
8-32	1/2"	MS24693-BB50	0.29
8-32	5/8"	MS24693-BB51	0.20
8-32	3/4"	MS24693-BB52	0.33
8-32	1"	MS24693-BB54	0.29
8-32	1-1/2"	MS24693-BB58	0.69
8-32	2"	MS24693-BB62	1.10
10-32	3/16	MS24693-BB267	
10-32	7/16"	MS24693-BB271	
10-32	1/2"	MS24693-BB272	0.25
10-32	5/8"	MS24693-BB273	0.16
10-32	3/4"	MS24693-BB274	0.29
10-32	7/8"	MS24693-BB275	0.49
10-32	1"	MS24693-BB276	0.35
10-32	1-1/4"	MS24693-BB278	0.37

HARDWARE

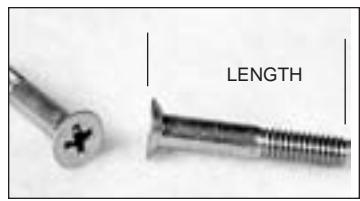
MS24693C STAINLESS FLAT HEAD CROSS RECESSED

100° FLAT HEAD, stainless steel.
80,000 psi



MS24694 FLAT HEAD CROSS RECESSED

CROSS RECESSED 100° FLAT HEAD machine screw. Low-alloy steel. Rockwell hardness C26 to C32 MIL-S-6050 /AMS6300, 125,000 PSI minimum tensile strength. Cadmium plated per Spec QQ-P-416, Type 2, Class 3. Head marked with a single "X".



DIA THRD	LENGTH INCHES	PART NUMBER	PRICE EACH	PRICE P/100
6-32	3/8"	MS24693-C26	0.14	
6-32	1/2"	MS24693-C28	0.15	
6-32	5/8"	MS24693-C29	0.16	
6-32	3/4"	MS24693-C30	0.15	
8-32	3/8"	MS24693-C48	0.15	
8-32	1/2"	MS24693-C50	0.15	
8-32	5/8"	MS24693-C51	0.15	
8-32	3/4"	MS24693-C52	0.15	
10-32	3/8"	MS24693-C270	0.15	
10-32	1/2"	MS24693-C272	0.16	
10-32	5/8"	MS24693-C273	0.17	
10-32	3/4"	MS24693-C274	0.14	
10-32	1"	MS24693-C276	0.25	--
10-32	1-1/2"	MS24693-C280	0.40	--
10-32	1-3/4"	MS24693-C282	0.55	

MS24693 FLAT HEAD CROSS RECESSED

CROSS RECESSED 100° FLAT HEAD machine screws (Old AN507R) -Carbon steel per Spec QQ-S-634, FS101, 60,000 psi minimum tensile strength. Cadmium plated per Spec QQ-P-416, Type 2, Class 3.



SIZE LENGTH	PART PRICE
THR'D IN.	NO. EA.
4-40 1/4"	MS24693-S2 0.14
4-40 5/16"	MS24693-S3 0.14
4-40 3/8"	MS24693-S4 0.14
4-40 7/16"	MS24693-S5 0.13
4-40 1/2"	MS24693-S6 0.14
4-40 5/8"	MS24693-S7 0.14
4-40 3/4"	MS24693-S8 0.16
4-40 7/8"	MS24693-S9 0.15
4-40 1"	MS24693-S10 0.14
6-32 1/4"	MS24693-S24 0.14
6-32 5/16"	MS24693-S25 0.15
6-32 3/8"	MS24693-S26 0.15
6-32 7/16"	MS24693-S27 0.14
6-32 1/2"	MS24693-S28 0.14
6-32 5/8"	MS24693-S29 0.14
6-32 3/4"	MS24693-S30 0.14
6-32 7/8"	MS24693-S31 0.14
6-32 1"	MS24693-S32 0.14
6-32 1-1/8"	MS24693-S33 0.16
6-32 1-1/4"	MS24693-S34 0.14
6-32 1-1/2"	MS24693-S36 0.16
6-32 2"	MS24693-S40 0.32
8-32 1/4"	MS24693-S46 0.14
8-32 5/16"	MS24693-S47 0.15
8-32 3/8"	MS24693-S48 0.13
8-32 7/16"	MS24693-S49 0.13
8-32 1/2"	MS24693-S50 0.14

SIZE LENGTH	PART PRICE
THR'D IN.	NO. EA.
8-32 5/8"	MS24693-S51 0.15
8-32 3/4"	MS24693-S52 0.15
8-32 7/8"	MS24693-S53 0.16
8-32 1"	MS24693-S54 0.14
8-32 1-1/8"	MS24693-S55 0.18
8-32 1-1/4"	MS24693-S56 0.16
8-32 1-1/2"	MS24693-S58 0.15
8-32 1-3/4"	MS24693-S60 0.15
8-32 2"	MS24693-S62 0.29
8-32 2-1/2"	MS24693-S4 0.14
10-32 1/4"	MS24693-S268 0.17
10-32 5/16"	MS24693-S269 0.16
10-32 3/8"	MS24693-S270 0.15
10-32 7/16"	MS24693-S271 0.15
10-32 1/2"	MS24693-S272 0.16
10-32 5/8"	MS24693-S273 0.15
10-32 3/4"	MS24693-S274 0.15
10-32 7/8"	MS24693-S275 0.15
10-32 1"	MS24693-S276 0.16
10-32 1-1/8"	MS24693-S277 0.21
10-32 1-1/4"	MS24693-S278 0.20
10-32 1-1/2"	MS24693-S280 0.19
10-32 1-3/4"	MS24693-S282 0.20
1/4-28 7/16"	MS24693-S293 0.22
1/4-28 1/2"	MS24693-S294 0.17
1/4-28 5/8"	MS24693-S295 0.21
1/4-28 3/4"	MS24693-S296

MS24694 FLAT HEAD CROSS RECESSED

SIZE LENGTH	PART PRICE
THR'D IN.	NO. EA.
8-32 9/32"	MS24694-S1 0.14
8-32 11/32"	MS24694-S2 0.14
8-32 13/32"	MS24694-S3 0.14
8-32 15/32"	MS24694-S4 0.14
8-32 17/32"	MS24694-S5 0.14
8-32 19/32"	MS24694-S6 0.15
8-32 21/32"	MS24694-S7 0.14
8-32 23/32"	MS24694-S8 0.14
8-32 25/32"	MS24694-S9 0.15
8-32 27/32"	MS24694-S10 0.15
8-32 29/32"	MS24694-S11 0.15
8-32 31/32"	MS24694-S12 0.26
8-32 1-1/32"	MS24694-S13 0.27
8-32 1-3/32"	MS24694-S14 0.16
8-32 1-5/32"	MS24694-S15 0.17
8-32 1-7/32"	MS24694-S16 0.19
8-32 1-9/32"	MS24694-S17 0.15
8-32 1-13/32"	MS24694-S19 0.19
8-32 1-15/32"	MS24694-S20 0.20
8-32 1-17/32"	MS24694-S21 0.19
8-32 1-23/32"	MS24694-S24 0.55
8-32 1-27/32"	MS24694-S26 1.10
8-32 1-29/32"	MS24694-S28 1.70
10-32 9/32"	MS24694-S46 0.16
10-32 11/32"	MS24694-S47 0.19
10-32 13/32"	MS24694-S48 0.17
10-32 15/32"	MS24694-S49 0.16
10-32 17/32"	MS24694-S50
10-32 19/32"	MS24694-S51 0.16
10-32 21/32"	MS24694-S52 0.18
10-32 23/32"	MS24694-S53 0.18
10-32 25/32"	MS24694-S54 0.19
10-32 27/32"	MS24694-S55 0.19
10-32 29/32"	MS24694-S56 0.19
10-32 31/32"	MS24694-S57 0.19
10-32 1-1/32"	MS24694-S58 0.19
10-32 1-3/32"	MS24694-S59 0.20
10-32 1-5/32"	MS24694-S60 0.18
10-32 1-7/32"	MS24694-S61 0.19
10-32 1-9/32"	MS24694-S62 0.31
10-32 11/32"	MS24694-S63 0.32
10-32 13/32"	MS24694-S64 0.36
10-32 1-15/32"	MS24694-S65 0.37
10-32 1-17/32"	MS24694-S66 0.38
10-32 1-21/32"	MS24694-S68 0.38
10-32 1-23/32"	MS24694-S69 0.39
10-32 1-25/32"	MS24694-S70 0.36
10-32 1-27/32"	MS24694-S71 0.95

MS24694C MACHINE SCREW SS

MS24694 MACHINE SCREWS CROSS RECESSED 100° FLAT HEAD Low-alloy steel. Rockwell hardness C26 to C32 MIL-S-6050 /AMS6300, 125,000 PSI minimum tensile strength. Cadmium plated per Spec QQ-P-416, Type 2, Class 3. Head marked with a single "X".



DIA/THREAD	LENGTH	PART NUMBER	PRICE
10-32	21/32"	MS24694-C52	0.22

HARDWARE

MS27039 PAN HEAD CROSS RECESSED

CROSS RECESSED PAN HEAD machine screw. Low alloy steel per MIL-S-8695/MIL-S-6050, Rockwell hardness C26 to C32; 125,000 to 145,000 PSI tensile strength. Cadmium plate finish per QQ-P-416, Type 2, Class 3. Supercedes NAS220 #8-32, NAS221 #10-32 Brazier Head, Phillips recess screws.

DIA	LENGTH	PART PRICE
THR'D IN.	NO.	EA.
8-32	9/32"	MS27039-08040.16
8-32	13/32"	MS27039-08060.27
8-32	15/32"	MS27039-08070.27
8-32	17/32"	MS27039-08080.32
8-32	19/32"	MS27039-08090.22
8-32	21/32"	MS27039-08100.22
8-32	23/32"	MS27039-08110.15
8-32	25/32"	MS27039-08120.27
8-32	29/32"	MS27039-08140.19
8-32	1-1/32"	MS27039-08160.32
8-32	1-5/32"	MS27039-08180.19
8-32	1-9/32"	MS27039-08200.23

MS35190 FLAT HEAD CROSS RECESSED

CROSS RECESSED 82° FLAT HEAD machine screw. Carbon steel to Fed Std #66, AISI identification C1013, 55,000 PSI minimum tensile strength. Cadmium plate finish to QQ P-416, Type 2, Class 3. Old AN505R

DIA	LENGTH	PART PRICE
THR'D IN	NO.	EA.
4-40	1/4"	MS35190-2210.20
4-40	5/16"	MS35190-222 0.16
4-40	1/2"	MS35190-225 0.20
4-40	5/8"	MS35190-226
4-40	1"	MS35190-229 0.14
4-40	1-1/2"	MS35190-231 0.14
6-32	1/4"	MS35190-234 0.26
6-32	3/8"	MS35190-236 0.16
6-32	1/2"	MS35190-238 0.14
6-32	5/8"	MS35190-239 0.15
6-32	3/4"	MS35190-240 0.17
6-32	1"	MS35190-242 0.14

MS35191 FLAT HEAD CROSS RECESSED

CROSS RECESSED FLAT HEAD 82° COUNTERSUNK Carbon steel, cadmium plated UNF-2A (old AN510)

DIA	LENGTH	PART PRICE
THR'D IN.	NO.	EA.
10-32	7/16"	MS35191-2710.27

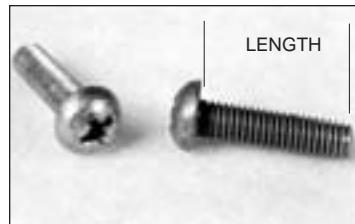


DIA	LENGTH	PART PRICE
THR'D IN.	NO.	EA.
10-32	3/4"	MS35191-274 0.19

MS35206 PAN HEAD CROSS RECESSED

CROSS RECESSED PAN HEAD Carbon steel Fed Std. #66, AISI identification #C1010, C1011, C1012 or C1013; 60,000 PSI minimum tensile strength. Cadmium plated finish per Spec. QQ-P-416 Type 2, Class 3. Can be used as a replacement AN526. Old AN 515 number.

SIZE	LENGTH	PART PRICE
THR'D IN.	NO.	EA.
2-56	1/4"	MS35206-203 0.13
2-56	3/8"	MS35206-205 0.12
2-56	1/2"	MS35206-207 0.15
2-56	5/8"	MS35206-208 0.11
2-56	3/4"	MS35206-209 0.12
4-40	3/16"	MS35206-212 0.14
4-40	1/4"	MS35206-213 0.13
4-40	5/16"	MS35206-214 0.11
4-40	3/8"	MS35206-215 0.14
4-40	7/16"	MS35206-216 0.14
4-40	1/2"	MS35206-217 0.13
4-40	5/8"	MS35206-218 0.14
4-40	3/4"	MS35206-219 0.13
4-40	7/8"	MS35206-220 0.14
4-40	1"	MS35206-221 0.13
4-40	1-1/4"	MS35206-222 0.18
4-40	1-1/2"	MS35206-223 0.15
6-32	1/4"	MS35206-226 0.17
6-32	5/16"	MS35206-227 0.14
6-32	3/8"	MS35206-228 0.15
6-32	7/16"	MS35206-229 0.16
6-32	1/2"	MS35206-230 0.14
6-32	3/4"	MS35206-232 0.17
6-32	7/8"	MS35206-233 0.14
6-32	1"	MS35206-234 0.16

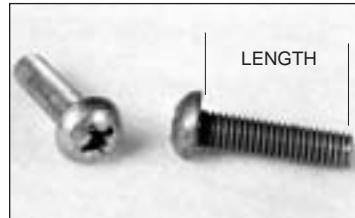


SIZE	LENGTH	PART PRICE
THR'D IN.	NO.	EA.
6-32	1"	MS35206-234 0.16
6-32	1-1/4"	MS35206-235 0.17
6-32	1-1/2"	MS35206-236 0.18
6-32	2"	MS35206-238 0.24
8-32	5/16"	MS35206-242 0.15
8-32	3/8"	MS35206-243 0.14
8-32	7/16"	MS35206-244 0.14
8-32	1/2"	MS35206-245 0.17
8-32	5/8"	MS35206-246 0.11
8-32	3/4"	MS35206-247 0.14
8-32	7/8"	MS35206-248 0.14
8-32	1"	MS35206-249 0.14
8-32	1-1/4"	MS35206-250 0.15
8-32	1-1/2"	MS35206-251 0.32
8-32	1-3/4"	MS35206-252 0.15
8-32	2"	MS35206-253 0.25
8-32	2-1/4"	MS35206-254 0.17
8-32	2-1/2"	MS35206-255 0.15
8-32	2-3/4"	MS35206-256 0.17
10-24	3/8"	MS35206-261 0.16
10-24	7/16"	MS35206-262 0.16
10-24	1/2"	MS35206-263 0.17
10-24	5/8"	MS35206-264 0.16
10-24	3/4"	MS35206-265 0.16
10-24	1"	MS35206-267 0.16

MS35207 PAN HEAD CROSS RECESSED

CROSS RECESSED PAN HEAD Carbon steel to Fed. Std #66, AISI identification #C1010,C1012 or C1013; 55,000 PSI minimum tensile strength. Cadmium plated finish per Spec QQ-P-461 Type 2, Class 3. Old AN520

SIZE	LENGTH	PART PRICE
THR'D IN.	NO.	EA.
8-36	3/8"	MS35207-243 0.15
8-36	5/8"	MS35207-246 0.16
10-32	1/4"	MS35207-259 0.15
10-32	5/16"	MS35207-260 0.12
10-32	3/8"	MS35207-261 0.14
10-32	7/16"	MS35207-262 0.13
10-32	1/2"	MS35207-263 0.16
10-32	5/8"	MS35207-264 0.13



