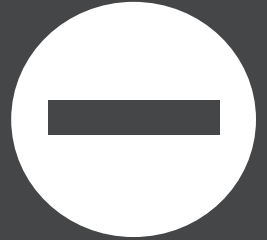
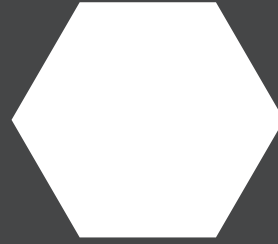


AN-MS-NAS Aircraft Hardware



Skybolt AN-MS-NAS Fastener Index

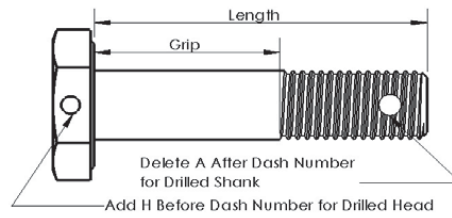
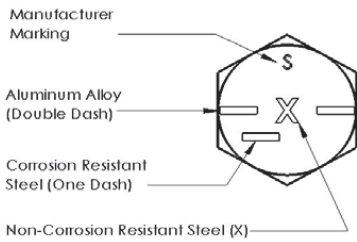
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AN3 thru AN20 - AIRFRAME BOLTS

Steel - Cadmium plated per QQ-P-416, Type II, Class 3.

Aluminum Alloy. 431 Stainless Steel (CRES). Minimum Tensile Strength (Steel and CRES) - 125,000psi. See Chart

AN42 thru AN49 EYEBOLTS

Steel - Cadmium plated per QQ-P-416, Type II, Class 3. CRES.

	(3/16) #10-32 (.186-.189) AN3		1/4-28 (.246-.249) AN4		5/16-24 (.309-.312) AN5		3/8-24 (.371-.374) AN6		7/16-20 (.433-.437) AN7		1/2-20 (.495-.499) AN8	
	AN42 AN42B		AN43 AN43B		AN44 AN45		AN46		AN47		AN48	
DASH NO.	GRIP ±1/64	LENGTH +1/32 -1/64	GRIP ±1/64	LENGTH +1/32 -1/64	GRIP ±1/64	LENGTH +1/32 -1/64	GRIP ±1/64	LENGTH +1/32 -1/64	GRIP ±1/64	LENGTH +1/32 -1/64	GRIP ±1/64	LENGTH +1/32 -1/64
3	1/16	15/32	1/16	15/32								
4	1/8	17/32	1/16	17/32	1/16	19/32						
5	1/4	21/32	3/16	21/32	3/16	23/32	1/16	45/64	1/16	23/32		
6	3/8	25/32	5/16	25/32	5/16	27/32	3/16	53/64	3/16	27/32	1/16	27/32
7	1/2	29/32	7/16	29/32	7/16	31/32	5/16	61/64	5/16	31/32	3/16	31/32
10	5/8	1-1/32	9/16	1-1/32	9/16	1-3/32	7/16	1-5/64	7/16	1-1/32	5/16	1-1/32
11	3/4	1-5/32	11/16	1-5/32	11/16	1-7/32	9/16	1-13/64	9-16	1-7/32	7/16	1-7/32
12	7/8	1-9/32	13/16	1-9/32	13/16	1-11/32	11/16	1-21/64	11/16	1-11/32	9/16	1-11/32
13	1	1-13/32	15/16	1-13/32	15/16	1-15/32	13/16	1-29/64	13/16	1-15/32	11/16	1-15/32
14	1-1/8	1-17/32	1-1/16	1-17/32	1-1/16	1-19/32	15/16	1-37/64	15/16	1-19/32	13/16	1-19/32
15	1-1/4	1-21/32	1-3/16	1-21/32	1-3/16	1-23/32	1-1/16	1-45/64	1-1/16	1-23/32	15/16	1-23/32
16	1-3/8	1-25/32	1-5/16	1-25/32	1-5/16	1-27/32	1-3/16	1-53/64	1-3/16	1-27/32	1-1/16	1-27/32
17	1-1/2	1-29/32	1-7/16	1-29/32	1-7/16	1-31/32	1-5/16	1-61/64	1-5/16	1-31/32	1-3/16	1-31/32
20	1-5/8	2-1/32	1-9/16	2-1/32	1-9/16	2-3/32	1-7/16	2-5/64	1-7/16	2-3/32	1-5/16	2-3/32
21	1-3/4	2-5/32	1-11/16	2-5/32	1-11/16	2-7/32	1-9/16	2-13/64	1-6/16	2-7/32	1-7/16	2-7/32
22	1-7/8	2-9/32	1-13/16	2-9/32	1-13/16	2-11/32	1-11/16	2-21/64	1-11/16	2-11/32	1-9/16	2-11/32
23	2	2-13/32	1-15/16	2-13/32	1-15/16	2-15/32	1-13/16	2-29/64	1-13/16	2-15/32	1-11/16	2-15/32
24	2-1/8	2-17/32	2-1/16	2-17/32	2-1/16	2-19/32	1-15/16	2-37/64	1-15/16	2-16/32	1-13/16	2-19/32
25	2-1/4	2-21/32	2-3/16	2-21/32	2-3/16	2-23/32	2-1/16	2-45/64	2-1/16	2-23/32	1-15/16	2-23/32
26	2-3/8	2-25/32	2-5/16	2-25/32	2-5/16	2-27/32	2-3/16	2-53/64	2-3/16	2-27/32	2-1/16	2-27/32
27	2-1/2	2-29/32	2-7/16	2-29/32	2-7/16	2-31/32	2-5/16	2-61/64	2-5/16	2-31/32	2-3/16	2-31/32
30	2-5/8	3-1/32	2-9/16	3-1/32	2-9/16	3-3/32	2-7/16	3-5/64	2-7/16	3-3/32	2-5/16	3-3/32
31	2-3/4	3-5/32	2-11/16	3-5/32	2-11/16	3-7/32	2-9/16	3-13/64	2-9/16	3-7/32	2-7/16	3-7/32
32	2-7/8	3-9/32	2/13/16	3-9/32	2-13/16	3-11/32	2-11/16	3-21/64	2-11/16	3-11/32	2-9/16	3-11/32
33	3	3-13/32	2-15/16	3-13/32	2-15/16	3-15/32	2-13/16	3-29/64	2-13/16	3-15/32	2-11/16	3-15/32
34	3-1/8	3-17/32	3-1/16	3-17/32	3-1/16	3-19/32	2-15/16	3-37/64	2-15/16	3-19/32	2-13/16	3-19/32
35	3-1/4	3-21/32	3-3/16	3-21/32	3-3/16	3-23/32	3-1/16	3-45/64	3-1/16	3-23/32	2-15/16	3-23/32
36	3-3/8	3-25/32	3-5/16	3-25/32	3-5/16	3-27/32	3-3/16	3-53/64	3-3/16	3-27/32	3-1/16	3-27/32
37	3-1/2	3-29/32	3-7/16	3-29/32	3-7/16	3-31/32	3-5/16	3-61/64	3-5/16	3-31/32	3-3/16	3-31/32
40	3-5/8	4-1/32	3-9/16	4-1/32	3-9/16	4-3/32	3-7/16	4-5/64	3-7/16	4-3/32	3-5/16	4-3/32
41	3-3/4	4-5/32	3-11/16	4-5/32	3-11/16	4-7/32	3-6/16	4-13/64	3-9/16	4-7/32	3-7/16	4-7/32
42	3-7/8	4-9/32	3-13/16	4-9/32	3-13/16	4-11/32	3-11/16	4-21/64	3-11/16	4-11/32	3-9/16	4-11/32
43	4	4-13/32	3-15/16	4-13/32	3-15/16	4-15/32	3-13/16	4-29/64	3-13/16	4-15/32	3-11/16	4-15/32
44	4-1/8	4-17/32	4-1/16	4-17/32	4-1/16	4-19/32	3-15/16	4-37/64	3-15/16	4-19/32	3-13/16	4-19/32
45	4-1/4	4-21/32	4-3/16	4-21/32	4-3/16	4-23/32	4-1/16	4-45/64	4-1/16	4-23/32	3-15/16	4-23/32
46	4-3/8	4-25/32	4-5/16	4-25/32	4-5/16	4-27/32	4-3/16	4-53/64	4-3/16	4-27/32	4-1/16	4-27/32
47	4-1/2	4-29/32	4-7/16	4-29/32	4-7/16	4-31/32	4-5/16	4-61/64	4-5/16	4-31/32	4-3/16	4-31/32
50	4-5/8	5-1/32	4-9/16	5-1/32	4-9/16	5-3/32	4-7/16	5-5/64	4-7/16	5-3/32	4-5/16	5-3/32
51	4-3/4	5-5/32	4-11/16	5-5/32	4-11/16	5-7/32	4-9/16	5-13/64	4-9/16	5-7/32	4-7/16	5-7/32
52	4-7/8	5-9/32	4-13/16	5-9/32	4-13/16	5-11/32	4-11/16	5-21/64	4-11/16	5-11/32	4-9/16	5-11/32
53	5	5-13/32	4-15/16	5-13/32	4-15/16	5-15/32	4-13/16	5-19/64	4-13/16	5-15/32	4-11/16	5-15/32
54	5-1/8	5-17/32	5-1/16	5-17/32	5-1/16	5-19/32	4-15/16	5-37/64	4-15/16	5-19/32	4-13/16	5-19/32
55	5-1/4	5-21/32	5-3/16	5-21/32	5-3/16	5-23/32	5-1/16	5-45/64	5-1/16	5-23/32	4-15/16	5-23/32
56	5-3/8	5-25/32	5-5/16	5-25/32	5-5/16	5-27/32	5-3/16	5-53/64	5-3/16	5-27/32	5-1/16	5-27/32
57	5-1/2	5-29/32	5-7/16	5-29/32	5-7/16	5-31/32	5-5/16	5-61/64	5-5/16	5-31/32	5-3/16	5-31/32
60	5-5/8	6-1/32	5-9/16	6-1/32	5-9/16	6-3/32	5-7/16	6-5/64	5-7/16	6-3/32	5-5/16	6-3/32

	AN3	AN4	AN5	AN6	AN7	AN8
Washer	AN960-10	AN960-416	AN960-516	AN960-616	AN960-716	AN960-816
Nut	AN365-1032	AN365-428	AN365-524	AN365-624	AN365-720	AN365-820
Cotter	AN380-2	AN380-2	AN380-2	AN380-3	AN380-3	AN380-3
Pin	1/16	1/16	1/16	3/32	3/32	3/32

AIRFRAME BOLTS AN3 Thru AN7



Undrilled shank bolts have the letter 'A' after dash number. Drilled head bolts have the letter 'H' after the AN number (See previous page).

RATED STRENGTH (POUNDS)*

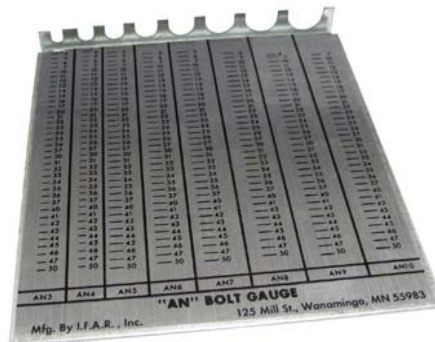
AN Bolt	Thread	Tensile		Yield		Single Shear	
		Steel	Aluminum	Steel	Aluminum	Steel	Aluminum
AN3	No. 10-32 NF -3A	2210	1100	1690	710	2125	990
AN4	1/4 -28 UNE-3A	4080	2030	3130	1310	3680	1715
AN5	5/16-24 UNF-3A	6500	3220	4980	2080	5750	2685
AN6	3/8 -24 UNF -3A	10100	5020	7740	3240	8280	3870
AN7	7/16-20 UNF -3A	13600	6750	10430	4350	11250	5250
AN8	1/2 -20 UNF -3A	18500	9780	14190	5920	14700	6850
AN9	9/16-18 UNF -3A	23600	11700	18100	7550	18700	8700
AN10	5/8 -18 UNF-3A	30100	14900	23080	9610	23000	10750
AN12	3/4 -16 UNF -3A	44000	21800	33730	14100	33150	15500
AN14	7/8 -14 UNF-3A	60000	29800	46000	19200	45050	21050
AN16	1 -14 NF -3A	80700	40000	61870	25800	58900	27500
AN17	1 -12 UNF -3A	80700	40000	61870	25800	58900	27500
AN18	1-1/8 -12 UNF-3A	101800	50500	78050	32600	73750	34500
AN20	1-1/4 -12 UNF-3A	130200	64400	99820	41500	91050	42500

*All AN Bolts meet minimum Tensile Strength Values of 125,000 PSI
 Commercial Grade 8 Bolts Have a Comparative Strength of 150,000 PSI
 Commercial Grade 5 Bolts Have a Comparative Strength of 120,000 PSI
 Dropping to 110.000 PSI for Diameters Greater Than 1-Inch
 Commercial Grade 2 Bolts Have a Comparative Strength of 70.000 PSI
 Dropping to 60.000 PSI for Diameters Greater Than 3/4"

NF -National Fine Thread
 UNF-Unified National Fine Thread

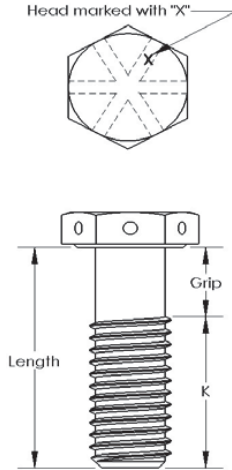
AN BOLT GAUGE

Measure AN Bolts and AN Eyebolts accurately up to 5/8" Diameter and 5" Length
 Metal Construction
Part# AN Bolt Gauge



DRILLED HEAD BOLTS AN73 Thru AN81

Superseded by MS20073 (Fine Thread)
or MS20074 (Course Thread)
MS20073 and MS 20074 parts and AN73
thru AN81 parts of like thread and
grip are interchangeable. Rated
strengths are similar to AN3 thru
AN20 with minium tensile of 125K.

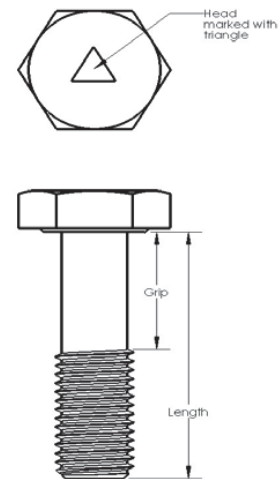


Dash No.	AN73 MS20073-03 10-32			AN73A MS20073-05 10-24										
	AN74 MS20073-04			AN74A MS20074-04			AN75 MS20073-05		AN75A MS20074-05		AN76 MS20073-06		AN76A MS20074-06	
	1/4-28			1/4-20			5/16-24		5/16-18		3/8-24		3/8-16	
	Grip	Length	K	Grip	Length	K	Grip	Length	K	Grip	Length	K	Grip	Length
	.016	+ .031 - .016	Ref (MIN)				.016	+ .031 - .016	Ref (MIN)			.016	+ .031 - .016	Ref (MIN)
02	.062	.344	.250											
03	.062	.469	.375											
04	.062	.594	.500				.062	.609	.515					
05	.125	.656	.499				.125	.672	.515			.062	.734	.640
06	.250	.781	.499				.250	.797	.515			.125	.797	.640
07	.375	.906	.499				.375	.922	.515			.250	.922	.640
10	.500	1.031	.499				.500	1.047	.515			.375	1.047	.640
11	.625	1.156	.499				.625	1.172	.515			.500	1.172	.640
12	.750	1.281	.499				.750	1.297	.515			.625	1.297	.640
13	.875	1.406	.499				.875	1.422	.515			.750	1.422	.640
14	1.000	1.531	.499				1.000	1.547	.515			.875	1.547	.640
15	1.125	1.656	.499				1.125	1.672	.515			1.000	1.672	.640
16	1.250	1.781	.499				1.250	1.797	.515			1.125	1.797	.640
17	1.375	1.906	.499				1.375	1.922	.515			1.250	1.922	.640
20	1.500	2.031	.499				1.500	2.047	.515			1.375	2.047	.640
21	1.625	2.156	.499				1.625	2.172	.515			1.500	2.172	.640
22	1.750	2.281	.499				1.750	2.297	.515			1.625	2.297	.640
23	1.875	2.406	.499				1.875	2.422	.515			1.750	2.422	.640
24	2.000	2.531	.499				2.000	2.547	.515			1.875	2.547	.640
25	2.125	2.656	.499				2.125	2.672	.515			2.000	2.672	.640
26	2.250	2.781	.499				2.250	2.797	.515			2.125	2.797	.640
27	2.250	2.906	.499				2.375	2.922	.515			2.250	2.922	.640
30	2.500	3.031	.499				2.500	3.049	.515			2.375	3.049	.640

CLOSE TOLERANCE BOLTS AN173 thru AN186

Dash No.	AN173 3/16-32		AN174 1/4-28		AN175 5/16-24		AN176 3/8-24	
	Grip	Length	Grip	Length	Grip	Length	Grip	Length
	+/-1/64	+1/32 -1/64	+/-1/64	+1/32 -1/64	+/-1/64	+1/32 -1/64	+/-1/64	+1/32 -1/64
-3	1/16	15/32	1/16	15/32				
-4	1/8	17/32	1/16	17/32	1/16	19/32		
-5	1/4	21/32	3/16	21/32	3/16	23/32	1/16	45/64
-6	3/8	25/32	5/16	25/32	5/16	27/32	3/16	53/64
-7	1/2	29/32	7/16	29/32	7/16	31/32	5/16	61/64
-10	5/8	1-1/32	9/16	1-1/32	9/16	1-3/32	7/16	1-5/64
-11	3/4	1-5/32	11/16	1-5/32	11/16	1-7/32	9/16	1-13/64
-12	7/8	1-9/32	13/16	1-9/32	13/16	1-11/32	11/16	1-21/64
-13	1	1-13/32	15/16	1-13/32	15/16	1-15/32	13/16	1-29/64
-14	1-1/8	1-17/32	1-1/16	1-17/32	1-1/16	1-19/32	16/16	1-37/64
-15	1-1/4	1-21/32	1-3/16	1-21/32	1-3/16	1-23/32	1-1/16	1-45/64
-16	1-3/8	1-25/32	1-5/16	1-25/32	1-5/16	1-27/32	1-3/16	1-53/64
-17	1-1/2	1-29/32	1-7/16	1-29/32	1-7/16	1-31/32	1-5/16	1-61/64
-20	1-5/8	2-1/32	1-9/16	2-1/32	1-9/16	2-3/32	1-7/16	2-5/64
-21	1-3/4	2-5/32	1-11/16	2-5/32	1-11/16	2-7/32	1-9/16	2-13/64
-22	1-7/8	2-9/32	1-13/16	2-9/32	1-13/16	2-11/32	1-11/16	2-21/64
-23	2	2-13/32	1-15/16	2-13/32	1-15/16	2-15/32	1-13/16	2-29/64
-24	2-1/8	2-17/32	2-1/16	2-17/32	2-1/16	2-19/32	1-15/16	2-37/64
-25	2-1/4	2-21/32	2-3/16	2-21/32	2-3/16	2-23/32	2-1/16	2-45/64
-26	2-3/8	2-25/32	2-5/16	2-25/32	2-5/16	2-27/32	2-3/16	2-53/64
-27	2-1/2	2-29/32	2-7/16	2-29/32	2-7/16	2-31/32	2-5/16	2-61/64
-30	2-5/8	3-1/32	2-9/16	3-1/32	2-9/16	3-3/32	2-7/16	3-5/64

MIL-B-6812 Specifications
Similar to AN3-AN8 Bolts
except machined after plating
to closer tolerance. Coated
as per MIL-C-11796 or -16173.
Same strength values as AN3-
AN8 bolts. Available with
drilled shank and head.



Example Part#s

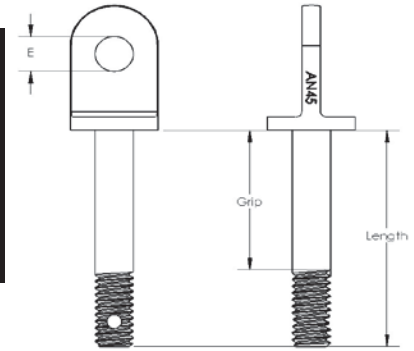
AN176-10 3/8-24 x 1-5/64, Steel, Drilled Shank, Undrilled Head
AN176C10 3/8-24 x 1-5/64, CRES, Drilled Shank, Undrilled Head
AN176DD10A 3/8-24 x 1-5/64, Alum, UnDrilled Shank, Undrilled Head
AN176DDH10 3/8-24 x 1-5/64, Alum, Drilled Shank, Drilled Head

EYEBOLT AN42 Thru AN49



Rated Strength-Pounds

AN#	Size	E		Pin Size	Tensile Strength of eye	Yield Strength of eye
		Min	Max			
AN42B	10-32	.190	.192	3/16	1,150	880
AN43B	1/4-28	.190	.192	3/16	2,450	1,880
AN44	5/16-24	.250	.253	1/4	3,910	3,000
AN45	5/16-24	.313	.316	5/16	5,290	4,055
AN46	3/8-24	.375	.378	3/8	7,015	5,375
AN47	7/16-20	.375	.378	3/8	9,200	7,055
AN48	1/2-20	.375	.441	7/16	14,375	11,020
AN49	9/16-18	.500	.503	1/2	20,125	15,430

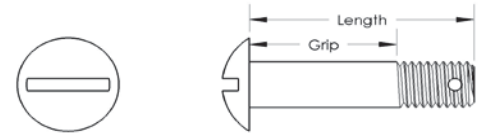


Refer to AN3-AN9 Chart for length Data and Dash Numbers.