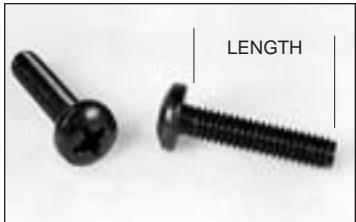
SIZE	LENGTH	PART PRICE
THR'D IN.	NO.	EA.
10-32	3/4"	MS35207-265 0.13
10-32	7/8"	MS35207-266 0.12
10-32	1"	MS35207-267 0.13
10-32	1-1/4"	MS35207-268 0.13
10-32	1-1/2"	MS35207-269 0.14
10-32	1-3/4"	MS35207-270 0.16
10-32	2"	MS35207-271 0.19
1/4-28	2-1/4"	MS35207-288 0.85

HARDWARE

MS35214 BRASS PAN HEAD CROSS RECESSED

CROSS RECESSED PAN HEAD
Brass per spec. QQ-B-613,626 or QQ-W-321; 55,000 PSI minimum tensile strength. Black oxide coated per Spec. MIL-F-495. 4-40 for use with instruments. Old AN515B number)

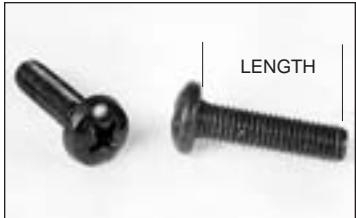
SIZE LENGTH	PART NO.	PRICE EA.
THD IN.		
4-40 3/8"	MS35214-14	0.20
4-40 1/2"	MS35214-16	0.25
4-40 5/8"	MS35214-17	0.28
4-40 3/4"	MS35214-18	0.16
6-32 1/4"	MS35214-23	0.16
6-32 3/8"	MS35214-25	0.16
6-32 7/16"	MS35214-26	0.20
6-32 1/2"	MS35214-27	0.16
6-32 5/8"	MS35214-28	0.18
6-32 3/4"	MS35214-29	0.38
6-32 7/8"	MS35214-30	0.26



MS35215 BRASS PAN HEAD CROSS RECESSED

CROSS RECESSED PAN HEAD machine screws Brass per spec. QQ-B-613/626 or QQ-W-321, 55,000 PSI minimum tensile strength. Black oxide coated per Spec MIL-F-495. Old AN520B

SIZE LENGTH	PART NO.	PRICE EA.
THD IN.		
10-32 3/8"	MS35215-53	0.45
10-32 1/2"	MS35215-55	0.27
10-32 5/8"	MS35215-56	0.33
10-32 3/4"	MS35215-57	0.27



MS35265 DRILLED FILLESTER HEAD SLOTTED

COARSE THREAD SLOTTED DRILLED FILLESTER HEAD Carbon steel to Procurement spec FF-S-91, 55,000 PSI minimum tensile strength. Cadmium plate finish to Spec QQ-P-416, Type 2, Class 3. Old AN500A

SIZE LENGTH	PART NO.	PRICE EA.
THD IN.		
4-40 1/4"	MS35265-13	0.29
4-40 5/16"	MS35265-14	0.24
4-40 3/8"	MS35265-15	0.30
4-40 7/16"	MS35265-16	0.29
4-40 1/2"	MS35265-17	0.30
4-40 5/8"	MS35265-18	0.34
4-40 3/4"	MS35265-19	0.35
6-32 1/4"	MS35265-26	0.38
6-32 5/16"	MS35265-27	0.39
6-32 3/8"	MS35265-28	0.26
6-32 1/2"	MS35265-30	0.24
6-32 3/4"	MS35265-32	0.27
8-32 1/4"	MS35265-41	0.35
8-32 5/16"	MS35265-42	0.29
8-32 3/8"	MS35265-43	0.29
8-32 7/16"	MS35265-44	0.30
8-32 1/2"	MS35265-45	0.35
8-32 5/8"	MS35265-46	0.36



MS35266 DRILLED FILLESTER HEAD SLOTTED

SLOTTED-FINE THREAD Same as above MS35265, but with fine threads. Old AN501A

SIZE LENGTH	PART NO.	PRICE EA.
THD IN.		
6-40 5/8"	MS35266-31	0.25
10-32 5/16"	MS35266-60	0.22
10-32 3/8"	MS35266-61	0.29
10-32 7/16"	MS35266-62	0.30
10-32 1/2"	MS35266-63	0.35
10-32 5/8"	MS35266-64	0.30
10-32 3/4"	MS35266-65	0.29
10-32 1"	MS35266-67	0.35
10-32 1-1/4"	MS35266-68	0.22



SOCKET SCREWS

Alloy steel for maximum tensiles up to 190,000 psi. 1/4-20 threads. Use Allen wrench.

LENGTH	PART NUMBER	PRICE EA
3/4"	CS1/4x20x3/4	0.22
1"	CS1/4x20x1	0.23
1-1/4"	CS1/4x20x1-1/4	0.25
1-1/2"	CS1/4x20x1-1/2	0.22
2"	CS1/4x20x2	0.24



SET SCREWS

Set screws provide fast, permanent location of parts on shafts. The cup point edge digs into the contact surface for maximum holding power when under pressure. Length listed is overall length.

Uses Allen wrenches



THREAD	LENGTH	PART NUMBER	PRICE EA
832	3/16"	SS832x3/16	0.21
832	1/4"	SS832x1/4	0.21
1032	1/4"	SS1032x1/4	0.21
1/4-28	5/16"	SS1/4-28x5/16	0.21

VALVE COVER SCREWS

Stainless screw, phillips pan head with captive washers. One size only.

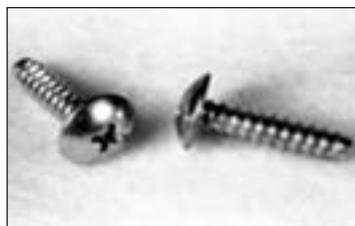


THREAD	LENGTH	PART NUMBER	PRICE EA
1/4 x 20	5/8"	STD-1925PPS	0.75

HARDWARE

TRUSS HEAD CROSS RECESSED POINTED END

Phillips recessed, truss head, Type A, pointed end.



STAINLESS 82° FLAT HEAD PHILLIPS POINTED

Stainless steel 82° sheet metal screws, phillips recessed flat head with pointed end.



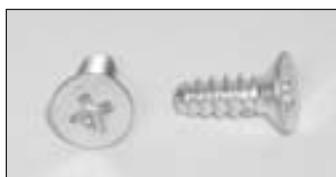
SIZE	LENGTH	PART NUMBER	25 PACK
STAINLESS			
4	1/4"	4Rx1/4-THA-SS	1.25
4	3/8"	4Rx3/8-THA-SS	1.55
4	1/2"	4Rx1/2-THA-SS	1.06
6	3/8"	6Rx3/8-THA-SS	1.29
6	1/2"	6Rx1/2-THA-SS	1.15
6	5/8"	6Rx5/8-THA-SS	1.81
8	3/8"	8Rx3/8-THA-SS	1.44
8	1/2"	8Rx1/2-THA-SS	1.30
8	5/8"	8Rx5/8-THA-SS	1.59
8	3/4"	8Rx3/4-THA-SS	1.69
10	3/8"	10Rx3/8-THA-SS	1.60
10	1/2"	10Rx1/2-THA-SS	1.55
10	5/8"	10Rx5/8-THA-SS	1.79
10	3/4"	10Rx3/4-THA-SS	1.75

STANDARD

SIZE	LENGTH	PART NUMBER	25 PACK
4	1/4"	4Rx1/4-THA	0.99
4	3/8"	4Rx3/8-THA	1.35
4	1/2"	4Rx1/2-THA	0.80
4	5/8"	4Rx5/8-THA	1.39
4	3/4"	4Rx3/4-THA	1.39
6	3/8"	6Rx3/8-THA	0.99
6	1/2"	6Rx1/2-THA	0.99
6	5/8"	6Rx5/8-THA	1.10
6	3/4"	6Rx3/4-THA	0.99
8	3/8"	8Rx3/8-THA	0.99
8	1/2"	8Rx1/2-THA	0.99
8	5/8"	8Rx5/8-THA	1.25
8	3/4"	8Rx3/4-THA	1.26
8	1"	8Rx1-THA	1.25
10	3/8"	10Rx3/8-THA	1.21
10	1/2"	10Rx1/2-THA	1.36
10	3/4"	10Rx3/4-THA	1.22
10	1"	10Rx1-THA	1.65

NAS548P 100° FLAT HEAD PHILLIPS BLUNT END

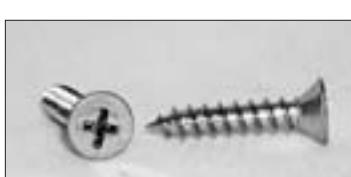
Phillips flat head, Type B - blunt end.



SIZE	LENGTH	PART NUMBER	25 PACK
4	1/4"	NAS548P4-4	5.30
4	1/2"	NAS548P4-8	5.83
6	3/8"	NAS548P6-6	3.71
6	1/2"	NAS548P6-8	3.71
6	5/8"	NAS548P6-10	3.18
6	3/4"	NAS548P6-12	3.45
8	3/8"	NAS548P8-6	3.18
8	1/2"	NAS548P8-8	2.65
8	5/8"	NAS548P8-10	2.65
8	3/4"	NAS548P8-12	3.18
8	1"	NAS548P8-16	7.95
10	3/8"	NAS548P10-6	3.45
10	1/2"	NAS548P10-8	3.45
10	3/4"	NAS548P10-12	2.76

SCREW - SLOTTED BLUNT HEAD - SS

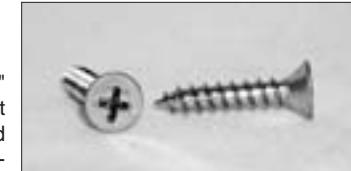
Stainless Steel Slotted Blunt Head Screw.



SIZE	LENGTH	END	PART NUMBER	PRICE
832	1/2"	BLUNT	8X1/2-FHB-SS	2.40
632	1/2"	BLUNT	6X1/2-FHB-SS	1.69
1032	1/2"	BLUNT	10X1/2-FHB-SS	2.54

SCREW - FLAT HEAD BLUNT END - STAINLESS

Phillips, 100 degree flat head, type 'B' blunt end. Made of corrosion-resistant steel, type 410, hardened. Passivated per QQ-P-35-Stainless. Sold in packages of 25.



SIZE	LENGTH	PART NUMBER	PRICE
632	1/2"	MS21207C6-8	3.71
832	1/2"	MS21207C8-8	3.18
832	5/8"	MS21207C8-10	3.18
1032	1/2"	MS21207C10-8	3.25

HARDWARE

82° FLAT HEAD SLOTTED POINTED END

Coarse thread with gimlet point. For use on sheet metal, plywood and asbestos.



SIZE	LENGTH INCHES	PART NUMBER	PRICE 25 PACK	PRICE P/100
4	1/4"	4x1/4-FHA	2.50	
4	3/8"	4x3/8-FHA	1.25	
4	1/2"	4x1/2-FHA	2.50	
4	5/8"	4x5/8-FHA	2.25	
4	3/4"	4x3/4-FHA	2.25	
6	3/8"	6x3/8-FHA	1.33	
6	1/2"	6x1/2-FHA	1.06	
6	5/8"	6x5/8-FHA	1.44	
6	3/4"	6x3/4-FHA	2.12	
8	3/8"	8x3/8-FHA	1.26	
8	1/2"	8x1/2-FHA	1.33	
8	5/8"	8x5/8-FHA	2.29	
8	3/4"	8x3/4-FHA	1.45	
8	1"	8x1-FHA	2.25	
10	1/2"	10x1/2-FHA	3.45	
10	3/4"	10x3/4-FHA	1.59	
10	1"	10x1-FHA	1.59	

THA SCREW & WASHER KIT

Kit contains: 25 each THA screws:
4Rx1/4", 3/8", 1/2" THA, 6R
x3/8", 1/2",
5/8", THA 8Rx 3/8", 1/2" 5/8", 3/4",
10R x 1/2", 5/8", 3/4", 1" 100 washers,
AN960-4, 6, 8, 10. One large plastic box.



DESCRIPTION	PART NUMBER	PRICE EA.
THA screw & washer kit	THA-KIT	35.11

STAINLESS THA SCREW & WASHER KIT

Kit contains: 25 each stainless screws:
4Rx1/4", 3/8", 1/2" THASS, 6R x3/8",
1/2", 5/8", THASS, 8Rx 3/8", 1/2", 5/8",
3/4" THASS, 10R x 1/2", 5/8", 3/4", 1"
THASS, 100 stainless washers,
AN960C-4, 6, 8, 10. One large plastic box.



DESCRIPTION	PART NUMBER	PRICE EA.
Stainless screw & washer kit	THA-SS-KIT	43.73

COTTER PIN KIT

Kit contains: 100 each
MS24665-134 1/16" dia x 3/4" length
MS24665-136 1/16" dia x 1" length
MS24665-285 3/32" dia x 1" length
MS24665-353 1/8" dia x 1" length



DESCRIPTION	PART NO.	PRICE EA.
Cotter pin kit	CP100	11.48

MS24665 COTTER PINS

Steel cadmium plated unless designated by * for corrosion resisting steel.
AN 3-4-5 bolts use 1/16" hole size
AN6-7-8 bolts use 3/32" hole size
Sold in 25 packs.



DIA	LENGTH	OLD AN NUMBER	MS PART NUMBER	PRICE EA	PRICE P/100
1/32	1/2	AN380-1-2	MS24665-5	0.53	
1/32	1/2	AN381-1-8	MS24665-22*	1.45	
1/32	3/4	AN380-1-3	MS24665-7	0.53	
1/32	1	AN380-1-4	MS24665-9	0.80	
1/16	1/2	AN380-2-2	MS24665-132	0.65	
1/16	1/2	AN381-2-8	MS24665-151*	1.33	
1/16	5/8	AN381-2-10	MS24665-152*		
1/16	3/4	AN380-2-3	MS24665-134	0.65	
1/16	3/4	AN381-2-12	MS24665-153*		
1/16	1	AN380-2-4	MS24665-136	0.67	
1/16	1	AN381-2-16	MS24665-155*	1.55	
1/16	1-1/4	AN380-2-5	MS24665-138	1.30	
1/16	1-1/2	AN380-2-6	MS24665-140	1.15	
1/16	1-3/4	AN380-2-7	MS24665-142	0.90	
1/16	2	AN380-2-8	MS24665-143	1.33	
5/64	1/2	AN381-25-8	MS24665-227*	1.75	
5/64	1	AN381-25-16	MS24665-231*	2.40	
5/64	1	AN380-25-4	MS24665-212	0.79	
5/64	1-1/2	AN381-25-24	MS24665-235*	3.18	
5/64	2	AN381-25-32	MS24665-238*	2.65	
3/32	1/2	AN380-3-2	MS24665-281	0.65	
3/32	1/2	AN381-3-8	MS24665-298*	1.59	
3/32	3/4	AN380-3-3	MS24665-283	0.80	
3/32	3/4"	AN381-3-12	MS24665-300*	2.35	
3/32	1	AN380-3-4	MS24665-285	0.80	
3/32	1	AN381-3-16	MS24665-302*	2.39	
3/32	1-1/4"	AN380-3-5	MS24665-287	0.90	
3/32	1-1/4	AN381-3-20	MS24665-304*	2.92	
1/8	1-1/4"	AN380-4-5	MS24665-355	1.33	
3/32	1-1/2	AN380-3-6	MS24665-289	1.25	
3/32	1-3/4	AN380-3-7	MS24665-291	0.95	
3/32	2	AN380-3-8	MS24665-292	1.33	
3/32	2-1/2	AN380-3-10	MS24665-294	1.33	
1/8	1/2	AN380-4-2	MS24665-349	0.65	
1/8	3/4	AN380-4-3	MS24665-351	0.80	
1/8	3/4	AN381-4-12	MS24665-368*	2.92	
1/8	1	AN380-4-4	MS24665-353	1.35	
1/8	1-1/2	AN380-4-6	MS24665-357	1.45	
1/8	1-3/4	AN380-4-7	MS24665-359	1.50	
1/8	2	AN380-4-8	MS24665-360	1.59	
1/8	2	AN381-4-32	MS24665-377*	4.24	
1/8	2-1/4	AN381-4-36	MS24665-378*	4.24	
1/8	3	AN380-4-12	MS24665-363	2.39	
5/32	1	AN380-5-4	MS24665-419	1.89	
5/32	1-1/2	AN380-5-6	MS24665-423	1.59	
5/32	1-3/4	AN380-5-7	MS24665-425	1.89	
5/32	2	AN380-5-8	MS24665-426	2.39	
5/32	2-1/2	AN380-5-10	MS24665-428	3.03	
3/16	3"	AN380-6-12	MS24665-502	4.24	

SMALL COTTER PIN KIT

SMALL cotter pin kit contains 25 each cotter pins MS24665-134, MS24665-136, MS24665-285, MS24665-353 individually bagged.