CLEVIS BOLT AN21 Thru AN36

Rated Strength- Pounds

AN#	Size	Shear	Tensile	AN#	Size	Shear	Tensile
AN21	6-40	1,060	510	AN28	1/2-20	14,700	9,250
AN22	8-32	1,050	760	AN29	9/16-18	18,700	11,800
AN23	10-32	2,125	1,105	AN30	5/8-18	23,000	15,050
AN24	1/4-28	3,680	2,040	AN32	3/4-16	33,150	22,000
AN25	5/16-24	5,750	3,250	AN34	7/8-14	45,050	30,000
AN26	3/8-24	8,280	5,050	AN37	1-12	58,900	40,350
AN27	7/16-20	11,250	6,800				



Dash #	AN23 (10-32) Grip	AN23 (10-32) Length	AN24 (1/4-28) Grip	AN24 (1/4-28) Length	AN25 (5/16-24) Grip	AN25 (5/16-24) Length	AN26 (3/8-24) Grip	AN26 (3/8-24) Length	AN27 (7/16-20) Grip	AN27 (7/16-20) Length
-8	3/16	17/32	3/16	17/32						
-9	1/4	19/32	1/4	19/32	1/4	39/34	1/4	39/34		
-10	5/16	21/32	5/16	21/32	5/16	43/64	5/16	43/64		
-11	3/8	23/32	3/8	23/32	3/8	47/64	3/8	47/64		
-12	7/16	25/32	7/16	25/32	7/16	51/64	7/16	51/64	3/8	51/64
-13	1/2	27/32	1/2	27/32	1/2	55/64	1/2	55/64	7/16	55/64
-14	9/16	29/32	9/16	29/32	9/16	59/64	9/16	59/64	1/2	59/64
-15	5/8	31/32	5/8	31/32	5/8	63/34	5/8	63/34	9/16	63/34
-16	11/16	1-1/32	11/16	1-1/32	11/16	1-3/64	11/16	1-3/64	5/8	1-3/64
-17	3/4	1-3/32	3/4	1-3/32	3/4	1-7/64	3/4	1-7/64	11/16	1-7/64
-18	13/16	1-5/32	13/16	1-5/32	13/16	1-11/64	13/16	1-11/64	3/4	1-11/64
-19	7/8	1-7/32	7/8	1-7/32	7/8	1-15/64	7/8	1-15/64	13/16	1-15/64
-20	15/16	1-9/32	15/16	1-9/32	15/16	1-19/64	15/16	1-19/64	7/8	1-19/64
-21	1	1-11/32	1	1-11/32	1	1-23/64	1	1-23/64	15/16	1-23/64
-22	1-1/16	1-13/32	1-1/16	1-13/32	1-1/16	1-27/64	1-1/16	1-27/64	1	1-27/64
-23	1-1/8	1-15/32	1-1/8	1-15/32	1-1/8	1-31/64	1-1/8	1-31/64	1-1/16	1-31/64
-24	1-3/16	1-17/32	1-3/16	1-17/32	1-3/16	1-35/64	1-3/16	1-35/64	1-1/8	1-35/64
-25	1-1/4	1-19/32	1-1/4	1-19/32	1-1/4	1-39/64	1-1/4	1-39/64	1-3/16	1-39/64
-26	1-5/16	1-21/32	1-5/16	1-21/32	1-5/16	1-43/64	1-5/16	1-43/64	1-1/4	1-43/64
-27	1-3/8	1-23/32	1-3/8	1-23/32	1-3/8	1-47/64	1-3/8	1-47/64	1-5/16	1-47/64
-28	1-7/16	1-25/32	1-7/16	1-25/32	1-7/16	1-51/64	1-7/16	1-51/64	1-3/8	1-51/64
-29	1-1/2	1-27/32	1-1/2	1-27/32	1-1/2	1-55/64	1-1/2	1-55/64	1-7/16	1-55/64
-30	1-9/16	1-29/32	1-9/16	1-29/32	1-9/16	1-59/64	1-9/16	1-59/64	1-1/2	1-59/64
-31	1-5/8	1-31/32	1-5/8	1-31/32	1-5/8	1-63/64	1-5/8	1-63/64	1-9/16	1-63/64
-32	1-11/16	2-1/32	1-11/16	2-1/32	1-11/16	2-3/64	1-5/8	2-3/64	1-5/8	2-3/64
.34	1-13/16	2-5/32	1-13/16	2-5/32	1-13/16	2-11/64	1-13/16	2-11/64	1-3/4	2-11/64
.36	1-15/16	2-9/32	1-15/16	2-9/32	1-15/16	2-19/64	1-15/16	2-19/64	1-7/8	2-19/64
.38	2-1/16	2-13/32	2-1/16	2-13/32	2-1/16	2-27/64	2-1/16	2-27/64	2	2-27/64
.40	2-3/16	2-17/32	2-3/16	2-17/32	2-3/16	2-35/64	2-3/16	2-35/64	2-1/8	2-35/64

MS-NAS High Strength Bolts -continued-



(Special Order Only)

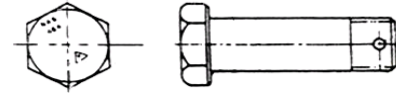
NAS464 BOLT - SHEAR CLOSE TOLERANCE ALLOY STEEL

160,000 PSI Minimum Tensile Strength

NAS464-3 #10-32	NAS464-4 1/4-28	NAS464-5 5/16-24	NAS464-5L 5/16-24	NAS464-6 3/8-24	NAS464-6L 3/8-24
NAS464-7 7/16-20	NAS464-7L 7/16-20 Long Thread	NAS464-8 1/2-20	NAS464-8L 1/2-20 Long Thread	Thru	NAS464-16L 1-12

Example Part#s

NAS464-3-11 #10-32 x 1-1/32, Unplated Shank, Drilled Shank
 NAS464P3-11 #10-32 x 1-1/32, Plated Shank, Drilled Shank
 NAS464-6L16 3/8-24 x 1-7/16, Long Thread, Unplated, Drilled Shank
 NAS464P6LA29 3/8-24 x 2-1/4, Long Thread, Plated Shank, Undrilled Shank



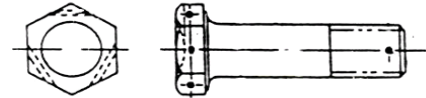
NAS1303 THRU NAS1320 BOLT - SHEAR, HEXAGON HEAD, LONG THREAD Alloy Steel

160,000 PSI Minimum Tensile Strength

NAS1303 #10-32	NAS1304 1/4-24	NAS1305 5/16-24	NAS1306 3/8-24	NAS1307 7/16-20	NAS1308 1/2-20
NAS1309 9/16-18	NAS1310 5/8-18	NAS1312 3/4-16	NAS1314 7/8-14	Thru	NAS1320 1-1/4-12

Example Part#s

NAS1308-10 1/2-20 X 1.360, Undrilled Shank, Undrilled Head
 NAS1310-27D 5/8-18 x 2.590, Drilled Shank, Undrilled Head
 NAS1310-96DH 5/8-18 x 6.902, Drilled Shank, Drilled Head
 NOTE: NAS1103/NAS1303 Series Bolts have the same grip values per dash#.
 NAS1303 have longer threads, hence longer length per dash#.



INTERNAL WRENCHING BOLTS

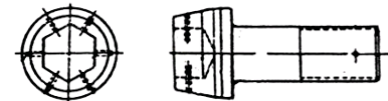
MS20004 THRU MS20024 BOLT- INTERNAL WRENCHING ALLOY STEEL

160,000 PSI Minimum Tensile Strength, 96,000 PSI Minimum Shear Strength

MS20004 1/4-28	MS20005 5/16-24	MS20006 3/8-24	MS20007 7/16-20	MS20008 1/2-20	MS20009 9/16-18
MS20010 5/8-18	MS20012 3/4-16	MS20014 7/8-14	MS20016 1-14	Thru	MS20024 1-1/2-12

Example Part#s

MS20006-18 3/8-24 X 1.812, Undrilled Head
 MS20008H96 1/2-20 X 6.812, Drilled Head



NAS144 THRU NAS158 BOLT - INTERNAL WRENCHING ALLOY STEEL

160,000 PSI Minimum Tensile Strength

NAS144 1/4-28	NAS145 5/16-24	NAS146 3/8-24	NAS147 7/16-20	NAS148 1/2-20	NAS149 9/16-18	NAS150 5/8-18
NAS152 3/4-16	NAS154 7/8-14	NAS156 1-1/4	NAS158 1-1/8-12			

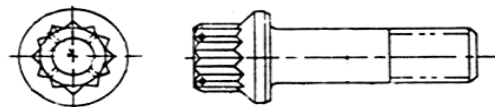
Example Part#s

NAS144-25 1/4-28 x 1-9/16, Undrilled Shank, Undrilled Head
 NAS148DH-127 1/2-20 x 7-15/16, Undrilled Shank, Drilled Head
 NAS150ADH-49 5/8-18 x 3-1/16, Drilled Shank, Drilled Head

EXTERNAL WRENCHING (12 POINT) BOLTS

BACB30MR	6AL-4V	TITANIUM	160,000 PSI Tensile Strength
MS21250	Alloy Steel 180,000 PSI Tensile Strength		
BACB30LE	A286 Stainless 200,000 PSI Tensile Strength		

The above bolts are available with Drilled or Undrilled Head.



NOTES MS-NAS bolts may be special order items as stocking levels and availability may be limited.

NAS Bolts - To determine the dash # of most NAS bolts and screws, divide the dimensional thickness of parts being joined (or measure the bolt grip to the end of the full cylindrical portion of shank) and divide by .0625. Example: Grip= .250/.0625 =4. MS bolts must be chart referenced.

STANDARD LOCKNUTS

THIN NUT (250F)		REGULAR NUT (250F)		HIGH TEMP ALL-METAL LOCKNUT	
MS20364A (AN364) Steel-Nylon Insert MS20364C (AN364C) All-Metal See MS21245		MS20365A (AN365) Steel-Nylon Insert MS20365C (AN365) All-Metal (Steel) MS21044C Stainless-Nylon Insert		MS21045 (450F) (AN363,NAS1021) Steel MS21045C (450F) (AN363C,NAS1021A)CRES MS21046 (800F) (NAS1021C) CRES-Silver Plate	
	MS20364 (Steel-Nylon)	MS20365 (Steel-Nylon)	MS21044C (Stainless-Nylon)	AN363 (Steel)	MS21046 (Stainless)
SIZE	Part#	Part#	Part#	Part#	Part#
#4-40	MS20364-440A	MS20365-440A	MS21044C04	AN363-440	MS21046C04
#6-32	MS20364-632A	MS20365-632A	MS21044C06	AN363-632	MS21046C06
#8-32	MS20364-832A	MS20364-832A	MS21044C08	AN363-832	MS21046C08
#10-32	MS20364-1032A	MS20364-1032A	MS21044C3	AN363-1032	MS21046C3
1/4-28	MS20364-428A	MS20364-428A	MS21044C4	AN363-428	MS21046C4
5/16-24	MS20364-524A	MS20364-524A	MS21044C5	AN363-524	MS21046C5
3/8-24	MS20364-624A	MS20364-624A	MS21044C6	AN363-624	MS21046C6
7/16-20	MS20364-720A	MS20364-720A	MS21044C7	AN363-720	MS21046C7
1/2-20	MS20364-820A	MS20364-820A	MS21044C8	AN363-820	MS21046C8
9/16-18	MS20364-918A	MS20364-918A	MS21044C9	AN363-918	MS21046C9
5/8-18	MS20364-1018A	MS20364-1018A	MS21044C10	AN363-1018	MS21046C10

Note: AN365C or MS20365C denote All-Metal (Steel) nuts. Stainless Nylon Locknuts should be ordered as MS21044C. MS20364/AN364 and MS20365/AN365 are interchangeable. MS21044 can replace AN363/NAS1021, but MS20365/AN365 cannot replace MS21044 (not interchangeable). MS21045 can replace AN363C/NAS1021C but are not interchangeable. Because of supply, pricing for AN363C can and does exceed MS21046C.

PLAIN NUTS		AN310 CASTLE NUT		AN310C CASTLE NUT		AN320 SHEAR NUT		AN320C SHEAR NUT		AN315 PLAIN NUT		AN316 CHECK NUT		AN360 ENGINE NUT	
Procurement Specification FF-N-836 Cadmium Plated Per QQ-P-416 AN360 Meets Specs AN-N-2															
Dash#	SIZE	AN310-632	AN310C632	AN320-632	AN320C632	AN315-632	AN316-632	AN360-632							
-632	#6-32	AN310-832	AN310 C832	AN320-832	AN320C832	AN315-832	AN316-832	AN360-832							
-832	#8-32	AN310-3	AN310 C3	AN320-3	AN320C3	AN315-3	AN316-3	AN360-3							
-3	#10-32	AN310-4	AN310 C4	AN320-4	AN320C4	AN315-4	AN316-4	AN360-4							
-4	1/4-28	AN310-5	AN310 C5	AN320-5	AN320C5	AN315-5	AN316-5	AN360-5							
-5	5/16-24	AN310-6	AN310 C6	AN320-6	AN320C6	AN315-6	AN316-6	AN360-6							
-6	3/8-24	AN310-7	AN310 C7	AN320-7	AN320C7	AN315-7	AN316-7	AN360-7							
-7	7/16-20	AN310-8	AN310 C8	AN320-8	AN320C8	AN315-8	AN316-8	AN360-8							
-8	1/2-20	AN310-9	AN310 C9	AN320-9	AN320C9	AN315-9	AN316-9	AN360-9							
-9	9/16-18	AN310-10	AN310 C10	AN320-10	AN320C10	AN315-10	AN316-10	AN360-10							
-10	5/8-18														
-3L	#10-32L					AN315-3L	AN316-3L								
-4L	1/4-28L					AN315-4L	AN316-4L								
-5L	5/16-24L					AN315-5L	AN316-5L								
-6L	3/8-24L					AN315-6L	AN316-6L								
-7L	7/16-20L					AN315-7L	AN316-7L								

Note: AN360 Nuts are designed specifically for engines and should not be used on airframes as per drawing. AN360 Nuts have base countersunk 90Deg to the threads verses 110Deg for other AN Nuts.

NYLON CAP LOCKNUT		AC CAP NUT		AN350 WING NUT	
Nylon Cap and Insert 250 Deg 80PSI Steel Cadmium Plated per QQ-P-416		Brass cap nut		Cadmium plated per QQ-P-416	
Part#	Size	Part#	Size	Part#	Size
F22NKT M-62	#6-32	AC632	#6-32	AN350-632	#6-32
F22NKT M-82	#8-32	AC832	#8-32	AN350-832	#8-32
F22NKT M-02	#1032	AC1032	#10-32	AN350-3	#10-32
F22NKT E-048	1/4-28			AN350-4	1/4-28
				AN350-5	5/16-24
				AN350-6	3/8-24

REDUCED DIMENSION LOCKNUT MS21042 (450F) MS21043 (800F)



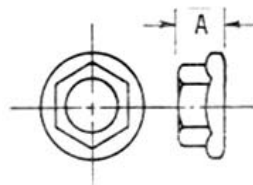
MS21042 - 160,000 PSI Tensile Strength Steel - Cadmium plated per QQ-P-416

Replace (-) with (L) for Dry Film Lubricant.

MS21043 - 125,000 PSI Tensile Strength CRES - Silver plated

Superceeds MS21040, NAS679, NAS1021, NAS1022, NAS1291

MS21042	Thread	Amax	Strength	Weight
-02	#2-56	.100	660LB	.09g
-04	#4-40	.125	1,110	.23
-06	#6-32	.141	1,670	.36
-08	#8-32	.188	2,490	.68
-3	#10-32	.188	3,470	.82
-4	1/4-28	.219	6,200	1.59
-5	5/16-24	.260	9,820	2.72
-6	3/8-24	.282	15,200	3.63



Note: MS20365-1032A = 2.3grams MS21042 Cadmium Plated Steel are stock items.

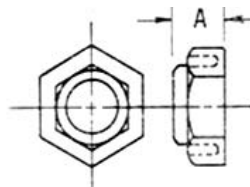
MS21042 Nuts are sometimes referred to as Jet Nuts or Kaynuts.

MS21043	Thread	Amax	Strength	Weight
-04	#4-40	.125	750LB	.23g
-06	#6-32	.141	1,136	.36
-08	#8-32	.188	1,720	.68
-3	#10-32	.188	2,460	.82
-4	1/4-28	.219	4,580	1.59
-5	5/16-24	.266	7,390	2.72
-6	3/8-24	.282	11,450	3.63

LOW HEIGHT HEX LOCKNUT NAS679 (450F AND 800F)

125,000 PSI Tensile Strength Steel - Cadmium plated per QQ-P-416 with Dry Film Lubricant. Replace (A) with (X) for Cadmium plate without Dry Film Lubricant. CRES - Replace (A) with (C). Add (W) to dash# to indicate internal wrenching feature.

NAS679	Thread	Amax	Strength	Weight
A04	#4-40	.125	750LB	.59g
A06	#6-32	.141	1,130	1.04
A08	#8-32	.188	1,720	1.27
A3	#10-32	.188	2,460	1.59
A4	1/4-28	.219	4,580	2.41
A5	5/16-24	.266	7,390	3.86
A6	3/8-24	.282	11,450	4.99
A7	7/16-20	.328	15,450	8.84

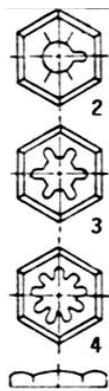


PAL NUT MS27151 and USAF 356

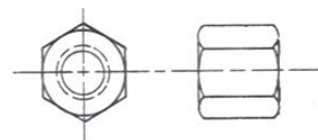
SAE 1050 Spring Steel (MS27151)

Cadmium Plated per QQ-P-416

MS27151	Type	Size	USAF 356
-5	2	#6-32	-632
-6	2	#8-32	-832
-7	2	#10-32	-1032
-8	2	#10-24	-1024
-12	3	1/4-20	-420
-13	3	1/4-28	-428
-15	3	5/16-18	-518
-16	4	5/16-24	-524
-18	3	3/8-16	-616
-19	4	3/8-24	-624
-21	4	7/16-20	-720
-23	3	1/2-13	-813
-24	4	1/2-20	-820



EXHAUST MANIFOLD NUTS



Part#	Size	Application
NAF213790-4 or 21247	1/4-28	Cont 0470
NAF213790-5 or 22022	5/16-24	Cont A65,C75 thru C90,O200 O300
CONT 643967	1/4-28	Cont O470
STD1410	5/16-18	Steel Lycoming

Sheet

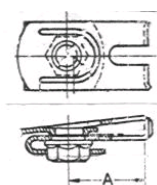
FLOATING CLIP-ON NUTS

MIL-N-25027 125,000 PSI

Hardened SAE 1050 Steel

Cadmium Plated per QQ-P-416

(Nut and Clip)



Part#	Size	Thickness	'A'
294667	#6-32	.030-.051	.295
130007	#8-32	.020-.090	.515
130008	#8-32	.020-.070	.400
130061	#10-32	.020-.090	.515
130062	#10-32	.020-.090	.665
130068	#10-32	.140-.230	.740