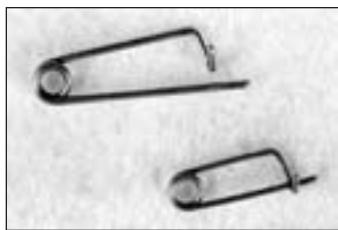
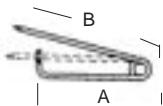


DESCRIPTION	PART NUMBER	PRICE
25 EA - 134,136,285,353	CP100-SMALL	3.47

HARDWARE

AN416 COWLING SAFETY PINS

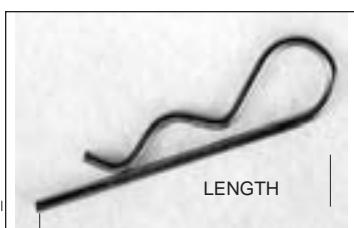
Positive locking pin that can be used without tool. Made of spring steel in conformance with AN416 std. drawing and cadmium plated per Spec. QQ-P-416.



DIMENSIONS IN INCHES		PART NUMBER	PRICE EACH
A	B	PIN	
1-1/16	1-3/8	.051	AN416-1 0.17
3/4	15/16	.041	AN416-2 0.24

AN415 COWLING LOCK PINS

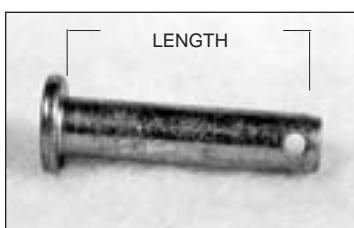
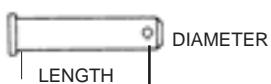
Used with AN226 cowl fastener where the pin passes through on stud only. Made of corrosion-resistant steel wire.



WIRE SIZE	LENGTH IN INCHES	PART NUMBER	PRICE EACH
80	1-15/16	AN415-2	0.45

MS20392 CLEVIS PIN

Made of steel per Mil-S-P5673, cadmium plated per QQ-P-416. Drilled hole for cotter pin. Length measured from under head to center of hole. Order by MS number



DIA	LENGTH	OLD AN	MS PART NO.	PRICE EA.
1/8	7/32	AN392-7	MS20392-1C7	0.42
1/8	9/32	AN392-9	MS20392-1C9	0.55
1/8	11/32	AN392-11	MS20392-1C11	0.42
1/8	13/32	AN392-13	MS20392-1C13	0.42
1/8	15/32	AN392-15	MS20392-1C15	0.44
1/8	17/32	AN392-17	MS20392-1C17	0.54
1/8	19/32	AN392-19	MS20392-1C19	0.39
1/8	21/32	AN392-21	MS20392-1C21	0.51
1/8	23/32	AN392-23	MS20392-1C23	0.61
1/8	25/32	AN392-25	MS20392-1C25	0.62
1/8	27/32	AN392-27	MS20392-1C27	0.59
1/8	29/32	AN392-29	MS20392-1C29	0.69
1/8	31/32	AN392-31	MS20392-1C31	0.58
1/8	1-3/32	AN392-35	MS20392-1C35	0.57
1/8	1-5/32	AN392-37	MS20392-1C37	0.57
1/8	1-7/32	AN392-39	MS20392-1C39	0.53
1/8	1-9/32	AN392-41	MS20392-1C41	0.86
1/8	1-11/32	AN392-43	MS20392-1C43	0.89
1/8	1-13/32	AN392-45	MS20392-1C45	0.99
1/8	1-17/32	AN392-49	MS20392-1C49	1.02
1/8	1-21/32	AN392-53	MS20392-1C53	1.59
1/8	1-25/32	AN392-57	MS20392-1C57	1.03
3/16	7/32	AN393-7	MS20392-2C7	0.47
3/16	9/32	AN393-9	MS20392-2C9	0.46

DIA	LENGTH	OLD AN	MS PART NO.	PRICE EA.
3/16	11/32	AN393-11	MS20392-2C11	0.42
3/16	13/32	AN393-13	MS20392-2C13	0.66
3/16	15/32	AN393-15	MS20392-2C15	0.49
3/16	17/32	AN393-17	MS20392-2C17	0.60
3/16	19/32	AN393-19	MS20392-2C19	0.65
3/16	21/32	AN393-21	MS20392-2C21	0.50
3/16	23/32	AN393-23	MS20392-2C23	0.55
3/16	25/32	AN393-25	MS20392-2C25	0.64
3/16	27/32	AN393-27	MS20392-2C27	0.72
3/16	29/32	AN393-29	MS20392-2C29	0.52
3/16	31/32	AN393-31	MS20392-2C31	0.58
3/16	1-1/32	AN393-33	MS20392-2C33	0.59
3/16	1-3/32	AN393-35	MS20392-2C35	0.62
3/16	1-5/32	AN393-37	MS20392-2C37	0.77
3/16	1-7/32	AN393-39	MS20392-2C39	0.65
3/16	1-9/32	AN393-41	MS20392-2C41	0.65
3/16	1-11/32	AN393-43	MS20392-2C43	0.65
3/16	1-17/32	AN393-49	MS20392-2C49	0.75
3/16	1-19/32	AN393-51	MS20392-2C51	0.79
3/16	1-29/32	AN393-61	MS20392-2C61	1.12
3/16	2-1/32	AN393-65	MS20392-2C65	1.72
3/16	2-3/32	AN393-67	MS20392-2C67	1.03
3/16	2-5/32	AN393-69	MS20392-2C69	1.54
3/16	2-7/32	AN393-71	MS20392-2C71	1.25
3/16	2-9/32	AN393-73	MS20392-2C73	2.99
3/16	2-13/32	AN393-77	MS20392-2C77	1.75
1/4	11/32	AN394-11	MS20392-3C11	0.63
1/4	13/32	AN394-13	MS20392-3C13	0.61
1/4	15/32	AN394-15	MS20392-3C15	0.55
1/4	17/32	AN394-17	MS20392-3C17	0.60
1/4	19/32	AN394-19	MS20392-3C19	0.56
1/4	21/32	AN394-21	MS20392-3C21	0.53
1/4	23/32	AN394-23	MS20392-3C23	0.73
1/4	25/32	AN394-25	MS20392-3C25	0.60
1/4	27/32	AN394-27	MS20392-3C27	0.68
1/4	29/32	AN394-29	MS20392-3C29	0.69
1/4	31/32	AN394-31	MS20392-3C31	0.48
1/4	1-1/32	AN394-33	MS20392-3C33	0.64
1/4	1-3/32	AN394-35	MS20392-3C35	0.77
1/4	1-5/32	AN394-37	MS20392-3C37	0.80
1/4	1-7/32	AN394-39	MS20392-3C39	0.57
1/4	1-9/32	AN394-41	MS20392-3C41	0.80
1/4	1-11/32	AN394-43	MS20392-3C43	0.96
1/4	1-13/32	AN394-45	MS20392-3C45	0.81
1/4	1-15/32	AN394-47	MS20392-3C47	0.81
1/4	1-17/32	AN394-49	MS20392-3C49	0.81
1/4	1-19/32	AN394-51	MS20392-3C51	2.55
1/4	1-21/32	AN394-53	MS20392-3C53	1.25
1/4	1-23/32	AN394-55	MS20392-3C55	0.96
1/4	1-25/32	AN394-57	MS20392-3C57	0.81
1/4	1-29/32	AN394-61	MS20392-3C61	1.06
1/4	1-31/32	AN394-63	MS20392-3C63	0.85
1/4	2-1/32	AN394-65	MS20392-3C65	1.25
1/4	2-3/32	AN394-67	MS20392-3C67	1.28
1/4	2-13/32	AN394-77	MS20392-3C77	1.44
3/8	17/32	AN396-17	MS20392-5C17	1.18
3/8	19/32	AN396-19	MS20392-5C19	1.25
3/8	23/32	AN396-23	MS20392-5C23	1.44
3/8	25/32	AN396-25	MS20392-5C25	1.75
3/8	27/32	AN396-27	MS20392-5C27	1.51
3/8	31/32	AN396-31	MS20392-5C31	1.35
3/8	1-17/32	AN396-49	MS20392-5C49	3.75
3/8	1-21/32	AN396-53	MS20392-5C53	0.85
3/8	1-23/32	AN396-55	MS20392-5C55	0.85

HARDWARE

BLIND RIVETS

3/8 head x 1/8 dia. 100 ea. for use on 1967 and later Champion/Bellanca aircraft 156# shear, 235# tensile. Grip range .063-.125. Used in finishing applications.



AVEX RIVETS

These rivets are available in dome head 1601 (1693) or countersunk head 1604 (1682), with steel stem and aluminum body. 1601 Series dome head aluminum rivet with zinc coated steel mandrel. 1604 series 120° countersunk aluminum rivet with zinc coated steel mandrel. 1/8" diameter has 165 lb shear, 230# tensile. 5/32" diameter has 255# shear, 375# tensile. 1601 and 1604 series stocked when 1693 and 1682 stock depleted.



DESCRIPTION	PART NUMBER	PRICE EACH
Box of 100	11-57	3.50/box

ALUMINUM DOME HEAD RIVET

Large .615 diameter dome head.



DIA	LENGTH	PART NO.	PRICE EA	PRICE P/100
.3/16	.542	ABA-66L	0.17	

CLOSED END BLIND RIVETS

1/8 " pop rivet AD-41H. Used to seal tubing vent holes used in conjunction with the Tube seal corrosion inhibitor. Rivet is 5056 aluminum with carbon steel mandrel. Sold box of 100 only.



GRIP	LENGTH	PART NO.	PRICE
.032-.062	.237	AD41H	7.25
.063-.125	.301	AD42H	0.18

OPEN END POP BRAND RIVETS

5052 aluminum rivet, dome head with aluminum mandrel - open end. AD42,43 has shear strength - 155, tensile - 235, AD52,53 has shear strength 225, tensile - 350.



DIA	LENGTH	GRIP RANGE	PART NUMBER	PRICE EA	PRICE P/100
3/32	.225	.031-.125	AD32ABS	0.19	
1/8	.250	.063-.125	AD42ABS	0.14	
1/8	.313	.126-.187	AD43ABS	0.14	
5/32	.275	.063-.125	AD52ABS	0.15	
5/32	.338	.126-.187	AD53ABS	0.16	

USM RIVET

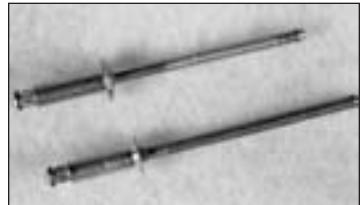
Closed end pop rivet, dome head with solid core. Requires secondary grinding operation. Rivet is 5056 aluminum with carbon steel mandrel, shear strength is 480#. Tensile strength 280#.



DIA	LENGTH	GRIP	PART NO.	PRICE EA	P/100
1/8	.301	.063-.125	AD42S	0.16	
1/8	.362	.126-.187	AD43S	0.16	

CHERRY "Q" RIVETS BS SERIES

Structural, self plugging aluminum rivet with steel mandrel protruding head.



DIA	GRIP RANGE	PART NUMBER	PRICE EACH	200 EACH	500 EACH
1/8	.031-.187	AVEX1601-0410	0.10		
1/8	.125-.312	AVEX1601-0414	0.15		
5/32	.046-.250	AVEX1601-0512	0.15		
Countersunk					
1/8	.093-.250	AVEX1604-0412	0.11		
5/32	.109-.312	AVEX1604-0514	0.17		

CHERRY N COMMERCIAL RIVET

Stainless rivet and mandrel with protruding or countersunk head. Shear strength 230 psi, tensile 320 psi. 120° countersunk. CCP rivets manufactured by Cherry or Merson.

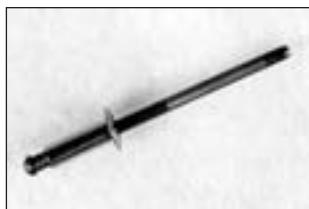


RIVET LENGTH	GRIP RANGE	PART NUMBER	PRICE EA	PROTRUDING PART NUMBER	120° COUNTERSUNK PART NUMBER	PRICE EA
3/32	.250	.020-.125	CCP-32	0.38	CCC-32	0.49
3/32	.375	.126-.250	CCP-34	0.43		
1/8	.225	.125-.187	CCP-42	0.22	CCC-42	0.29
1/8	.400	.188-.250	CCP-44	0.16	CCC-44	0.39
1/8	.470	.375	CCP-46	0.25		
5/32	.425	.126-.250	CCP-54	0.32		

HARDWARE

CHERRY Q RIVETS

Structural, self-plugging rivets. Cherry Q rivet mandrel plugs the entire length of the rivet sleeve, providing full shear strength values for structural or load-bearing applications. The specially designed mandrel of the Q rivet is engineered to effect a seal, upon installation which offers resistance to leakage. The rivet sleeve curls over end of mandrel to insure its positive retention of vibration resistance. The CCPQ series stainless rivets have stainless mandrel with a minimum shear strength of 700 lbs and tensile strength of 600 lbs.