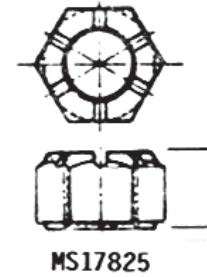
See Page 106 for Piper Clip Nuts

MS17825 - CASTELLATED NUT, LOCKING, Regular Height

Steel - Cadmium plated per QQ-P-416, Nylon Insert 250 Deg F

MS17826 - CASTELLATED NUT, LOCKING, Thin

Steel - Cadmium plated per QQ-P-416, Nylon Insert 250 Deg F



MS17825



MS17826

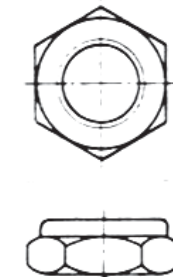
Dash#	Thread	MS17825			MS17826		
		Amax	Axial Strength	Weight	Amax	Axial Strength	Weight
-3	#10-32	.265	1950LB	1.81g	.203	1000LB	1.54g
-4	1/4-28	.296	3500	2.95	.203	1800	1.81
-5	5/16-24	.343	5500	4.54	.203	2900	2.49
-6	3/8-24	.421	9000	6.35	.234	4100	3.40
-7	7/16-20	.468	12200	9.07	.234	5000	3.86
-8	1/2-20	.578	16600	17.69	.265	5600	7.26
-9	9/16-18	.624	21200	31.30	.328	7800	13.61
-10	5/8-18	.734	27400	51.71	.328	10000	18.14
-12	3/4-16	.828	40000	76.66	.390	15500	26.54

MS21245 (MS20364C) - NUT, LOCKING Thin

Steel - Cadmium plated per QQ-P-416, Allmetal Nut 450 Deg F

80,000 PSI Tensile Strength

MS21245	MS20364	Thread	Amax	Axial Strength	Weight
	-632C	#6-32	.125		
	-832C	#8-32	.172		
	-1032C	#10-32	.172		
	-428C	1/4-28	.203		
	-524C	5/16-24	.250		
	-624C	3/8-24	.266		
-7	-720C	7/16-20	.328	10300	8.75g
-8	-820C	1/2-20	.328	13750	9.89
-9	-918C	9/16-18	.375	17400	15.47
-10	-1018C	5/8-18	.407	21800	18.00
-12	-1216C	3/4-16	.422	31800	24.99



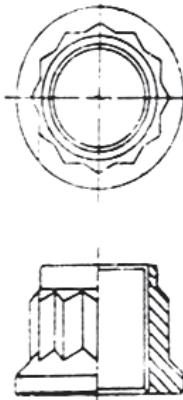
NAS1804

BACN10GW - 12 POINT NUT, LOCKING

Alloy Steel per ANS6304 Heat Treated, Cadmium plated per QQ-P-416, 450 Deg f

180,000 PSI Tensile Strength

Dash#	Thread	Amax	Axial Strength	Weight
-3	#10-32	.190	4035LB	.95g
-4	1/4-28	.250	7200	1.91
-5	5/16-24	.285	11400	3.22
-6	3/8-24	.375	17000	5.72
-7	7/16-20	.438	23000	9.62
-8	1/2-20	.500	30700	13.65
-9	9/16-18	.562	38900	18.69
-10	5/8-18	.625	48700	24.31
-12	3/4-16	.750	70800	43.86



MACHINE SCREW NUT AN340 and AN345

SIZE	AN340	MS35649	SIZE	AN345	MS35650
#4-40	-4	-242	#8-36	-8	-382
#4-40	B4	-245	#10-32	-10	-302
#4-40	C4	-244	#10-32	C10	-304
#6-32	-6	-262	#10-32	B10	-305
#6-32	C6	-264	1/4-28	-416	-3252
#6-32	B6	-265	1/4-28	C416	-3254
#8-32	-8	-282	5/16-24	-516	-3312
#8-32	C8	-284	3/8-24	-616	-3382
#8-32	B8	-286			
#10-24	-10	-202			
#10-24	C10	-204			
1/4-20	-416	-2252			
1/4-20	C416	-2254			
5/16-18	-516	-2312			
3/8-16	-616	-2382			



Recommended Torque Values for Nut-Bolt Combinations



(Without Lubrication) Reference - AC 43.13-1A

Bolts Steel Tension	Bolts Steel Tension	Bolts Aluminum
AN 3 thru AN 20 An 42 thru AN 49 AN 173 thru AN 186 MS 20033 thru MS 20046 MS20073 MS20074 AN509 MS24694 AN 525 MS27039	MS20004 thru 20024 NAS 144 thru NAS 158 NAS 333 thru 340 NAS 583 thru NAS 590 NAS 624 thru NAS 644 NAS 1303 thru NAS 1320 NAS 172 NAS 174 NAS 517 NAS464	AN 3DD thru AN 20DD AN 173DD thru AN 186 DD AN 509DD AN525D MS 27039D MS24694DD

Nuts Steel Tension Steel Shear		Nuts Steel Tension Steel Shear		Nuts Aluminum Tension Aluminum Shear	
AN 310	AN 320	AN 310	AN 320	AN 365 D	AN 320 D
AN 315	AN 634	AN 315	AN 364	AN 310 D	AN 364 D
AN 363	NAS 1022	AN 363	NAS 1022	NAS 1021 D	NAS 1022 D
AN 365	MS 17826	AN 365	MS 17826		
NAS 1021	MS 20364	MS 17825	MS 20364		
MS 17825		MS 20365			
MS 21045		MS 21045			
MS 20365		NAS 1021			
MS 20500		NAS 679			
NAS 679		NAS 1291			

FINE THREAD SERIES

Nut Bolt size	Torque Limits in lbs.		Torque Limits in lbs.		Torque Limits in lbs.		Torque Limits in lbs.		Torque Limits in lbs.		Torque Limits in lbs.	
	Min.	Max	Min.	Max	Min.	Max	Min.	Max	Min.	Max	Min.	Max
8-36	12	15	7	9	-----	-----	-----	-----	5	10	3	6
10-32	20	25	12	15	25	30	15	20	10	15	5	10
1/4-28	50	70	30	40	80	100	50	60	30	45	15	30
5/16-24	100	140	60	85	120	145	70	90	40	65	25	40
3/8-24	160	190	95	110	200	250	120	150	75	110	45	70
7/16-20	450	500	270	300	520	630	300	400	180	280	110	170
1/2-20	480	690	290	410	770	950	450	550	280	410	160	260
9/16-18	800	1,000	480	600	1,100	1,300	650	800	380	580	230	360
5/8-18	1,100	1,300	660	780	1,250	1,550	750	950	550	670	270	420
3/4-16	2,300	2,500	1,300	1,500	2,650	3,200	1,600	1,900	950	1,250	560	880
7/8-14	2,500	3,000	1,500	1,800	3,550	4,350	2,100	2,600	250	1,900	750	1,200
1-14	3,700	4,500	2,200	3,300	4,500	5,500	2,700	3,300	600	2,400	950	1,500
1 1/8-12	5,000	7,000	3,000	4,200	6,000	7,300	3,600	4,400	100	3,200	1,250	2,000
1 1/4-12	9,000	11,000	5,400	6,600	11,000	13,400	6,600	8,000	900	5,600	2,300	3,650

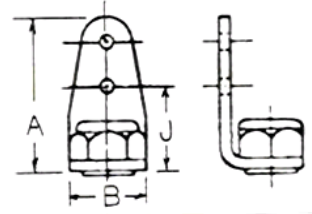
COARSE THREAD SERIES

8-32	12	15	7	9
10-24	20	25	12	15
1/4-20	40	50	25	30
5/16-18	80	90	48	55
2/8-16	160	185	95	110
7/16-14	235	255	140	155
1/2-13	400	480	240	290
9/16-12	500	700	300	420
5/8-11	700	900	420	540
3/4-10	1,150	1,600	700	950
7/4-9	2.2	3,000	1,300	1,800
1-8	3,700	5,000	2,200	3,000
1 1/8-8	5,500	6,500	3,300	4,000
1 1/4-8	6,500	8,000	4,000	5,000

PLATENUTS

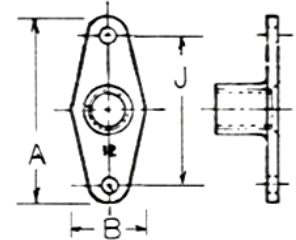
AN256 RIGHT ANGLE PLATENUT (NYLON INSERT) 250 Deg F

AN256	Thread	A	B	J
F6	#6-32	.859	.438	.468
F8	#8-32	.859	.438	.468
F10	#10-32	.859	.438	.468



MS20501 TWO LUG PLATENUT (ALL METAL) 1200 Deg F

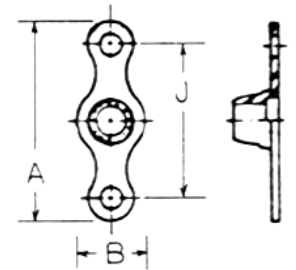
Dash#	Thread	A Max	B Max	J Min	J Max
-632	#6-32	.986	.407	.686	.690
-832	#8-32	.986	.407	.686	.690
-1032	#10-32	.986	.407	.686	.690
-428	1/4-28	1.298	.516	.998	1.002
-524	5/16-24	1.298	.532	.998	1.002
-624	3/8-24	1.298	.641	.998	1.002



MS21047 TWO LUG PLATENUT (ALL METAL) 450 Deg F

Add K to Dash# to denote Dimpled rivet holes.

Dash#	AN362 NAS			Thread	A Max	B Min	B Max	J
	AN366	680	K1000					
L04				#4-40	.948	.195	.260	.688
L06	F632	06	-06	#6-32	.948	.239	.265	.688
L08	F832	08	-08	#8-32	.948	.277	.297	.688
L3	F1032	3	-3	#10-32	.948	.308	.328	.688
L4	F428	4	-4	1/4-28	1.260	.308	.414	1.000
L5	F524	5	-5	5/16-24	1.292	.375	.505	1.000
L6	F624	6		3/8-24	1.292	.485	.614	1.000

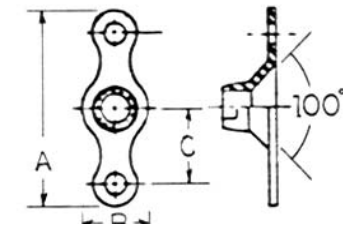


MS21048 Same as MS21047 except: Stainless 450F or 800F with Silver Plating
Supercedes AN362, AN366, NAS680

MS21049 TWO LUG 100Deg CSK PLATENUT (ALL METAL) 450 Deg F

Add K to Dash# to denote Dimpled rivet holes.

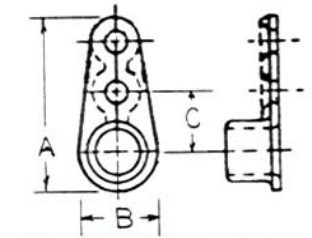
Dash#	AN361 NAS			Thread	A Max	B Min	B Max	C
	AN373F	681						
L08	-832	-08		#8-32	.948	.360	.422	.344
L3	-1032	-3		#10-32	.948	.406	.453	.344
L4	-428	-4		1/4-28	1.260	.535	.619	.500
L5	-524	-5		5/16-24	1.292	.681	.766	.500



MS21050 Same as MS21049 except: Stainless 450F or 800F with Silver Plating
Supercedes NAS681 and AN361

MS21051 ONE LUG PLATENUT (ALL METAL) 450 Deg F

Dash#	NAS		Thread	A Max	B Min	B Max	C
	682	K2000					
L06	-06	-06	#6-32	.935	.239	.297	.344
L08	-08	-08	#8-32	.935	.277	.297	.344
L3	-3	-3	#10-32	.950	.308	.328	.344
L4	-4	-4	1/4-28	.993	.375	.414	.344
L5	-5	-5	5/16-24	1.210	.485	.505	.500
L6	-6	-6	3/8-24	1.264	.594	.614	.500

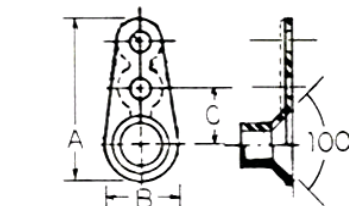


MS21052 Same as MS21051 except: Stainless 450F or 800F with Silver Plating
Supercedes NAS682

MS21053 ONE LUG 100 Deg CSK PLATENUT (ALL METAL) 450 Deg F

Add K to Dash# to denote Dimpled rivet holes.

Dash#	NAS	Thread	A Max	B Min	B Max	C
L08	-08	#8-32	.997	.360	.422	.344
L3	-3	#10-32	1.013	.406	.453	.344
L4	-4	1/4-28	1.252	.535	.619	.500
L5	-5	5/16-24	1.340	.681	.766	.500



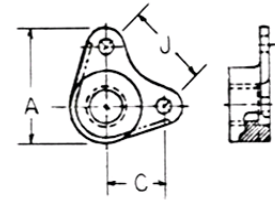
MS21054 Same as MS21053 except: Stainless 450F or 800F with Silver Plating
Supercedes NAS683

PLATENUTS

MS21055 CORNER PLATENUT (All Metal) 450Deg F



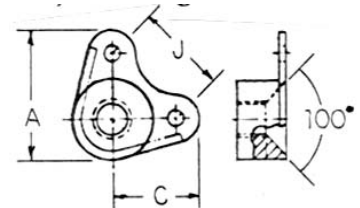
Dash#	NAS		Thread	A	C	J
	684	K3000		Max		
L06	06	-06	#6-32	.637	.344	.486
L08	08	-08	#8-32	.637	.344	.486
L3	3	-3	#10-32	.653	.344	.486
L4	4	-4	1/4-28	.852	.500	.707
L5	5	-5	5/16-24	.914	.500	.707
L6	6		3/8-24	.968	.500	.707
L7	7		7/16-20	1.101	.562	.795



MS21056 Same as MS21055 except: Stainless 450F or 800F with Silver Plating
Supersedes NAS684

MS21057 CORNER 100 Deg CSK PLATENUT (All Metal) 450Deg F

Dash#	NAS		Thread	A	C	J
	685			Max		
L06	-06		#6-32	.700	.344	.486
L08	-08		#8-32	.700	.344	.486
L3	-3		#10-32	.716	.344	.486
L4	-4		1/4-28	.955	.500	.707
L5	-5		5/16-24	1.044	.500	.707

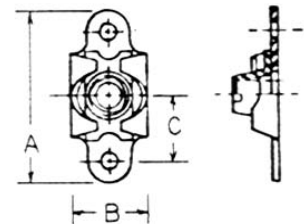


MS21058 Same as MS21057 except: Stainless 450F or 800F with Silver Plating
Supersedes NAS685

MS21059 TWO LUG FLOATING PLATENUT (All Metal) 450Deg F

Add K to Dash# to denote Dimpled rivet and center holes.

Dash#	NAS		Thread	A	B	B	C
	686	F5000		Max	Min	Max	
L04	-04	-04	#4-40	.948	.290	.416	.344
L06	-06	-06	#6-32	.948	.290	.416	.344
L08	-08	-08	#8-32	.948	.290	.416	.344
L3	-3	-3	#10-32	.948	.290	.416	.344
L4	-4	-4	1/4-28	1.292	.350	.516	.500
L5	-5	-5	5/16-24	1.292	.412	.609	.500
L6	-6	-6	3/8-24	1.292	.475	.680	.500

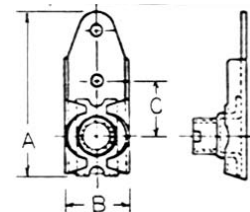


MS21060 Same as MS21059 except: Stainless 450F or 800F with Silver Plating
Supersedes NAS686

MS21061 ONE LUG FLOATING PLATENUT (All Metal) 450Deg F

Add K to Dash# to denote Dimpled rivet and center holes.

Dash#	NAS		Thread	A	B	B	C
	687	F2000		Max	Min	Max	
L04	-04	-04	#4-40	1.051	.290	.422	.344
L06	-06	-06	#6-32	1.051	.290	.422	.344
L08	-08	-08	#8-32	1.051	.290	.422	.344
L3	-3	-3	#10-32	1.051	.290	.422	.344
L4	-4	-4	1/4-28	1.306	.350	.531	.500
L5	-5	-5	5/16-24	1.306	.412	.641	.500

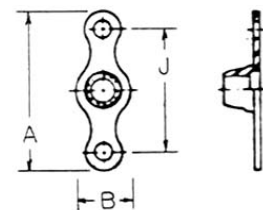


MS21062 Same as MS21061 except: Stainless 450F or 800F with Silver Plating
Supersedes NAS687

MS21069 TWO LUG PLATENUT - MINIATURE (All Metal) 450Deg F

Add K to dash# to denote Dimpled rivet and center holes.

Dash#	NAS		Thread	A	B	B	J
	697	MK1000		Max	Min	Max	
L02	-02	-02	#2-56	.410	.140	.162	.250
L04	-04	-04	#4-40	.630	.140	.260	.406
L06	-06	-06	#6-32	.661	.195	.265	.437
L08	-08	-08	#8-32	.692	.230	.297	.468
L3	-3	-3	#10-32	.724	.298	.328	.500
L4	-4	-4	1/4-28	.786	.380	.414	.562
L5	-5	-5	5/16-24	1.006	.475	.505	.718
L6	-6	-6	3/8-24	1.116	.580	.614	.828



MS21070 Same as MS21069 except: Stainless 450F or 800F with Silver Plating
Supersedes NAS697

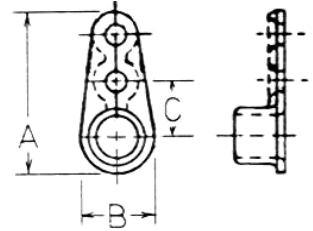
PLATENUTS



MS21071 ONE LUG - MINIATURE (ALL METAL) 450 Deg F

Add K to Dash# to denote Dimpled rivet and center holes.

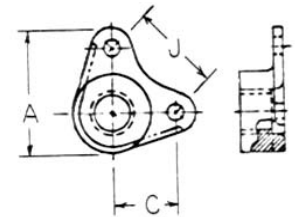
Dash#	NAS			A	B	B	C
	696	MK2000	Thread	Max	Min	Max	
L02	02	-02	#2-56	.507	.140	.162	.125
L04	04	-04	#4-40	.667	.140	.260	.203
L06	06	-06	#6-32	.684	.195	.265	.218
L08	08	-08	#8-32	.716	.235	.297	.234
L3	3	-3	#10-32	.745	.298	.328	.250
L4	4	-4	1/4-28	.822	.380	.414	.281
L5	5	-5	5/16-24	1.06	.475	.505	.359
L6	6	-6	3/8-24	1.39	.580	.614	.414



MS21072 Same as MS21071 except: Stainless 450F or 800F with Silver Plating
 Supercedes NAS696

MS21073 CORNER PLATENUT - MINIATURE

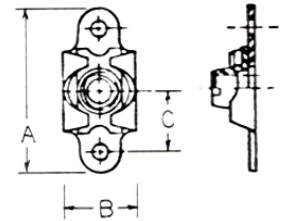
Dash#	NAS		Thread	A	C	J
	698			Max		
L02	-02		#2-56	.288	.125	.177
L04	-04		#4-40	.448	.203	.287
L06	-06		#6-32	.463	.218	.308
L08	-08		#8-32	.497	.234	.331
L3	-3		#10-32	.526	.250	.354
L4	-4		1/4-28	.603	.281	.398
L5	-5		5/16-24	.757	.359	.508
L6	-6		3/8-24	.870	.414	.585



MS21074 Same as MS21073 except: Stainless 450F or 800F with Silver Plating
 Supercedes NAS698

MS21075 TWO LUG FLOATING - MINIATURE

Dash#	NAS			A	B	B	C
	1068	MF5000	Thread	Max	Min	Max	
L04	-04	-04	#4-40	.651	.275	.315	.203
L06	-06	-06	#6-32	.682	.290	.357	.218
L08	-08	-08	#8-32	.707	.290	.367	.234
L3	-3	-3	#10-32	.739	.290	.416	.250
L4	-4	-4	1/4-28	.801	.350	.500	.281
L5	-5	-5	5/16-24	1.010	.412	.581	.359



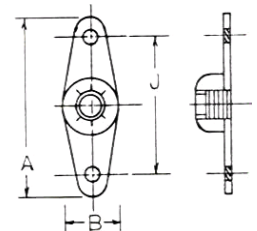
MS21076 Same as MS21075 except: Stainless 450F or 800F with Silver Plating
 Supercedes NAS1068

MS21077 Same as MS21075 except: Stainless 450F or 800F with Silver Plating
 Supercedes NAS1031D and NAS1031N

MS21078 TWO LUG PLATENUT (NYLON INSERT)

Dash#	NAS			A	B	B	J
	AN366	1023N	F22NA1	Max	Min	Max	
-04	-04	-04	#4-40	.984	.375	.406	.688
-06	F632	-06	#6-32	.984	.375	.406	.688
-08	F832	-08	#8-32	.984	.375	.406	.688
-3	F1032	-3	#10-32	.984	.375	.406	.688
-4	F428	-4	1/4-28	1.296	.484	.516	1.000
-5	F524	-5	5/16-24	1.296	.500	.531	1.000
-6	F624	-6	3/8-24	1.296	.609	.641	1.000

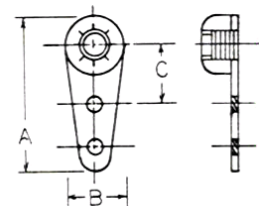
Use MS21047 if applicable



MS21080 ONE LUG PLATENUT (NYLON INSERT)