DIA	LENGTH	GRIP RANGE	PART NO.	PRICE EA	PRICE P/100
1/8	.212	up to .062	CCPQ-41	0.77	
1/8	.275	.063-.125	CCPQ-42	0.48	
1/8	.337	.094-.187	CCPQ-43	0.40	
1/8	.400	.063-.250	CCPQ-44	0.45	
1/8	.535	.251-.375	CCPQ-46	0.69	
5/32	.425	.126-.250	CCPQ-54	0.67	
3/16	.450	.126-.250	CCPQ-64	0.63	

CHERRY MAX RIVET

100° Flush or universal head 5056 aluminum alloy sleeve, 8740 alloy steel stem, maximum temperature 250°

Rivet		Hole Size	
Dia	Size	Min	Max
-4 (1/8)	#30	.129	.132
-5 (5/32)	#20	.160	.164



RIVET	LENGTH	100° FLUSH		UNIVERSAL	
		DIA.	GRIP	PART NUMBER	PRICE EA
1/8 .025-.062.161	-	-	-	-CR3213-4-1	0.59
1/8 .063-.125.224	CR3212-4-2	0.65		CR3213-4-2	0.65
1/8 .126-.187.287	CR3212-4-3	0.56		CR3213-4-3	0.75
1/8 .188-.250.349	CR3212-4-4	1.05		CR3213-4-4	0.76
1/8 .251-.312.412	CR3212-4-5	0.44		CR3213-4-5	0.86
1/8 .313-.375.474	CR3212-4-6	1.45		CR3213-4-6	0.83
1/8 .376-.437.537	CR3212-4-7	1.09		CR3213-4-7	1.14
1/8 .438-.500.499	CR3212-4-8	1.23		CR3213-4-8	1.67
5/32				CR3213-5-1	0.97
5/32.063-.125.230	CR3212-5-2	0.56		CR3213-5-2	0.75
5/32.126-.187.293	CR3212-5-3	0.00		CR3213-5-3	0.75
5/32.188-.250.355	CR3212-5-4	0.80		CR3213-5-4	0.76
5/32.251-.312.418	CR3212-5-5	1.41		CR3213-5-5	0.77
5/32.313-.375.480	CR3212-5-6	0.98		CR3213-5-6	0.84
5/32.376-.437.543	CR3212-5-7	1.40		CR3213-5-7	1.06
5/32.438-.500.605	CR3212-5-8	1.22		CR3213-5-8	1.15
3/16.251-.312	CR3213-6-5	0.95			

CHERRY MAX RIVETS

Oversize flush or universal head, steel 8740 mandrel with aluminum rivet. Structural - per Cherry.

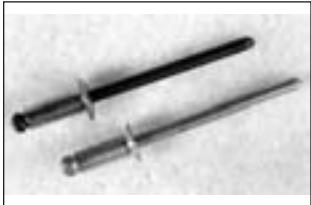


Rivet Dia Drill Size
-4 (1/8) #27
Hole size minimum .143
Hole size maximum .146

DIA LENGTH	GRIP RANGE	100° COUNTERSUNK		UNIVERSAL	
		PART NO.	PRICE EA.	PART NO.	PRICE EA.
1/8 .062	.032-.062	CR3242-4-1	0.85	CR3243-4-1	0.75
1/8 .125	.062-.125	CR3242-4-2	0.57	CR3243-4-2	0.72
1/8 .187	.125-.187	CR3242-4-3	1.16	CR3243-4-3	0.72
1/8 .250	.187-.250	CR3242-4-4	1.16	CR3243-4-4	0.68
1/8 .312	.250-.312	CR3242-4-5	1.16	CR3243-4-5	0.81

CHERRY "N" RIVETS

Monel steel, either protruding or flush.
Iron w/nickel and copper. 120°



DIA LENGTH	GRIP RANGE	PROTRUDING		FLUSH	
		PART NO.	PRICE EA.	PART NO.	PRICE EA.
3/32 .063-.125	.250	MSP-32	0.39	MSC-32	0.35
3/32 .126-.250	.375	MSP-34	0.30	MSC-34	0.63
1/8 .063-.125	.275	MSP-42	0.30	MSC-42	0.42
1/8 .125-.187	.337	MSP-43	0.25		
1/8 .188-.250	.400	MSP-44	0.55		
1/8 .251-.312	.462	MSP-45	0.35	MSC-45	0.70
5/32 .126-.250	.425	MSP-54	0.31		
3/16 .020-.125	.325	MSP-62	0.66		
3/32 .126-.250	.375	BSC-34	0.15		
1/8 .188-.250	.400	CSC-44	0.25		

USM RIVET

Dome head plated carbon steel body with coated carbon steel mandrel.
295# shear, 425# tensile



DIA	LENGTH	GRIP	PART NUMBER	PRICE EA.	PRICE P/100
1/8	.250	.063-.125	SD42-BS	0.12	
1/8	.375	.188-.250	SD44-BS	0.14	
1/8	.500	.313-.375	SD46-BS	0.14	
1/8	.625	.376-.500	SD48-BS	0.17	

HARDWARE

MS20426 COUNTERSUNK 100° SOLID RIVET

Rivet kits available on following pages

Available in either hard (AD) 2117 aluminum alloy or soft (A)1100 pure aluminum. Manufactured to MIL-R-5674. Sold by 1/8 lb only. Order 8 - 1/8 to make 1 lb. Not sold individually.



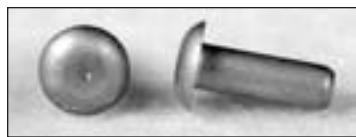
DIA INCHES	LENGTH INCHES	APX QTY 1/8 LB	2117 HARD			1100 SOFT		
			PART NO	PRICE 1/8 LB	PRICE P/LB (8)	PART NO	PRICE 1/8 LB	PRICE P/LB (8)
1/16	3/8	1041	MS20426AD2-6	7.99		MS20426A2-6	7.22	
3/32	1/8	800	MS20426AD3-2	7.85		MS20426A3-2	5.18	
3/32	3/16	750	MS20426AD3-3	5.30		MS20426A3-3	4.25	
3/32	7/32	631	MS20426AD3-3.5	3.99				
3/32	1/4	512	MS20426AD3-4	5.50		MS20426A3-4	4.73	
3/32	9/32	474	MS20426AD3-4.5	3.95				
3/32	5/16	434	MS20426AD3-5	4.85		MS20426A3-5	3.98	
3/32	11/32	406	MS20426AD3-5.5	3.25				
3/32	3/8	377	MS20426AD3-6	3.90		MS20426A3-6	3.44	
3/32	7/16	333	MS20426AD3-7	4.25		MS20426A3-7	3.30	
3/32	1/2	270	MS20426AD3-8	2.85		MS20426A3-8	3.74	
3/32	9/16	295	MS20426AD3-9	2.75				
3/32	5/8	227	MS20426AD3-10	2.99		MS20426A3-10	4.11	
3/32	3/4	225	MS20426AD3-12	3.80		MS20426A3-12	2.99	
3/32	1	177	MS20426AD3-16	3.17				
1/8	3/16	351	MS20426AD4-3	3.50		MS20426A4-3	3.38	
1/8	1/4	288	MS20426AD4-4	2.99		MS20426A4-4	2.89	
1/8	5/16	246	MS20426AD4-5	3.25		MS20426A4-5	3.17	
1/8	3/8	212	MS20426AD4-6	2.50		MS20426A4-6	2.99	
1/8	7/16	200	MS20426AD4-7	2.50		MS20426A4-7	2.99	
1/8	1/2	168	MS20426AD4-8	2.25		MS20426A4-8	2.89	
1/8	9/16	152	MS20426AD4-9	2.66		-		
1/8	5/8	128	MS20426AD4-10	2.45		MS20426A4-10	2.54	
1/8	11/16	131	MS20426AD4-11	3.95				
1/8	3/4	110	MS20426AD4-12	3.35		MS20426A4-12	2.54	
1/8	7/8	95	MS20426AD4-14	2.85				
1/8	1	216	MS20426AD4-16	3.69		MS20426A4-16	2.99	
1/8	1-1/4	78	MS20426AD4-20	3.76				
1/8	1-3/8	72	MS20426AD4-22	3.99				
5/32	1/8	267	MS20426AD5-2	4.50				
5/32	3/16	245	MS20426AD5-3	2.66				
5/32	1/4	180	MS20426AD5-4	2.94		MS20426A5-4	2.40	
5/32	5/16	153	MS20426AD5-5	2.45				
5/32	3/8	134	MS20426AD5-6	2.25		MS20426A5-6	2.25	
5/32	7/16	118	MS20426AD5-7	2.05		MS20426A5-7	2.39	
5/32	1/2	106	MS20426AD5-8	2.80				
5/32	9/16	96	MS20426AD5-9	2.78		MS20426A5-9	2.50	
5/32	5/8	95	MS20426AD5-10	2.65				
5/32	11/16	86	MS20426AD5-11	2.50				
5/32	3/4	61	MS20426AD5-12	2.25		MS20426A5-12	2.45	
5/32	7/8	69	MS20426AD5-14	2.50				
5/32	1	61	MS20426AD5-16	2.40		MS20426A5-16	2.69	
5/32	1-1/8	54	MS20426AD5-18	2.75				
5/32	1-1/2	41	MS20426AD5-24	2.75				
5/32	2	31	MS20426AD5-32	4.75				
3/16	1/4	136	MS20426AD6-4	2.66				
3/16	5/16	106	MS20426AD6-5	2.50				
3/16	3/8	92	MS20426AD6-6	2.25		MS20426A6-6	2.55	
3/16	7/16	108	MS20426AD6-7	1.89				
3/16	1/2	71	MS20426AD6-8	1.89		MS20426A6-8	2.29	
3/16	9/16	66	MS20426AD6-9	1.99				
3/16	5/8	57	MS20426AD6-10	1.61				
3/16	3/4	42	MS20426AD6-12	2.30		MS20426A6-12	3.75	
3/16	7/8	47	MS20426AD6-14	1.99				
3/16	1	42	MS20426AD6-16	1.75		MS20426A6-16	2.25	
3/16	1-1/4	33	MS20426AD6-20	3.40				
3/16	1-3/8	30	MS20426AD6-22	3.30				
3/16	1-1/2	28	MS20426AD6-24	2.70				
1/4	5/8	34	MS20426AD8-10	2.05				
1/4	13/16	27	MS20426AD8-13	2.94				
1/4	1	22	MS20426AD8-16	2.39				
1/4	1-1/4	18	MS20426AD8-20	2.55				
1/4	2	11	MS20426AD8-32	3.95				

HARDWARE

MS20470 UNIVERSAL HEAD SOLD RIVET

Rivet kits available on following pages

Available in either hard (AD) 2117 aluminum alloy or soft (A)1100 pure aluminum. Manufactured to MIL-R-5674. Sold by 1/8 lb only. Order 8 - 1/8 to make 1 lb. Not sold individually.

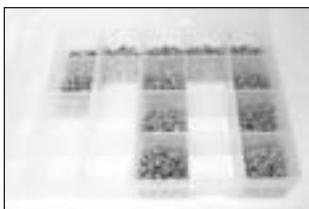


DIA INCHES	LENGTH INCHES	APX QTY 1/8 LB	2117 HARD			1100 SOFT		
			PART NO	PRICE 1/8 LB	PRICE P/LB (8)	PART NO	PRICE 1/8 LB	PRICE P/LB (8)
1/16	3/16	1582	MS20470AD2-3	8.95				
1/16	5/8	589	MS20470AD2-10					
3/32	1/8	513	MS20470AD3-2	6.95				
3/32	3/16	435	MS20470AD3-3	4.39		MS20470A3-3	3.45	
3/32	7/32	407	MS20470AD3-3.5	4.50				
3/32	1/4	378	MS20470AD3-4	3.50		MS20470A3-4	3.65	
3/32	5/16	359	MS20470AD3-5	4.25		MS20470A3-5	3.89	
3/32	3/8	299	MS20470AD3-6	3.50		MS20470A3-6	3.75	
3/32	7/16	271	MS20470AD3-7	3.85		MS20470A3-7	3.50	
3/32	1/2	228	MS20470AD3-8	3.75		MS20470A3-8	2.94	
3/32	9/16	268	MS20470AD3-9	3.25				
3/32	5/8	209	MS20470AD3-10	3.25		MS20470A3-10	4.25	
3/32	3/4	250	MS20470AD3-12	2.95		MS20470A3-12	3.69	
3/32	7/8	183	MS20470AD3-14	2.99				
3/32	1	162	MS20470AD3-16	3.09				
1/8	3/16	216	MS20470AD4-3	3.35		MS20470A4-3	2.73	
1/8	1/4	191	MS20470AD4-4	2.99		MS20470A4-4	2.95	
1/8	5/16	173	MS20470AD4-5	2.75		MS20470A4-5	3.50	
1/8	3/8	154	MS20470AD4-6	3.30		MS20470A4-6	2.75	
1/8	7/16	141	MS20470AD4-7	3.25		MS20470A4-7	2.50	
1/8	1/2	129	MS20470AD4-8	2.50		MS20470A4-8	3.14	
1/8	9/16	120	MS20470AD4-9	2.30		MS20470A4-9	2.44	
1/8	5/8	104	MS20470AD4-10	2.85		MS20470A4-10	2.75	
1/8	11/16	121	MS20470AD4-11	2.99				
1/8	3/4	113	MS20470AD4-12	2.25		MS20470A4-12	2.26	
1/8	13/16	106	MS20470AD4-13	2.95				
1/8	7/8	99	MS20470AD4-14	2.84		MS20470A4-14	4.14	
1/8	15/16	94	MS20470AD4-15	2.79				
1/8	1	88	MS20470AD4-16	2.55		MS20470A4-16	3.05	
1/8	1-1/8	79	MS20470AD4-18	3.99				
1/8	1-3/8	66	MS20470AD4-22	3.99				
5/32	1/8	214	MS20470AD5-2	2.96				
5/32	3/16	177	MS20470AD5-3	2.25				
5/32	1/4	111	MS20470AD5-4	2.75		MS20470A5-4	2.60	
5/32	5/16	100	MS20470AD5-5	2.75		MS20470A5-5	2.11	
5/32	3/8	100	MS20470AD5-6	2.55		MS20470A5-6	2.50	
5/32	7/16	84	MS20470AD5-7	2.99		MS20470A5-7	2.15	
5/32	1/2	102	MS20470AD5-8	2.55		MS20470A5-8	1.94	
5/32	9/16	72	MS20470AD5-9	2.85				
5/32	5/8	63	MS20470AD5-10	2.50				
5/32	3/4	50	MS20470AD5-12	2.30				
5/32	7/8	61	MS20470AD5-14	2.25		MS20470A5-15	3.52	
5/32	1	70	MS20470AD5-16	2.40		MS20470A5-16	2.50	
5/32	1-1/8	49	MS20470AD5-18	2.98				
5/32	1-1/2	38	MS20470AD5-24	2.79				
5/32	1-3/4	36	MS20470AD5-28	3.29				
5/32	2	29	MS20470AD5-32	5.47				
3/16	5/16	77	MS20470AD6-5	2.99		MS20470A6-5	2.50	
3/16	3/8	59	MS20470AD6-6	1.99		MS20470A6-6	2.76	
3/16	7/16	54	MS20470AD6-7	2.49		MS20470A6-7	2.25	
3/16	1/2	50	MS20470AD6-8	2.50		MS20470A6-8	2.35	
3/16	9/16	47	MS20470AD6-9	2.50		MS20470A6-9	2.22	
3/16	5/8	41	MS20470AD6-10	1.85		MS20470A6-10	2.25	
3/16	11/16	51	MS20470AD6-11	2.99				
3/16	3/4	47	MS20470AD6-12	1.75				
3/16	7/8	42	MS20470AD6-14	2.59				
3/16	1	33	MS20470AD6-16	2.25		MS20470A6-16	2.65	
3/16	1-1/8	34	MS20470AD6-18	2.79				
3/16	1-1/4	31	MS20470AD6-20	2.85				
3/16	1-5/8	24	MS20470AD6-26	6.75				
3/16	2	16	MS20470AD6-32	3.98				
1/4	5/8	27	MS20470AD8-10	1.80				
1/4	3/4	24	MS20470AD8-12	2.85				
1/4	7/8	21	MS20470AD8-14	2.88				

HARDWARE

SOLID RIVET KITS

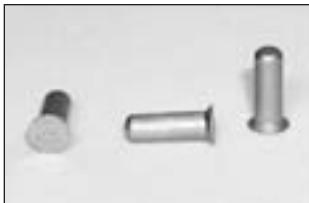
Kits are available for universal head (MS20470) or 100 degree countersunk (MS20426) solid rivets in either hard (AD) or soft (A) aluminum. Each kit contains 1/8 lb each of the following sizes: 3/32" - 3-3, 3-4, 3-5, 3-6, 3-8; 1/8" 4-3, 4-4, 4-5, 4-6, 4-8, and 5/32" 5-4, 5-6. All kits include a large plastic box with room for extra sizes.