Dash#	NAS		A	B	B	C
	1025N		Max	Min	Max	
-06	-06		1.031	.375	.406	.344
-08	-08		1.031	.375	.406	.344
-3	-3		1.031	.375	.406	.344
-4	-4		1.062	.438	.516	.344
-5	-5		1.250	.500	.531	.500
-6	-6		1.344	.609	.641	.500

Use MS21051 if applicable

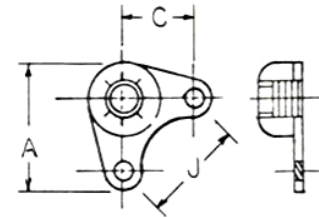


PLATENUTS

MS21081 CORNER PLATENUT (NYLON INSERT) 250 Deg F



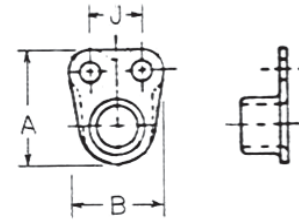
Dash#	NAS		Thread	A	B	J
	1027N	22NA5		Max	Min	
-06	06	-62	#6-32	.703	.344	.486
-08	08	-82	#8-32	.703	.344	.486
-3	3	-02	#10-32	.703	.344	.486
-4	4	-048	1/4-28	.906	.500	.486
-5	5	-054	5/16-24	.937	.500	.707
-6	6	-064	3/8-24	1.008	.500	.707



MS21082 Same as MS21080 except with Floating Nut 250 Deg F
 Supersedes NAS1032N

MS21086 SIDE BY SIDE RIVET SPACED PLATENUT (ALL METAL) 450 Deg F

Dash#	NAS	Thread	A	B	B	J
			Max	Min	Max	
L08	-08	#8-32	.486	.235	.297	.219
L3	-3	#10-32	.521	.298	.328	.219
L4	-4	1/4-28	.591	.380	.414	.219
L5	-5	5/16-24	.747	.475	.505	.269
L6	-6	3/8-24	.856	.580	.614	.269



MS21087 Same as MS21086 except: Stainless 450F or 800F with Silver Plating
 Supersedes NAS1067

AN Notes: No letter - Denotes Aluminum plate. F - Denotes Steel Plate.

MS Notes: No letter - Non Dry Film Lubricant, Plain holes. L - Dry Film Lubricant. K - Countersunk or Dimpled holes. W - Welding projection. All MS Platenuts meet MIL-N-25027 Specifications, 125 KSI except MS20501 which meets MIL-N-7873 Specifications, 125 KSI.

NAS Notes: No letter - Cadmium Plated with Dry Film Lubricant.

Sample Manufacturer's Part Numbers: ESNA - F22NA1. Kaynar - K3000. SPS - NS103185S. Republic - BR3100A. Voi-Shan - VN111D1. Cherry or Boots - T8121S.

HINGES

Sold as Standard 72" Lengths Only.

MS20001 Supersedes AN252 - EXTRUDED HINGE, STRUCTURAL

Aluminum Alloy - 2024-T3511 per QQ-A-200/3, Anodized.

Aluminum Alloy - 7075-T73511 per QQ-A-200/11, Anodized.

Denote 7075 Aluminum by adding 'A' to part number.

'P' denotes anodized finish. Denote 'L' after dash#

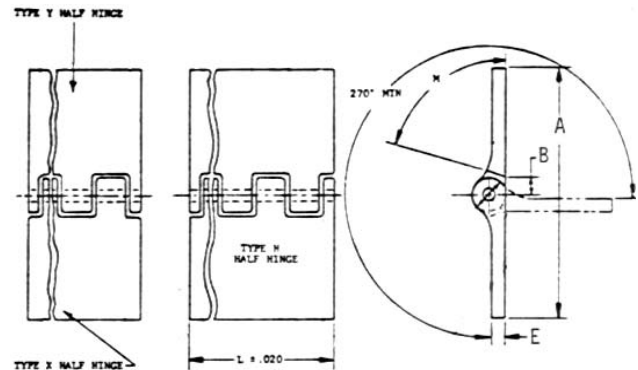
in inches and hundreds. EX: MS20001P4-12.00 denotes

2024 Alum., Anodized, 12" long. Part numbers listed

are interchangeable.

MS20001	AN252	A ref		E		Pin
		Width Open	Max	Min	B	
P2	-2	1.062	.056	.044	.135	2
P3	-3	1.250	.056	.044	.135	2
P4	-4	1.500	.056	.044	.135	2
P5	-5	1.750	.056	.044	.135	2
P6	-6	2.000	.056	.044	.135	2

Note: Hinges may be special order only



MS20257 - CONTINUOUS HINGE

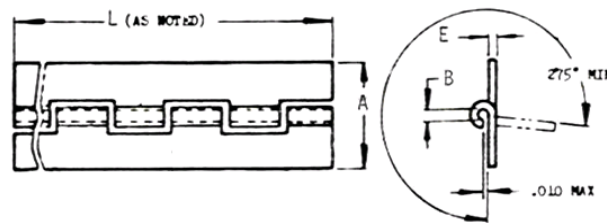
Aluminum Alloy - 5052 H24 or H34 per QQ-P-A-250/8,

Anodized. CRES. 'P' denotes anodized aluminum.

'C' denotes CRES.

MS20257	A ref		E		B		Pin*
	Width Open	Alur	CRES	Alum	CRES	Dash#	
P1	.750	.032	.031	.169	.166	1	
P2	1.062	.040	.037	.220	.211	2	
P3	1.250	.040	.050	.220	.278	2	
P4	1.500	.040	.062	.220	.314	2	
P5	2.000	.051	.062	.253	.376	2	
P6	2.000	.064	.062	.382	.376	4	

*For Aluminum Hinge Only



MS20253 - STAINLESS HINGE PIN

For Use With:

MS20253	Dia	MS20001	MS20257P	MS20257C
-1	.062		1	1
-2	.089	1,2,3,4,5,6	2,3,4,5	2
-3	.117			3,4
-4	.179		4	5,6

TINNERMAN NUTS

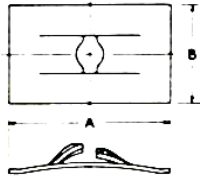


Spring Steel - Phosphate Coated, Olive Drab Paint
Use with AN530, AN531, or MS21207 Screws
FLAT TYPE NAS446

Standard Package 25

ANGLE BRACKET

Part#	NAS446	A	B	Screw Size
A1776-4Z-1	-1	.500	.31	#4
A1181-6Z-1	-2	.510	.31	#6
A1777-6Z-1	--	.630	.44	#6
A1778-8Z-1	-4	.630	.44	#8
A1779-10Z-1	-5	.880	.50	#10

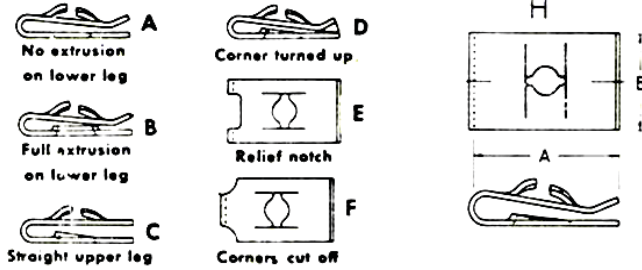


Part#	Screw Size
A6083-8Z-1	#8

Note: Standard design has locking extrusion on lower leg unless noted by "TYPE" variation

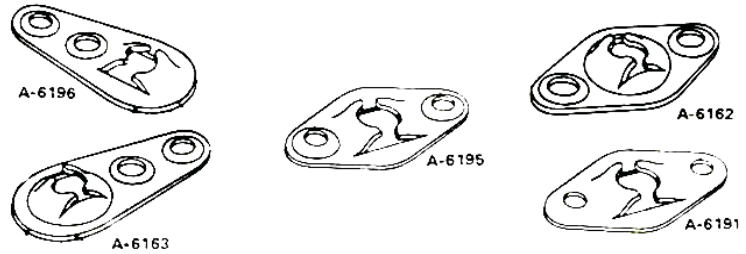
Part#	NAS	A	B	Screw Size	Type
A6187-4Z-1	395-1	.380	.31	#4	D
A1784-6Z-1	395-6	.610	.44	#6	E
A1785-6Z-1	395-7	.840	.44	#6	E
A1274-8Z-1	395-14	.500	.50	#8	DEH
A1348-8Z-1	395-17	.730	.50	#8	AE
A1786-8Z-1	395-12	.530	.50	#8	CEH
A1787-8Z-1	395-18	.840	.44	#8	E
A1789-8Z-1	395-16	.610	.44	#8	E
A1932-8Z-1	395-4	.580	.50	#8	BE
A1350-10Z-1	395-25	.730	.50	#10	AE
A1758-10Z-1	395-24	.620	.44	#10	E
A1787-10Z-1	--	.840	.44	#10	E
A1791-10Z-1	--	.600	.63	#10	EH

DESIGN VARIATIONS AVAILABLE



Part#	A*	Size	Style
A6191-4Z-1	.687	#4	Flat
A6162-6Z-1	.687	#6	Dimpled
A6163-6Z-1	.312	#6	Dimpled
A6191-6Z-1	.687	#6	Flat
A6195-6Z-1	.687	#6	Dimpled
A6162-8Z-1	.687	#8	Dimpled
A6163-8Z-1	.312	#8	Dimpled
A6191-8Z-1	.687	#8	Flat
A6195-8Z-1	.687	#8	Dimpled
A6196-8Z-1	.312	#8	Dimpled
A6191-10Z-1	.687	#10	Dimpled

*Distance between mounting holes.

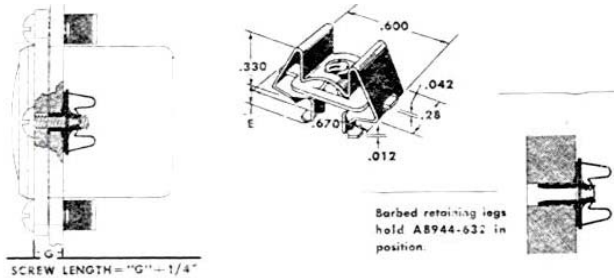


INSTRUMENT MOUNTING NUT NAS487

BRASS - Cadmium Plated per QQ-P-416
Panel

Part#	NAS487	Thickness
A8939-632	-14	.086-.096
A6939-632	-15	.115-.125
A8940-632	-16	.177-.187
A8941-632	-17	.240-.250
A8942-632	-18	.303-.313
A8943-632	-20	.365-.375
A8944-632	-21	> .390

Note: All Instrument Nuts use #6-32 Brass Screws.