DESCRIPTION	PART NUMBER	PRICE EA
Soft countersunk rivet kit	R26A-SOFT	46.77
Hard countersunk rivet kit	R26AD-HARD	49.20
Soft universal head rivet kit	R70A-SOFT	43.80
Hard universal head rivet kit	R70AD-HARD	45.58

NAS1097 100° SOLID RIVETS

100° solid rivet, flush shear head made of 2117-T4 aluminum alloy. Anodized per MIL-A-8625, Type II, Class 1, yellow in color. 1/8" diameter rivet body has a head diameter size approximate to a 3/32 rivet. (.192+-0.004). 3/32" diameter have a head diameter of a 1/16" rivet. Sold in 1/8 lbs order 8 for 1 lb.



DIA	LENGTH	QTY PER 1/8 LB	PART NUMBER	PRICE 1/8 LB	PRICE 1-LB (8)
3/32	.125	558	NAS1097AD3-2	7.00	
3/32	.188		NAS1097AD3-3	6.25	
3/32	.250		NAS1097AD3-4	4.25	
3/32	.312	268	NAS1097AD3-5	4.00	
3/32	.500	304	NAS1097AD3-8	4.25	
1/8	.188	680	NAS1097AD4-3	3.85	
1/8	.250	377	NAS1097AD4-4	3.85	
1/8	.312	236	NAS1097AD4-5	2.95	
1/8	.375	159	NAS1097AD4-6	2.50	

GROMMET SETTING TOOLS

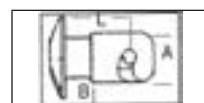
"GA" AND "GF" FULL GROMMETS
WHEN STOCK DEPLETED SPECIAL ORDER ONLY



SET OF TOOLS TO USE	TOOL CAPACITY MAX. MAT. THICK.	PART NUMBER	PRICE EACH
Type A3	.040	A3	64.28
Type A4	.050	A4	65.00
Type A5	.062	A5	68.97
Type F4	.040	F4	49.99
Type F5	.050	F5	49.99

STAINLESS DZUS FASTENERS

Fastener studs are made of stainless steel. Springs and rings are made of stainless steel, 300 series., spring temper. Grommets are made of aluminum or steel, cadmium plated - stainless not available. No special tools needed to operate the fasteners. When selecting length of fastener add N + P + Q + H - subtract spring deflection. For installation without grommet omit N .

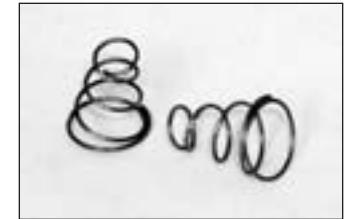


DIMENSIONS IN INCHES	USES		USES	SPRING	PART	PRICE
A	B	L	GROMMET	SPRING	NO.	EA
.250	.100	.300	GA4-250	4	AJ4-30SS	2.85
.3125	.125	.400	GA5-312, GA5-375	5	AJ5-40SS	4.26

*Stainless grommets not available.

STAINLESS RETAINING SPRINGS

When there is a gap between the top and bottom panel, a retaining spring is used to hold the stud in locking position for alignment with receptacle.



STUD SIZE	PART NO.	PRICE EA.
3	SX-520SS	0.75
4	SX-523SS	0.75
5	SX-510SS	0.75

STAINLESS SNAP RINGS

Used when there is not a lot of pullout load. This ring is expandable and easily installed with pliers or screwdriver. It takes little space.



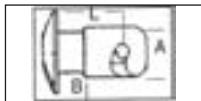
STUD SIZE	PART NO.	PRICE EA.
3	SR3SS	0.65
4	SR4SS	0.42

Stainless grommets not available - must use aluminum

HARDWARE

DZUS FASTENERS

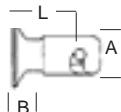
Fastener studs are made of steel, heat treated and cadmium plated. Springs are made of music wire, cadmium plated. Grommets are made of aluminum or steel, cadmium plated. No special tools needed to operate the fasteners. When selecting length of fastener add N + P + Q + H - subtract spring deflection. For installation without grommet omit N.



DIMENSIONS IN INCHES			USES	USES	PART	PRICE
A	B	L	GROMMET	SPRING	NUMBER	EACH
.1875	.050	.300	GA3-175, GA3-200S3-150, S3-175	A3-30	2.23	
.1875	.050	.350	GA3-175, GA3-200S3-150, S3-175	A3-35	4.50	
.1875	.075	.250	GA3-175, GA3-200S3-150, S3-175	AJ3-25	2.65	
.1875	.100	.300	GA3-175, GA3-200S3-150, S3-175	AJ3-30	1.90	
.1875	.150	.350	GA3-175, GA3-200S3-150, S3-175	AJ3-35	1.81	
.1875	.200	.400	GA3-175, GA3-200S3-150, S3-175	AJ3-40	1.75	
.250	.100	.250	GA4-250	S4-200, S4-225	AJ4-25	1.99
.250	.100	.300	GA4-250	S4-200, S4-225	AJ4-30	1.99
.250	.150	.350	GA4-250	S4-200, S4-225	AJ4-35	1.80
.250	.200	.400	GA4-250	S4-200, S4-225	AJ4-40	2.25
.3125	.125	.300	GA5-312 GA5-375	S5A-200 250 & 275	AJ5-30	3.59
.3125	.125	.350	GA5-312 GA5-375	SA5-200 250 & 275	AJ5-35	1.72
.3125	.125	.400	GA5-312 GA5-375	S5A-200 250 & 275	AJ5-40	3.71
.3125	.190	.450	GA5-312, GA5-375	S5A-200 250 & 275	AJ5-45	2.25
.3125	.250	.500	GA5-312, GA5-375	S5A-200	AJ5-50	1.69

"F" & "FJ" TYPE FASTENERS

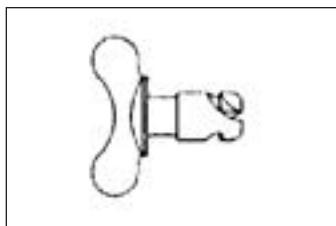
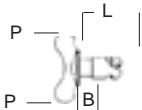
F has flush head, short undercut.
FJ has flush head, long undercut.
"F" type is no longer available when current supplies depleted.



DIMENSIONS IN INCHES			USES	USES	PART	PRICE
A	B	L	GROMMET	SPRING	NUMBER	EACH
.250	.200	.400	GF4-150, GF4-175S4-200, S4-225	FJ4-40	2.15	
.250	.175	.350	GF4-150, GF4-175S4-200, S4-225	FJ4-35	2.99	
.250	.200	.400	GF4-150, GF4-175S4-200, S4-225	FJ4-40	2.15	
.250	.225	.450	GF4-150, GF4-175S4-200, S4-225	FJ4-45	2.50	
.3125	.225	.400	GF5-150, GF5-175S5-200, S5-225	FJ5-40	1.99	

AJW & AW WING TYPE FASTENERS

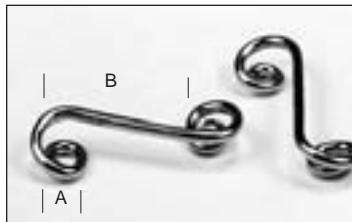
AW has wing head, short undercut.
AJW has wing head, long undercut.
"AW" type is no longer available when current supplies depleted. Diameters are the same as other fasteners.



DIMENSIONS IN INCHES			USES	PART	PRICE	
P	B	L	GROMMET	SPRING	NUMBER EACH	
.625	.050	.300	GA3-275, GA3-200S3-150, S3-175	AW3-30	2.07	
.625	.100	.300	GA3-275, GA3-200S3-150, S3-175	AJW3-30	2.86	
.875	.100	.250	GA4-250	SA4-200, S4-225	AJW4-25	9.53
.875	.150	.250	GA4-250	S4-200, S4-225	AJW4-25	9.53
.875	.100	.300	GA4-250	S4-200, S4-225	AJW4-30	2.59
.875	.150	.350	GA4-250	S4-200, S4-225	AJW4-35	3.02
.875	.200	.400	GA4-250	S4-200, S4-225	AJW4-40	3.49
.875	.250	.500	GA4-250	S4-200, S4-225	AJW4-50	1.91
1.125	.125	.300	GA5-312, GA5-375	S5A-200	AJW5-30	5.19
				250 & 275		
1.125	.250	5.00	GA5-312, GA5-375	S5A-200	AJW5-50	5.19
				250 & 275		

TYPE "S" SPRINGS

Music wire, bright zinc plate with yellow chromate dip per ASTM-B-633, Type 11, SC2.



DIMENSIONS IN INCHES		DEFLECTION	RIVET	PART	PRICE
A	B		HOLE SIZE	NO.	EA
.175	.625	.040	3/32	S3-175	1.50
.200	.750	.045	3/32	S4-200	1.50
.225	.750	.045	3/32	S4-225	0.55
.200	1.00	.047	1/8	S5A-200	0.85
.225	1.00	.047	1/8	S5A-225	2.85

GA & GF TYPE GROMMETS

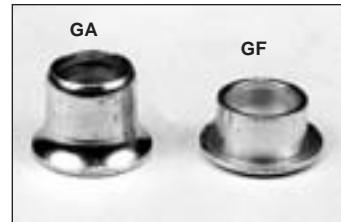
Made of aluminum for standard studs excepting flush heads. Type "GA" full grommet for use with "A", "AJ" studs.

Type "GF" grommet - for use with "F" and "FJ" studs.

N = wall thickness

M= inside diameter

N = height



DIMENSIONS IN INCHES			MAX DEPTH OF PANEL	PART NUMBER	PRICE EACH
O	M	N			
.175	.21875	.015	.025	GA3-175	0.81
.200	.21875	.015	.050	GA3-200	1.01
.250	.3125	.025	.050	GA4-250	1.02
.312	.371	.028	.062	GA5-312	2.12
.375	.375	.028	.125	GA5-375	1.02
.275	.3125	.025	.040	GF4-175	0.55

HARDWARE

GENERAL INFORMATION - CAMLOC FASTENERS

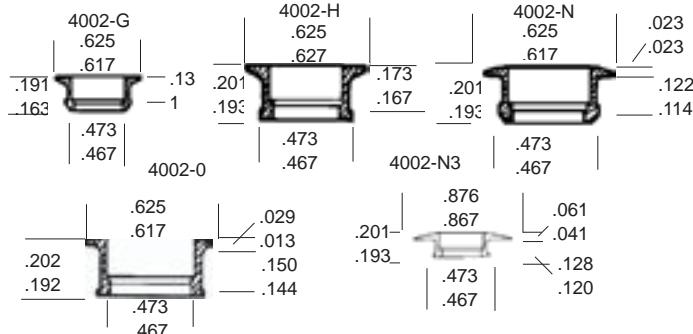
Total grip thickness is comprised of the thickness of ALL materials to be fastened. This must include the thickness of the material "P", to which the stud assembly is attached; the material "F", to which the receptacle is attached plus allowance for paint or other protective finishes. NOTE: If the grip thickness is near the top of the stud grip range, the next larger stud should be used. This will maintain the positive locking action of the fastener under vibration. To select the proper stud length, FIRST select the grommet, next select the receptacle. Once this is done, refer to the 4002 stud selection chart.

P (panel thickness) .062
 F (frame thickness) + .062
 GRIP (total thickness) = .124



4002 GROMMETS

Made of steel rated to 450° F. Choose grommet before selecting receptacle or stud.

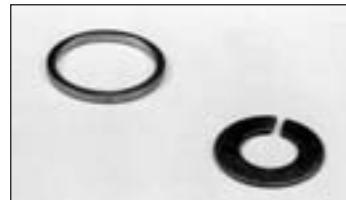


OUTER PANEL	MOUNT	PART NUMBER	PRICE EACH
.064 max	Flush	4002-G	0.76
.065 & greater	Flush	4002-H	1.65
.065 max	Plus flush	4002-N	0.97
.066 & greater	Plus flush	4002-O	0.89
.050 & greater	Plus flush	4002-N3	2.34

RETAINING RING

Steel snap ring fits all size grommets.
 Retaining ring fits studs.

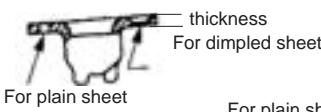
DESCRIPTION	PART NUMBER	PRICE EA
Snap ring	R4G	.17
Retaining ring	4002-SW	.45



RECEPTACLES

Floating or rigid, use 1/8" rivets to attach in either plain or dimpled (D) holes. Rigid are silicon bronze or stainless steel, Floating have a steel plate and retainer. For use with 2600, 2700, 4002 Series fasteners.

100°



DESCRIPTION	TYPE	THICKNESS	PART NUMBER	PRICE EACH
Dimpled	Rigid	.084-.096	214-16D	3.44
Narrow plain	Rigid	.084-.096	214-16N	3.75
Dimpled	Floating	.050-.090	244-16D	2.60
Plain	Floating	.050-.090	244-16	2.50

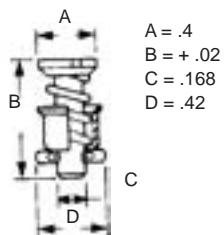
4002 STUD SELECTION CHART Using 214-16 Receptacle

TOTAL GRIP THICKNESS	4002-G	GROMMETS 4002-N,O	4002-N3
.021-.050	-	-1	-2
.051-.080	-	-2	-3
.081-.110	-2	-3	-4
.111-.140	-3	-4	-5
.141-.170	-4	-5	-6
.171-.200	-5	-6	-7
.201-.230	-6	-7	-8
.231-.260	-7	-8	-9
.261-.290	-8	-9	-10
.291-.320	-9	-10	-11
.321-.350	-10	-11	-12
.351-.380	-11	-12	-13
.381-.410	-12	-13	-14
.411-.440	-13	-14	-15
.441-.470	-14	-15	-16
.471-.500	-15	-16	-17
.501-.530	-16	-17	-
.531-.560	-17	-	-

Add one to each dash number if using 244-16 floating receptacle.

4002 SERIES CAMLOC STUDS

Slotted, Phillips or Wing type heads.
 Refer to chart before choosing.



Ultimate tensile strength - 1050 lbs
 Working strength - 900 lbs

SLOTTED NUMBER	PRICE EACH	PHILLIPS NUMBER	PRICE EACH	WING NUMBER	PRICE EACH
4002-1	2.39			4002-2W	3.16
4002-2	2.20			4002-3W	3.66
4002-3	1.65	40S5-3	4.20	4002-4W	3.36
4002-4	1.75	40S5-4	2.25	4002-5W	4.97
4002-5	2.85	40S5-5	3.25	4002-6W	6.41
4002-6	1.99	40S5-6	2.95	4002-7W	4.51
4002-7	1.99	40S5-7	3.18	4002-8W	5.30
4002-8	1.69	40S5-8	2.95	4002-9W	4.24
4002-9	1.64	40S5-9	2.95	4002-10W	5.98
4002-10	1.99	40S5-10	4.13	4002-11	1.99
4002-11	1.99			4002-12	2.65
4002-12	2.65			4002-13	2.45
4002-13	2.45			4002-14	2.45
4002-14	2.45			4002-15	2.92
4002-15	2.92			4002-16	2.38
4002-16	2.38			4002-17	6.99

INSTALLATION PLIERS

Use to install series 2600, 2700, and 4002 fasteners. Just compress stud spring with pliers, insert stud into panel and release.



DESCRIPTION	PART NUMBER	PRICE EACH
Pliers	4P3	29.75

HARDWARE

STUD LENGTH SELECTION

Total material thickness "G" consists of the thickness of all materials to be fastened. This must include the thickness of the material "P" to which the stud assembly is attached, the material "F" to which the receptacle is attached (plus gasket if used) and allowance for paint or other protective finishes. If the total thickness is near the upper limit of the stud grip range, the next longer stud should be used. This will still maintain positive locking of the fastener under vibration.

STUD SELECTION TABLE Using 212-12 Receptacle		
TOTAL GRIP THICKNESS	Use 2600	Use 2700
.020 - .059	2600-1	2700-1
.060 - .089	2600-2	2700-2
.090 - .119	2600-3	2700-3
.120 - .149	2600-4	2700-4
.150 - .179	2600-5	2700-5
.180 - .209	2600-6	2700-6
.210 - .239	2600-7	2700-7
.240 - .269	2600-8	2700-8
.270 - .299	2600-9	2700-9
.300 - .329	2600-10	2700-10
.330 - .359	2600-11	2700-11
.360 - .389	2600-12	2700-12
.390 - .419	2600-13	2700-13
.420 - .449	2600-14	2700-14

P (panel thickness)	.062
F (frame thickness)	+ .062
GRIP (total thickness)	= .124



STUD INSTALLATION

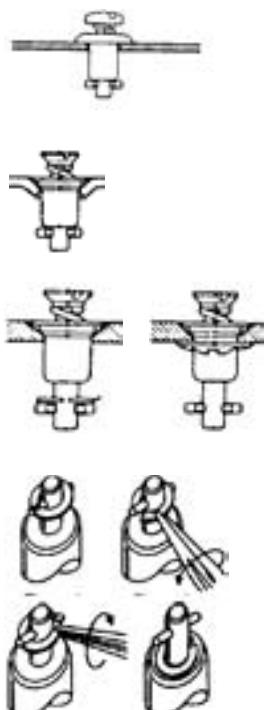
2600 Series

.125 maximum material thickness - install with 4P3 pliers. Stud is self-captivating from size 1 through 4 because the cross pin sets against the spring cup in the unlocked positions. Sizes 5 or longer, use a retaining ring.

2700 Series

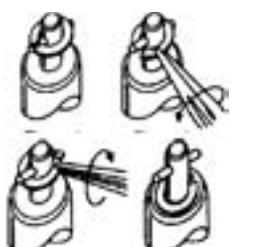
.072 maximum material thickness - Drill a #3 (.213 diameter hole). Dimple and ream to .257" dia if necessary. Install with 4P3 pliers.

.073 and greater material thickness - Drill a .257" diameter hole and countersink face of panel. For panels greater than .140 thickness, back counterbore .375 diameter to remaining thickness of .140. Install with 4P3 pliers and attach retaining ring.



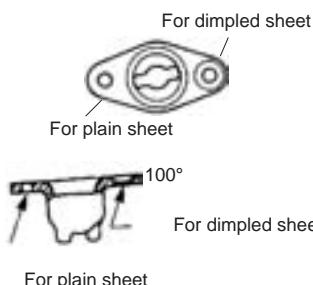
RETAINING RING INSTALLATION

To install, place retaining ring on stud with slot aligned over left side of cross pin. Snap retaining ring under cross pin using needle nose pliers, then rotate retaining ring 180° until ring is over right side of cross pin. To complete installation, snap retaining ring over the right side of cross pin.



RECEPTACLE INSTALLATION

Drill a .125 diameter (#30) pilot hole. Drill holes for 3/32 diameter rivets. Enlarge pilot hole to .500. Use soft aluminum rivets for installing aluminum alloy receptacles.



2600 & 2700 CAMLOC FASTENERS

Exceed requirement for MIL-F-5591, Style 3, Size 2. Shear and tensile strength rated 200 lbs. Studs are made of steel, except those noted as stainless.



"G" TOTAL THICKNESS	STEEL 2600 PART NO.	STEEL PRICE EACH	STAINLESS 2600 PART NO.	STAINLESS PRICE EACH	STEEL 2700 PART NO.	STEEL PRICE EACH
.030-.059	2600-1	1.59				
.060-.089	2600-2	1.59	2600-2S	3.00	2700-2	1.80
.090-.119	2600-3	1.45			2700-3	2.40
.120-.149	2600-4	2.11			2700-4	2.43
.150-.179	2600-5	2.75			2700-5	1.70
.180-.209	2600-6	1.50			2700-6	2.78
.210-.239	2600-7	1.80			2700-7	1.63
.240-.269	2600-8	1.99			2700-8	1.73
.270-.299	2600-9	2.25			2700-9	2.02
.300-.329	2600-10	1.65			2700-10	2.15
.330-.359	2600-11	1.85			2700-11	2.50
.360-.389	2600-12	2.35			2700-12	2.81
.390-.419	2600-13	2.50			2700-13	2.25
.420-.449	2600-14	2.75			2700-14	2.50
.540-.569	2600-18	3.00				

PHILLIPS HEAD:

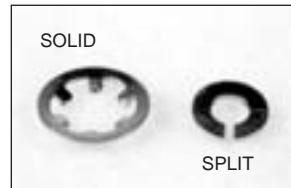
.180-.209	27S3-6	2.35
.210-.239	26S8-7	2.15
.240-2.69	27S3-8	2.92

WING HEAD:

.060-.089	2600-2W	2.50
.090-.119	2600-3W	3.38
.150-.209	2600-5W	3.75
.180-.209	2600-6W	2.99
.210-.239	2600-7W	4.50

RETAINING RINGS

Non snap-in studs only for series 2600 & 2700. Order separately. Retaining rings are required for stud length dash numbers "-5" and greater. Studs with smaller dash numbers are self-captivating and retaining rings are not used. Solid rings are used to hold stud assemblies stationary to top panel. Split ring allows stud assemblies move freely within the top panel. Steel, cadmium plated.



RING TYPE	PART NUMBER	PRICE EACH
Solid	2600-LW	0.35
Split	2600-SW2	0.35

RECEPTACLES

Standard mounting version, 450°F maximum temp. Silicon Bronze, cadmium plated. Attach with 3/32 rivets.



RIVET HOLES	THICKNESS	PART NUMBER	PRICE EACH
Plain	.064-.081	212-12N	2.65
Countersunk	.064-.081	212-12D	2.52
Stainless plain	.064-.081	212-12S	5.97

HARDWARE

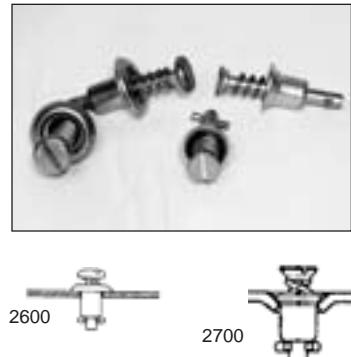
AIRLOC- STAINLESS

1126/1127 series is an equivalent to the camloc 2600 & 2700 series. Fasteners can also be interchangeable because they are virtually identical in fit form and function. Specific configurations meet and or exceed the specifications for size No. 2 in MIL-F5991C and are qualified to QPL-5591.
1142 series is equivalent to the 4002 series and meet or exceed the specifications for sizes 5 & 7 in MIL-F5991C and are qualified to QPL-5591.

2600 & 2700 AIRLOC STAINLESS

2600: Stainless slotted 1/4 turn fastener - plus flush. If total panel thickness is near top of range -next greater size is recommended.

2700: Stainless slotted 1/4 turn fastener -flush. The dash 5 and greater stud assembly requires retaining rings., dash 4 and smaller are self-retaining. Solid rings hold stud assembly stationary to top panel. Split rings allow stud assembly to move freely within the top panel. If total panel thickness is near top of range -next greater size is recommended.



TOT PANEL THICKNESS	PART NUMBER	PRICE EACH	PART NUMBER	PRICE EACH
.030 - .059	AL2600-1S	2.20	AL2700-1S	3.25
.060 - .089	AL2600-2S	2.45	AL2700-2S	3.99
.090 - .119	AL2600-3S	2.35	AL2700-3S	2.25
.120 - .149	AL2600-4S	4.80	AL2700-4S	1.99
.150 - .179	AL2600-5S	2.45	AL2700-5S	2.95
.180 - .209	AL2600-6S	2.45	AL2700-6S	2.79
.210 - .239	AL2600-7S	2.55	AL2700-7S	2.99
.240 - .269	AL2600-8S	2.15	AL2700-8S	3.25
.270 - .299	AL2600-9S	2.35	AL2700-9S	3.75
.300 - .329	AL2600-10S	3.30	AL2700-10S	2.45
.330 - .359	AL2600-11S	4.75	AL2700-11S	3.98
.360 - .389			AL2700-12S	3.98
.390 - .419			AL2700-13S	6.15
.420 - .449			AL2700-14S	8.99

4002 SERIES AIRLOC

Stainless steel 1/4 turn studs. If total panel thickness is near top of thickness, next dash number is recommended. This series utilizes grommets which must be installed into the top panel. Dash 15 and shorter are self-captivating. Dash 16 and longer require a split retaining ring. Panel thickness same for both phillips and slotted studs.



USING: AL244-16S & AL 4002-GS	USE STUD PART NUMBER	PRICE EACH	USE STUD PART NUMBER	PRICE EACH
.051 - .080	AL4002-2S	5.17	AL40S5-2S	3.25
.081 - .110	AL4002-3S	2.75	AL40S5-3S	3.99
.111 - .140	AL4002-4S	2.81	AL40S5-4S	3.50
.141 - .170	AL4002-5S	2.99	AL40S5-5S	3.89
.171 - .200	AL4002-6S	2.94	AL40S5-6S	2.97
.201 - .230	AL4002-7S	3.94	AL40S5-7S	3.03
.231 - .260	AL4002-8S	3.98	AL40S5-8S	2.97
.261 - .290	AL4002-9S	4.40	AL40S5-9S	3.03
.291 - .320	AL4002-10S	5.77	AL40S5-10S	4.75
.321 - .350	AL4002-11S	5.57		
.351 - .380	AL4002-12S	5.99		
.381 - .410	AL4002-13S	6.35		
.411 - .440	AL4002-14S	6.45		

ADD: 1 to each dash number to use grommets:
AL4002-HS , AL4002-NS, AL4002-OS

AIRLOC GROMMETS

Stainless steel



OUTER PANEL	MOUNT	PART NUMBER	PRICE EA
.064 max	flush	AL4002-GS	2.85
.065 plus	flush	AL4002-HS	2.85
.065 max	plus flush	AL4002-NS	2.35
.066 plus	plus flush	AL4002-OS	2.25

SNAP RING

All stainless snap ring used with grommets.

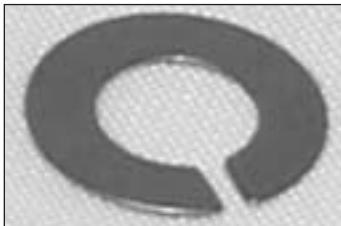
RINGS: All stainless - snap rings used with grommets, retaining rings used on studs.



DESCRIPTION	PART NUMBER	PRICE EA
Snap ring	AL40G26-1	1.05

RETAINING RING

RETAINING RING
All stainless retaining ring used on studs.



DESCRIPTION	PART NUMBER	PRICE EA
Retaining ring	AL4002-SWSS	0.49

RECEPTACLE

Stainless steel, plain floating use 1/8" rivets to attach.



DESCRIPTION	PART NUMBER	PRICE EA
Receptacle	AL244-16S	12.80

FASTENER WRENCH

Fits slot head 1/4 turn fasteners. Manufactured of stainless steel and has three different sized radii to match the slots in various 1/4 turn fasteners. Reduces the possibility of damaging fasteners and body panels. Has nonslip plastic grip handle.



DESCRIPTION	PART NUMBER	PRICE EACH
Fastener wrench	71600	7.97

HARDWARE

SOUTHCO FASTENERS

Commonly used on the Cessna 150 & 172. Stud lengths are stamped on the head. Fasteners are phillips recess. The third number group indicated stud length. Made from 1008 steel. Example 82-19-120-16

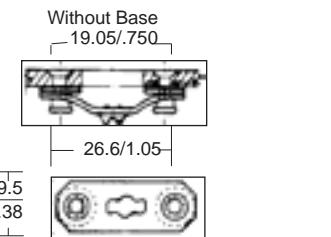
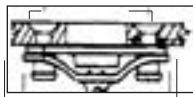


MATERIAL MIN	THICKNESS MAX	PART NUMBER	PRICE EACH
.090	.109	82-19-100-16	1.20
.110	.129	82-19-120-16	1.20
.130	.149	82-19-140-16	1.20
.150	.169	82-19-160-16	1.20
.170	.189	82-19-180-16	1.20
.190	.209	82-19-200-16	1.20

RECEPTACLES

Leaf spring type: available with or without base. When riveting, spring must float freely, attach countersink or dimple 3/32 rivet

With Base
19.05/.750



DESCRIPTION	PART NUMBER	PRICE EACH
Without base	82-35-295-15	0.73
With base	82-35-302-15	0.84

RUBBER VIBRATION MOUNT

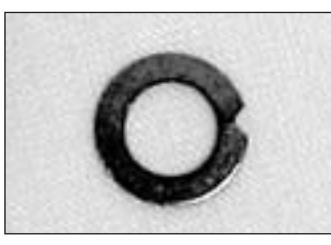
Used when isolation of vibration is needed between two pieces of material. Mounting hole diameter .098 inches, distance from center of hole to center of hole 1.218 inches.



DESCRIPTION	PART NUMBER	PRICE EA.
Rubber mount	82-35-306-10	6.73

RINGS - RETAINERS

Split ring type or push-on type. Split ring may be installed by hand or tool operation. Push-on type by tool installation. 302 stainless passivated.

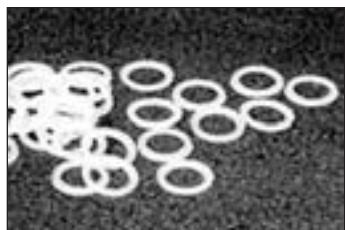


DESCRIPTION	PART NUMBER	PRICE EACH
Split type	82-32-101-20	0.28
Push-on	82-32-201-20	0.28

NYLON WASHER

Flat nylon wear washer, natural color.

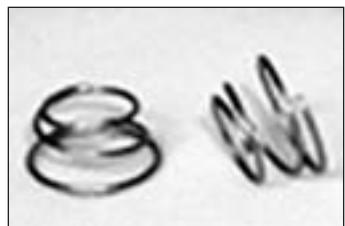
When using a wear washer, add .020 to the total material thickness.



OD.	ID.	THICKNESS	PART NUMBER	PRICE EA.
.34	.245	.020	82-46-103-39	0.23

EJECTOR SPRING

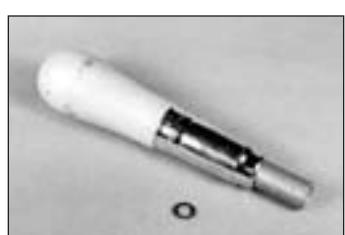
Ejector spring is made of 302 stainless steel, passivated. When using an ejector spring with a nylon washer, add .040 to total material thickness. Use 82-46-103-39 nylon washers



O.D.	I.D.	THICKNESS	PART NUMBER	PRICE EACH
.38	.22	.020	43-13-1-24	0.50

INSTALLATION TOOL

For installing the push on retaining rings only.



DESCRIPTION	PART NUMBER	PRICE EACH
Tool	82-0-22542-11	20.14

COWL MOUNTS

Quarter turn locking receptacle available in two types, FAA/PMA approved. Cessna 172 for # 2 lion stud, or Camloc stud assembly #2700-1.



DESCRIPTION	PART NUMBER	PRICE EA
Cessna 172 - #2 lion stud	J-7444-14	16.44
Camloc 2700-1 stud assembly	J-7444-24	19.69

MS27405 CLAMP LOOPS

Clamps as used on steel tubing fuselage assemblies. All sizes with single bolt lugs. (-7 also available as 2-lug) Uses AN3 series bolts. Made of unpassivated steel per QQ S 698 1015 T4. Supercedes AN741



ID	LUGS	AN 741	PART NUMBER	PRICE
.500"	1	-4	MS27405-4	2.95
.625"	1	-5	MS27405-5	1.95
.750"	1	-6	MS27405-6	2.95
.875"	1	-7	MS27405-7	2.95
1.00"	1	-8	MS27405-8	1.95
.875"	2	-T7	MS27405T7	3.99

HARDWARE

AN742D PLAIN CLAMPS

Aluminum alloy meets specification QQ-A-362, condition T. Heat treated to a minimum tensile strength of 50,000 p.s.i., in accordance with AN-QQ-H-186. Also available in steel.



CUSHION CLAMP - WEDGE FUEL RESISTANT - WDF

Loop-type, wedge cushioned, line support clamps, made of aluminum alloy. Meets Specification MIL-C-8603. DF in the part number designates fuel resistant. W in the part number designates it is cushion wedge type and will not pinch line. MS21919 clamp hole diameter is .199 to .209



TUBE O.D.	ALUMINUM PART NO.	PRICE EACH	CORROSION PART NO.	PRICE EACH
3/16"	AN742-D3	\$.62	do not stock	
1/4"	AN742-D4	\$.40	AN742-4C	\$.12
5/16"	AN742-D5	\$.45	do not stock	
3/8"	AN742-D6	\$.60	AN742-6C	\$.23
7/16"	do not stock		AN742-7C	\$.12
1/2"	AN742-D8	\$.80	do not stock	
5/8"	AN742-D10	\$.40	AN742-10C	\$.15
3/4"	AN742-D12	\$.60	do not stock	
1"	AN742-D16	\$.66	do not stock	

MS21919 CUSHION CLAMPS

Loop-type, cushioned, line support clamps, made of aluminum alloy. Meets Specification MIL-C-8603. MS21919 cushion is not fuel resistant, use part numbers with **DF** for fuels

F in the part number designates fuel resistant. **WDG** is cushion wedge type and will not pinch line.

MS21919 clamp hole diameter is .199 to .209



FOR USE W/TUBE	AN742 EQUIV.	CUSHION PART NO.	PRICE EACH	WEDGE PART NO.	PRICE EACH
1/8	D4C	MS21919-DG2	0.65	MS21919-WDG2	0.75
3/16	D5C	MS21919-DG3	0.60	MS21919-WDG3	0.65
1/4	D6C	MS21919-DG4	0.50	MS21919-WDG4	0.55
1/4 (fuel res.)	D6C			MS21919-WDF4	0.80
5/16	D7C	MS21919-DG5	0.75	MS21919-WDG5	0.65
3/8	D8C	MS21919-DG6	0.55	MS21919-WDG6	0.69
7/16	D9C	MS21919-DG7	0.65	MS21919-WDG7	0.55
1/2	D10C	MS21919-DG8	0.75	MS21919-WDG8	0.85
1/2 (fuel res.)	D10C			MS21919-WDF8	1.68
9/16	D11C	MS21919-DG9	0.69	MS21919-WDG9	0.89
5/8	D12C	MS21919-DG10	0.75	MS21919-WDG10	0.85
11/16	D13C	MS21919-DG11	0.75	MS21919-WDG11	1.00
3/4	D14C	MS21919-DG12	0.77	MS21919-WDG12	0.85
3/4 (fuel res.)	D14C			MS21919-WDF12	1.80
13/16	D15C	MS21919-DG13	0.89	MS21919-WDG13	0.99
7/8	D16C	MS21919-DG14	0.75	MS21919-WDG14	0.99
15/16	D17C	MS21919-DG15	0.99	MS21919-WDG15	0.99
1	D18C	MS21919-DG16	0.85	MS21919-WDG16	1.00
1-1/16	D19C	MS21919-DG17	1.80	MS21919-WDG17	1.25
1-1/8	D20C	MS21919-DG18	1.00	MS21919-WDG18	1.50
1-3/16	D21C	MS21919-DG19	1.59	MS21919-WDG19	1.25
1-1/4	D22C	MS21919-DG20	0.91	MS21919-WDG20	0.96
1-5/16	D23C	MS21919-DG21	2.50	MS21919-WDG21	1.65
1-3/8	D24C	MS21919-DG22	1.28	MS21919-WDG22	1.50
1-7/16	D25C	MS21919-DG23	2.12	MS21919-WDG23	1.36
1-1/2	D26C	MS21919-DG24	1.40	MS21919-WDG24	1.60
1-9/16	D27C	MS21919-DG25	2.55	MS21919-WDG25	1.44
1-5/8	D28C	MS21919-DG26	1.33	MS21919-WDG26	1.55
1-11/16	D29C	MS21919-DG27	2.50	MS21919-WDG27	1.83
1-3/4	D30C	MS21919-DG28	1.12	MS21919-WDG28	2.50
2"	DC34C	MS21919-DG32	1.75		

MS21919-WDG CLAMP KIT

Kit contains: 4 each of WDG2, WDG3, WDG4, WDG5, WDG6, WDG7, WDG8, WDG9, WDG10, WDG11, WDG12, WDG13, WDG14, WDG15, WDG16, WDG17, WDG18, and 1 LPB-1 (9 X 13 large plastic box). Loop-type, wedge cushioned, line support clamps, made of aluminum alloy. Meets Specification MIL-C-8603. W in the part number designates it is cushion wedge type and will not pinch line.



DESCRIPTION	PART NUMBER	PRICE
WEDGE CLAMP KIT	MS21919-KIT	68.19

SS CLAMPS

All stainless steel construction offers good corrosion resistance. For use on fuel, oil, air and coolant lines. 1/2" width.



DESCRIPTION	PART NUMBER	PRICE
1-1/16" - 2"	SWC24	1.25
1-13/16" - 2-3/4"	SWC36	1.45
7/32" X 5/8"	SWC4	1.50
2-3/4" - 3-3/4"	SWC52	1.77
5/16" - 7/8"	SWC6	0.95
11/16" - 1-1/2"	SWC16	1.50

STEPLESS EAR CLAMPS

For fittings used with 1/4" id to 1" id hose. Clamping range is from closed to open. Stepless ear clamps by Oetiker.

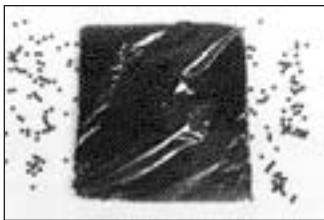


DESCRIPTION	PART NUMBER	PRICE
378-.445	113-505R	0.51
.425-.524	133-706R	0.46
.453-.551	140-706R	0.53
.571-.669	170-706R	0.75

HARDWARE

LEAD SHOT

7 oz. container of lead shot (as used in Dragonfly and Defiant) For counter balance of control surfaces.



DESCRIPTION	PART NUMBER	PRICE EACH
Lead shot	LS-7.5	1.49

SPRINGS

Different sizes as used in LongEze and Cozy kits. Spring 187 and Spring-250 are landing gear springs commonly used on the Citabria aircraft.



SIZE	PART NUMBER	PRICE EACH
.06 x .75 x 8-1/2"	C-133	4.96
.105 x 9/16 x 3-3/4	SPRING-1887	5.50
.187 x 3/4x3-1/2	SPRING-187	27.00
.32 x .437 x 3-3/4"	C-161	2.72
.35 x .06 x 1/2"	SPRING-5118	5.75
.35 x .06 x 10"	SPRING-5128	8.85
.35 x .05 x 30"	SPRING-5129	9.00
.375 x .06 x 12.5"	SPRING-5130	6.25
.875 x .120 x 4"	C-68	3.57
.250 X 1-3/4" x 12"	SPRING-MG	59.58

AN 900 COPPER CRUSH WASHER

Copper crush washers size -3 to -30. Order by part number. All sizes are 3/32 thick



GASKET ID	MS EQUIV O.D.	PART NUMBER	PRICE EACH
5/16"	9/16"	MS35769-5	AN900-5 0.75
3/8"	5/8"	MS35769-6	AN900-6 0.60
7/16"	11/16"	MS35769-8	AN900-7 0.69
1/2"	3/4"	MS35769-9	AN900-8 0.49
9/16"	13/16"	MS35769-10	AN900-9 0.60
5/8"	7/8"	MS35769-11	AN900-10 0.45
11/16"	15/16"	MS35769-13	AN900-11 0.70
3/4"	1"	MS35759-15	AN900-12 0.58
13/16"	1-1/16"	MS35759-17	AN900-13 0.59
7/8"	1-1/8"	MS35759-18	AN900-14 0.51
15/16"	1-3/16"	MS35769-20	AN900-15 0.85
1"	1-1/4"	MS35769-21	AN900-16 0.60
1-1/16"	1-5/16"	MS35769-24	AN900-17 0.92
1-1/8"	1-3/8"	MS35769-26	AN900-18 0.75
1-3/16"	1-7/16"	MS35769-29	AN900-19 1.13
1-1/4"	1-1/2"	MS35769-31	AN900-20 0.72
1-3/8"	1-5/8"	MS35769-35	AN900-22 0.99
1-1/2"	1-3/4"	MS35769-39	AN900-24 0.88
1-5/8"	1-7/8"	MS35769-42	AN900-26 1.57
1-11/16"	1-15/16"	MS35769-46	AN900-27 1.60
1-3/4"	2"	MS35769-48	AN900-28 0.68
1-13/16"	2-1/16"	MS35769-51	AN900-29 1.15
1-7/8"	2-1/8"	MS35769-52	AN900-30 2.13

HOMEBUILDERS O'RING KIT

Specification AS568A O-ring kit, 382 "o" rings of 70 Duro Nitrile. Sizes 06-32. Great for the homebuilders. Manufactured in Taiwan.



DESCRIPTION	PART NUMBER	PRICE EACH
Homebuilders o-ring kit	HMBK-1	31.55

MS28775 O-RINGS (AN6227B)

Provide effective sealing over wide ranges of pressure, temperature and movement - sealing pressure in both directions and reducing friction and wear on moveable parts. When used as gaskets or static seals, these O-rings permit metal-to-metal contact and allow almost unlimited pressures under extreme vibration. They should be lubricated before installation, and constant lubrication should be provided for running seals to avoid excessive wear.



I.D.	O.D.	THICKNESS "W"	OLD AN NUMBER	PART NUMBER	PRICE EACH
1/8	1/4	1/16	AN6227B-1	MS28775-006	0.69
5/32	9/32	1/16	AN6227B-2	MS28775-007	0.52
3/16	5/16	1/16	AN6227B-3	MS28775-008	0.52
7/32	11/32	1/16	AN6227B-4	MS28775-009	0.39
1/4	3/8	1/16	AN6227B-5	MS28775-010	0.52
5/16	7/16	1/16	AN6227B-6	MS28775-011	0.52
3/8	1/2	1/16	AN6227B-7	MS28775-012	0.50
3/8	9/16	3/32	AN6227B-8	MS28775-110	0.39
7/16	5/8	3/32	AN6227B-9	MS28775-111	0.42
1/2	11/16	3/32	AN6227B-10	MS28775-112	0.52
9/16	3/4	3/32	AN6227B-11	MS28775-113	0.52
5/8	13/16	3/32	AN6227B-12	MS28775-114	0.52
11/16	7/8	3/32	AN6227B-13	MS28775-115	0.39
3/4	15/16	3/32	AN6227B-14	MS28775-116	0.52
3/4	1	1/8	AN6227B-15	MS28775-210	0.52
13/16	1-1/16	1/8	AN6227B-16	MS28775-211	0.52
7/8	1-1/8	1/8	AN6227B-17	MS28775-212	0.52
15/16	1-3/16	1/8	AN6227B-18	MS28775-213	0.51
1	1-1/4	1/8	AN6227B-19	MS28775-214	0.52
1-7/16	1-5/16	1/8	AN6227B-20	MS28775-215	0.52
1-1/8	1-3/8	1/8	AN6227B-21	MS28775-216	0.52
1-3/16	1-7/16	1/8	AN6227B-22	MS28775-217	0.86
1-1/4	1-1/2	1/8	AN6227B-23	MS28775-218	0.46
1-15/16	1-9/16	1/8	AN6227-B24	MS28775-219	0.87
1-3/8	1-5/8	1/8	AN6227-B25	MS28775-220	0.56
1-7/16	1-11/16	1/8	AN6227-B26	MS28775-221	0.87
1-1/2	1-3/4	1/8	AN6227-B27	MS28775-222	0.87
1-1/2	1-7/8	3/16	AN6227-B28	MS28775-325	1.09
1-5/8	2	3/16	AN6227B-29	MS28775-326	1.06
1-3/4	2-1/8	3/16	AN6227B-30	MS28775-327	0.76

3/8" TUBE FITTING O'RING,

O-RINGS FUEL PUMP FITTINGS
Adapts 1/4-18 tapered threads or when interference occurs with other accessories, it may be necessary to adapt pump thread to AN fitting with these fuel pump fittings. O-rings not included. Requires 2 fittings and 2 o-rings. Straight 1/8" male brass pipe nipples. 1/8" NPT.



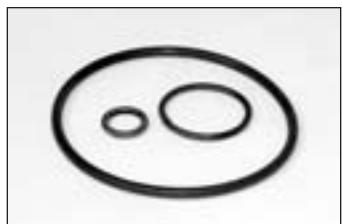
TUBE SIZE	PART NUMBER	PRICE
3/8"	MS29512-06	0.59

HARDWARE

MS29513 FUEL RESISTANT O-RINGS

Composed of a nitrile polymer that meets MIL-P-5315 for Hydrocarbon fuel resistance as needed with jet fuel.

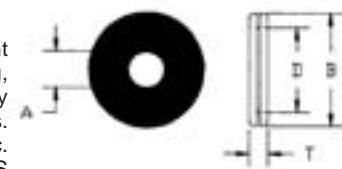
Temperature range: -76 to +200°. Durometer:70. Width is based on cross section.



MS35489 GROMMETT SYNTHETICK RUBBER

Flexible, hot oil and coolant resistant grommets. Used to protect tubing, wiring, and control cables where they pass through bulkheads and fire walls. Made of black synthetic rubber to Spec. MIL-G-3036. Order grommets by MS number plus dash number for size. Example: MS35489-2.

NOTE: 1. MS35489 grommets and AN931 grommets of like dimensions are interchangeable. 2. The table shows only those grommets having a groove width of 1/16".



DIMENSIONS IN INCHES				OLD AN931 DASH NO.	PART NUMBER	PRICE EACH
A	B	D	T			
1/8	.344	1/4	3/16		MS35489-1	0.32
1/8	3/4	9/16	3/16	-2-9	MS35489-2	0.35
1/8	1-1/4	1	1/4	-2-16	MS35489-3	0.75
3/16	3/4	9/16	3/16	-3-9	MS35489-134	0.48
3/16	7/16	5/16	3/16	-3-5	MS35489-4	0.26
3/16	7/8	5/8	3/16	-3-10	MS35489-5	0.35
1/4	5/8	7/16	3/16	-4-7	MS35489-6	0.29
1/4	1	3/4	1/4	-4-12	MS35489-7	0.55
1/4	1-1/4	1	1/4	-4-16	MS35489-8	0.99
5/16	13/16	9/16	5/16	-5-9	MS35489-9	0.39
5/16	1	3/4	5/16	-5-12	MS35489-10	0.55
5/16	1-1/16	13/16	5/16	-5-13	MS35489-118	0.55
3/8	7/8	5/8	5/16	-6-10	MS35489-11	0.34
3/8	1-1/4	1	1/4	-6-16	MS35489-12	0.75
7/16	15/16	11/16	5/16	-7-11	MS35489-13	0.50
1/2	1-1/6	13/16	5/16	-8-13	MS35489-14	0.55
1/2	1-1/2	1-1/4	1/4	-8-20	MS35489-15	0.85
9/16	1-1/16	13/16	5/16	-9-13	MS35489-16	0.56
5/8	1-1/8	7/8	5/16	-10-14	MS35489-17	0.65
5/8	1-1/2	1-1/4	1/4	-10-20	MS35489-18	0.90
11/16	1-5/16	1	3/8	-11-16	MS35489-19	0.85
3/4	1-5/8	1-1/4	1/4	-12-20	MS35489-135	0.96
3/4	1-3/8	1-1/16	3/8	-12-17	MS35489-20	0.80
3/4	1-13/16	1-7/16	3/8	-12-23	MS35489-21	1.60
7/8	1-5/8	1-1/4	7/16	-14-20	MS35489-22	0.99
1	1-3/4	1-3/8	7/16	-16-22	MS35489-23	1.05
1	2-1/4	1-7/8	7/16	-16	MS35489-24	1.75

BUNA N O-RING KIT

380 pc Buna-N o-ring kit contains 30 popular sizes, from -006 to -327. Typical static or dynamic applications include gasoline, jet fuel, water-based hydraulic fluid, glycols, etc. Temp range: -65 degrees F to +285 degrees F. Duro: 70. Meets MIL-G-21569B, cl 1 for general purpose use, AS568A, & ASTM D2000 2BG 720 EA14 EO14 EO34. Made in U.S.



HOLE PLUGS

Used to plug holes in skin or panels, or for use as a removable access hole cover. 4 hole sizes available. Made of steel.



CONTAINS SIZE	PART NUMBER	PRICE
-006 to -327	AS568BN70	92.63

SIZE	PART NUMBER	PRICE
3/4"	SHP75	0.50
1"	SHP100	0.65
1-1/4"	SHP125	0.70
1-1/2"	SHP150	0.75

HARDWARE

SAFETY WIRE

Corrosion and heat resistant to AMS 5687, 1800° F. Pound Spool of .032 contains approximately 358 feet, .041 contains approximately 218 feet, .032 contains approximately 358 feet.



WIRE DIAMETER	PART NUMBER	PRICE EACH
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STAINLESS:

.020 1# roll	MS20995C-020	10.29
.032 1/4# roll	MS20995C-032-1/4	3.75
.032 1# roll	MS20995C-032	8.10
.041 1/4# roll	MS20995C-041-1/4	4.88
.041 1# roll	MS20995C-041	7.44

BRASS:

.020 Brass	BRASS-020	18.10
.032 Brass	BRASS-032	17.42
.041 Brass	BRASS-041	21.92

INCONEL SAFETY WIRE

Uncoated inconel wire for general lock wire use above 700 degrees F. Good choice for hot wiring. Meets QQ-W-390 annealed. Sold by the foot. 2 wire sizes available.



WIRE SIZE	SOLD	PART NUMBER	PRICE
.032	BY THE FOOT	NASM20995N32	0.37
.040	BY THE FOOT	NASM20995N40	0.36

SAFETY WIRE TOOL

Easy one-hand operation. Reaches in tight places, makes a fast and neat wire twist. Shatterproof plastic handle.



DESCRIPTION	PART NUMBER	PRICE EACH
Wire tool	A-013	13.99

SAFETY WIRE TWISTERS

Twists perfectly every time. These pliers have an automatic spring return. 2 sizes 6" and 10" available.



DESCRIPTION	PART NUMBER	PRICE EACH
6" Twisters	2W393	16.99
10" Twisters	1W393	16.99

RIVETERS TAPE 3M

Riveters tape is specially designed to hold rivets in place prior to and during riveting operations; especially useful in speeding up large jobs. 3/16" rubber adhesive strips along both edges border a tack-free transparent center window that ensures easy visibility of rivets with no risk of adhesive transfer to rivet heads. Roll size: 3/4"x 36 yds.



DESCRIPTION	PART NUMBER	PRICE
3/4"x36 yd	3M685	6.75

5052 ALUMINUM RIVET

5056 aluminum rivet, dome head with carbon steel break stem - open end. Has shear strength 210, tensile 325.



DIAMETER	LENGTH	GRIP RANGE	PART NUMBER	PRICE
1/8"	.313	.126-.187	AD43BS	0.14
3/16"	.425	.063-.250	AD62BS	0.15

POP BRAND CLOSED END

Pop Rivet, 120 degree countersunk head, closed end, rivet is 5056 aluminum, steel mandrel. Unique cup shaped end configuration seals tight, preventing passage of vapor or liquid through set rivet. Length .341, Grip is .063-.125.



DESCRIPTION	PART NUMBER	PRICE
POP RVT,D1/8	AK42H	0.18

CHERRY Q ALUMINUM AACQ

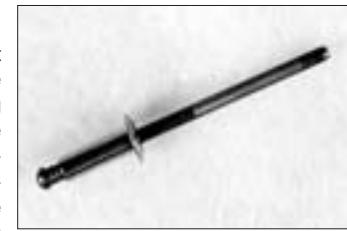
Structural, self-plugging 5056 aluminum rivet with a 7178 aluminum mandrel. Countersunk (flush) head.



DIA	LENGTH	GRIP	SHEAR	TENSILE	PART#	PRICE
1/8"	.337	.126-.187	225 LBS	250 LBS	AACQ-43	0.69
1/8"	.400	.188-.250	225 LBS	250 LBS	AACQ-44	0.43
1/8"	.525	.313-.375	225 LBS	250 LBS	AACQ-46	0.53

Q-STRUCTURAL ALUMINUM

Structural, self-plugging rivet. The rivet material is steel, cad plated and the mandrel is steel, cad plated. Protruding head. Cherry Q rivet mandrel plugs the entire length of the rivet sleeve, providing full sheer strength values for structural or load bearing applications. The specially designed mandrel of the Q rivet is engineered to effect a seal, upon installation which offers resistance to leakage. The rivet sleeve curls over end of mandrel to insure its positive retention of vibration resistance. The 1/8" diameter rivets have a minimum shear strength of 500 lbs and tensile strength of 400 lbs.



DIA	LENGTH	GRIP	PART NUMBER	PRICE
1/8"	.462	.251-.312	SSPQ-45	0.36
1/8"	.650	.438-.500	SSPQ-48	0.23
5/32"	.300	.062-.125	SSPQ-52	0.40
5/32"	.362	.126-.187	SSPQ-53	0.35

HARDWARE

CAMLOC STUD INSTALLATION PLIERS

For use with stud series 2600, 2700, and 4002, simply compress stud spring, insert stud into panel and release.



RETAINING RING SPLIT AL2600

Non snap-in studs only for series 2600 & 2700. Order separately. Retaining rings are required for stud length dash numbers 3-5 and greater. Studs with smaller dash numbers are self-captivating and retaining rings are not used. Solid rings are used to hold stud assemblies stationary to top panel. Split ring allows stud assemblies to move freely within the top panel. Stainless steel.



DESCRIPTION	PART NUMBER	PRICE EACH
Camloc pliers	4P3	29.75

CAMLOC RECEPTACLE DRILL JIG

Drill jig for determining the correct location of rivet & center holes when installing Camloc 2600, 2700 & 4000 series fastener receptacles. Made of lightweight aluminum with tool steel drill bushings & pins to prevent wear.



DESCRIPTION	PART NUMBER	PRICE
SPLIT	AL2600-SW	0.39

SOUTHCO STUDS

Quarter turn fastener. #85 is the large series for robust applications and quick access. Studs are slotted recess. The third number indicates stud length. Composed of 1008 steel with a zinc chromate plating plus sealer. 85 series is .290 diameter. May be available in stainless upon request.



MIMIMUM THICKNESS	MAXIMUM THICKNESS	PART NUMBER	PRICE EACH
.090	.109	85-11-100-16	1.21
.110	.129	85-11-120-16	1.25
.130	.149	85-11-140-16	1.25
.150	.169	85-11-160-16	1.25
.170	.189	85-11-180-16	1.25
.190	.209	85-11-200-16	1.59

DESCRIPTION	PART NUMBER	PRICE
2600, 2200, 4000 SER	RDJ16	40.50

COUNTERSUNK CAMLOC DIMPLE TOOL

This tool creates a perfect dimple with the exact countersink angle needed for installing Camloc 2700 series fasteners in thin sheet metal panels. (Also for Dzus FJ4 fasteners) Made of zinc-plated premium tool steel.



4002 STUD EJECTOR SPRING

Provides full retraction of stud assembly to allow opening and closing of equipment without the possibility of jamming or damage. Made of spring steel and is Cad II plated. Use with Plus Flush Grommets. Plain rivet hole diameter .128-.134. Length from center hole to center rivet holes is 3. and 3.75".



DESCRIPTION	PART NUMBER	PRICE
STUD EJECTOR SPRING	4002-SN	10.05

DESCRIPTION	PART NUMBER	PRICE
FOR 2700 & FJ4	C27DT	20.50

FLUSH CAMLOC DIMPLE TOOL

Dimple tool used for installing Camloc 4000 series flush grommets in thin sheet metal panels. Creates a perfect dimple with the exact countersunk angle required. Made of bright zinc-plated tool steel for long life.



TINNERMAN PATCH PLATES

8-32 Flat head 82 deg plate. Will work for hole in skin .906 diameter. Outside diameter 1-1/6"



DESCRIPTION	PART NUMBER	PRICE
STUD EJECTOR SPRING	4002-SN	10.05

DESCRIPTION	PART NUMBER	PRICE
4000 FLUSH GROMMETS	C40DT	21.80

SNAP RING TOOL R4G & R4T

Special tool used to quickly & easily install R4G & R4T snap rings onto Camloc 4000 series grommets. Its cone-shaped insert spreads the ring while the tube handle pushes it onto the grommet. CNC machined from tool steel & zinc-plated with comfortable rubber end cap.



WEIGHT	CAPACITY	PART NUMBER	PRICE
1-1/16"	.906	PP1116	3.45

DESCRIPTION	PART NUMBER	PRICE
FOR R4G & R4T RINGS	C26SRT	23.25

HARDWARE

QUICK RELEASE PINS STAINLESS

Supercedes MS17985C Spec. Single acting 1/4" DIA. pins with recessed release button to prevent accidental release. Extruded aluminum T-Handles are designed to withstand high tensile loads, assuring excellent impact & crack resistance. Includes attaching ring.

Made from corrosion resistant 17-4 PH stainless steel. Double shear Min: 9200. Tensile strength Min:230

DIAMETER	GRIP	PART NUMBER	PRICE
1/4"	1.40"	NASM17985C-414	18.55
1/4"	2.10"	NASM17985C-421	19.95



ACCESS DOOR

1" diameter spring loaded access door, made of 302 stainless steel, passivated finish per ASTM A967.



DESCRIPTION	PART NUMBER	PRICE EACH
Camloc access door	KM713-16-064	10.84

FLUSH LATCH

The Hartwell H5000-2 is a unique spring-loaded, trigger action latch for cowling and access doors. Made of corrosion resistant steel. Rivet or spot weld to structure.4-1/16" long.



DESCRIPTION	PART NUMBER	PRICE EACH
Flush Latch	H5000-2	9.99

RV CANOPY LOCK

A sliding canopy lock for use on RV-6, 7, 8, 9 & F1 Rocket aircraft. The lock is designed so that the canopy may be locked in a partially vented open position or completely closed by the optional use of a spacer. (incl) Installation requires that a single 1/4" hole be drilled in the canopy rail. Package includes a drill guide.



DESCRIPTION	PART NUMBER	PRICE
USE RV 6-9 & F1	RVLOCK	99.97

TORQUE SEAL INSPECTION LACQUER

Provides an easy visual means of identifying movement or loosening of fittings or nuts on critical components after they are properly torqued or positioned. Fast drying adhesion to all metals and most other surfaces. Sealant becomes brittle and will crack under movement. Color: daylight fluorescing orange.
1/2 oz. tube.



DESCRIPTION	PART NUMBER	PRICE EACH
Inspection lacquer - 1/2 oz. tube	F900	2.75

PLASTIC HARDWARE BOX

2 sizes clear plastic boxes with hinged lid. Large: 9" x 13" x 2-5/8" deep. 24 compartments. Small: 11" x 6-3/4" x 1-1/4" deep. 18 compartments each 1-3/4" x 2. Ideal for hardware.



DESCRIPTION	PART NUMBER	PRICE EACH
Large clear box	LPB-1	7.99
Small clear box	SMPB-1	5.95

RACK FOR BOXES

This unit hold 5 of the large clear boxes (LPB-1) to create a compact and efficient small parts storage system. Made of gray baked cold rolled steel, rack has keyhole slots for wall mounting and handle for carrying. Bolt holes are provided for stacking more than one unit.



DESCRIPTION	PART NUMBER	PRICE EACH
Unit for large plastic boxes	RACK-L	44.29

STORAGE BOX

Heavy duty plastic 4 compartment box has spring loaded lids and curved bins for easy removal of parts. Box measures 6" wide, 7" long , 2" deep. Has handle for easy carrying.



DESCRIPTION	PART NUMBER	PRICE EACH
Storage box	SBOX	4.85

LOCTITE THREADLOCKER

Single component thixotropic compounds for preventing the loosening and leakage of threaded fasteners. 2 strengths available. Medium: for applications requiring disassembly with hand tools. Cure: 6-24 hours. Average breakaway torque: 110 in lbs. Meets Mil-S-46163A Type II Grade N. High: for applications where difficult removal is desired. Cure: 24 hours, Average breakaway torque: 250 in.lbs. Meets MIL-S-46163A Type I Grade K. 10 ml bottles. 242 Medium Strength 24221 11.92



DESCRIPTION	PART NUMBER	PRICE EACH
271 High Strength	27121	11.92

LOCTITE THREADLOCKER STICK

Non spillable semi solid stick formula threadlockers allow easy application in overhead or other difficult applications without the messy waste of liquids. Compact 9 gram stick is small enough to carry in pocket or tool box. Available in 2 strengths: Blue medium for hand tool removal or Red high requiring heat application for removal. Maximum temperature 300 degrees F.



SIZE	TYPE	PART NUMBER	PRICE
9 GRAM STICK	BLUE MEDIUM	37684	11.83
9 GRAM STICK	RED HIGH	37685	11.33