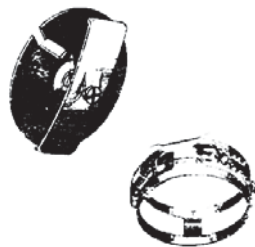


HOSE CLAMPS

Self-locking, ratchet-type hose clamps
Fast, easy installation and removal on
low-and medium-pressure connections.

PATCH PLATES
Used as inspection hole covers and for
sealing holes left after equipment removal.

Part#	Screw Size	Hole Dia
A6912-832-1	#8-32	.906
A6913-1024-1	#10-24	1.125
A6914-1024-1	#10-24	1.375



Part#	NAS#	Hose OD	
		Min	Max
A3122-8-1J	397-8	15/32	1/2
A3122-10-1J	397-10	9/16	5/8
A3122-12-1J	397-12	11/16	3/4
A3122-14-1J	397-14	13/16	7/8
A3122-16-1J	397-16	15/16	1
A3122-18-1J	397-18	1-1/16	1-1/8
A3122-22-1J	397-22	1-1/4	1-3/8
A3122-24-1J	397-24	1-11/32	1-1/2
A3122-28-1J	397-28	1-19/32	1-3/4

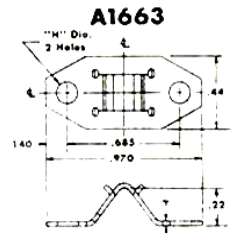
Note: Tinnerman part numbers are becoming increasingly difficult to obtain and some parts may not be available at any price.

TINNERMAN SPRING CATCH - BALL & STUD



Spring Catch

Part#	H	T	Pull Out Tension with P101 Ball
A1663-022-1	.135	.022	12LBS
A1663-028-1	.135	.028	18
A1663-031-1	.135	.031	30

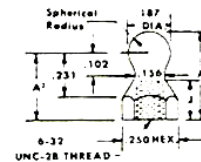


Ball & Stud

Part#	Panel Thickness	A1	A2	J
P101-421	.025-.051	.421	.328	.185
P101-447	.052-.078	.447	.354	.211



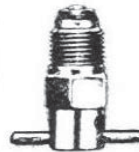
STUD DETAIL



CURTIS DRAIN VALVES

Conform to USAF 28208

Part#	Type
CCA-1550	1/8NPT
CCA-1600	1/4NPT
CCA-1650	3/8NPT
CCA-1700	1/2NPT
CCA-1269	1/8 Seal
CCA-1319	1/4 Seal
CCA-1369	3/8 Seal
CCA-1419	1/2 Seal



CURTIS TYPE VALVE

SAF AIR TYPE VALVE

SAF AIR DRAIN VALVES

Part#	Type
CAV-110	1/8NPT
CAV-100H4	1/8NPT
CAV-160	1/8NPT
CAV-160H4	1/4NPT
CAV-170	7/16-20
CAV-170H4	7/16-20
CAV-180	3/8-24

Aircraft Use

C310 Tip Tanks, Mooney 20&20A, All Ercoupe, Bellanca, Taylorcraft B, Stinson 108 thru 108-3, Voyager 10/10A, Navion, Waco VK & UPF, SeaBee Hose End

Piper PA-11, 12, 18, 20, 22, TriPacer, Apache, Champion, Aeronca, Cessna T50, Early C120 & C140, Beech AT-11 & C18S, Howard

Hose End

Late C140, All C150, C170, C172, C175

Hose End

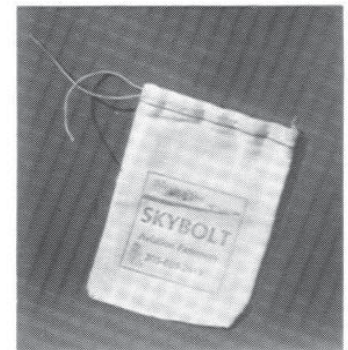
C180, C182, C190, C195, C210, C310 Aux Tanks



Piper AIRFRAME CLIP-NUTS

Wing Tip, Tail Fairing, Wheel Pants

Current Part#	Previous Part#	Type	Max Sheet Thickness	Reach
406-362		#6-32		
SK477-640	477-672 477-673 477-709	#8-32 Surelock	.125	.350
477-655	406-707	#10-32 Locking, Floating	.150	.500
477-816		#8-32 Non-Locking	.750	.350



SKYBOLT Cloth Parts Bag

Keeps fasteners separated and attached to access panels for easy re-installation.

Part# SKYBOLTBAG

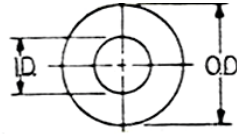
FLAT WASHER AN960 and AN960L SERIES

MIL-S-7952 - Steel - Cadmium plated per QQ-P-416

Stainless 300 Series 18-8

Aluminum Alloy 2024 per QQ-A250/4

Aluminum Alloy, Anodized per MIL-8625 or MIL-C-5541



DASH NUMBERS

Washer Pricing per 100 or .10 ea

Standard Package - 100

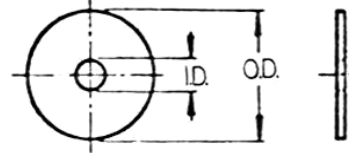
Carbon Steel	CRES	Alum	Alum	SIZE	ID	OD	T
3L	C3L	D3L	PD3L	#3	0.105	0.25	0.016
3	C3	D3	PD3	#3	0.105	0.25	0.032
4L	C4L	D4L	PD4L	#4	0.125	0.312	0.016
4	C4	D4	PD4	#4	0.125	0.312	0.032
6L	C6L	D6L	PD6L	#6	0.149	0.375	0.016
6	C6	D6	PD6	#6	0.149	0.375	0.032
8L	C8L	D8L	PD8L	#8	0.174	0.375	0.016
8	C8	D8	PD8	#8	0.174	0.375	0.032
10L	C10L	D10L	PD10L	#10	0.203	0.438	0.032
10	C10	D10	PD10	#10	0.203	0.438	0.063
416L	C416L	D416L	PD416L	1/4	0.265	0.5	0.032
416	C416	D416	PD416	1/4	0.265	0.5	0.063
516L	C516L	D516L	PD516L	5/16	0.328	0.562	0.032
516	C516	D516	PD516	5/16	0.328	0.562	0.063
616L	C616L	D616L	PD616L	3/8	0.39	0.625	0.032
616	C616	D616	PD616	3/8	0.39	0.625	0.063
716L	C716L	D716L	PD716L	7/16	0.453	0.75	0.032
716	C716	D716	PD716	7/16	0.453	0.75	0.063
816L	C816L	D816L	PD816L	1/2	0.515	0.875	0.032
816	C816	D816	PD816	1/2	0.515	0.875	0.063
916L	C916L	D916L	PD916L	9/16	0.578	1.062	0.032
916	C916	D916	PD916	9/16	0.578	1.062	0.063
1016L	C1016L	D1016L	PD1016L	5/8	0.64	1.188	0.032
1016	C1016	D1016	PD1016	5/8	0.64	1.188	0.063
1216L	C1216L	D1216L	PD1216L	3/4	0.765	1.312	0.032
1216	C1216	D1216	PD1216	3/4	0.765	1.312	0.090

Note: AN960 washers are an SAE equivalent fit.

LARGE AREA FLAT WASHER AN970

Steel - Cadmium Plated per QQ-P-416, Type II, Class 2

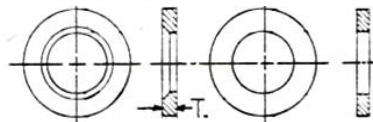
AN970	Bolt Size	I.D.	O.D.	Thickness
-3	#10	.203	.875	.063
-4	1/4	.265	1.125	.063
-5	5/16	.328	1.375	.063
-6	3/8	.390	1.625	.063
-7	7/16	.453	1.812	.109
-8	1/2	.515	2.000	.109
-9	9/16	.578	2.188	.125
-10	5/8	.640	2.375	.125



HIGH STRENGTH PLAIN & CSK WASHER

MS20002 NAS143

Heat Treated to 145,000 PSI Cadmium Plated per QQ-P-416 Type II, Class 2.



COUNTERSUNK	Price	PLAIN	Price	BOLT	
MS20002	NAS143	MS20002	NAS143	SIZE	T
C4	-4C	.39	-4	1/4	.078
C5	-5C	.52	-5	5/16	.078
C6	-6C	.52	-6	3/8	.078
C7	-7C	.52	-7	7/16	.078
C8	-8C	.61	-8	1/2	.078

Note: Sizes continue to 1-1/4 inch bolt size.

SPRING WASHER MS35338 or AN935

Steel - Cadmium Plated per QQ-P-416, Type II, Class 2. CRES - 300 Series



Steel	Stainless		
MS35338	AN935	SIZE	MS35338
-39	-2	#2	-134
-40	-4	#4	-135
-41	-6	#6	-136
-42	-8	#8	-137
-43	-10	#10	-138
-44	-416	1/4	-139
-45	-516	5/16	-140
-46	-616	3/8	-141
-47	-716	7/16	-142
-48	-816	1/2	-143

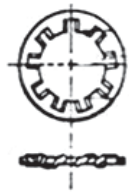
Note: Sizes continue to 1-1/2 inch I.D.

AN-MS-NAS Washers - Continued -

INTERNAL TOOTH LOCKWASHER
MS35333 or AN936A

Steel - Cadmium Plated per QQ-P-416, Type II, Class 2
Corrosion Resistant Steel - 410H Stainless

EXTERNAL TOOTH LOCKWASHER
MS35335 or AN936B



MS35333			Screw or Bolt Size	MS35335		
Steel	AN936A	CRES		Steel	AN936B	CRES
-35	2	-69	#2	-	-	-
-36	4	-70	#4	-29	4	-57
-37	6	-71	#6	-30	6	-58
-38	8	-72	#8	-31	8	-59
-39	10	-73	#10	-32	10	-60
-40	416	-74	1/4	-33	416	-61
-41	516	-75	5/16	-34	516	-62
-42	616	-76	3/8	-35	616	-63
-43	716	-77	7/16	-36	716	-64
-44	816	-78	1/2	-37	816	-65

Sizes continue to 1-1/4 inch I.D. Sizes continue to 1 inch I.D.



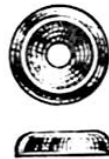
FINISHING WASHER

Countersunk

MS27129 NAS391 #601

Brass - Nickel Plated per QQ-N-290 or Chromium Plated per QQ-C-320

Stainless - 300 Series 18-8



Flush

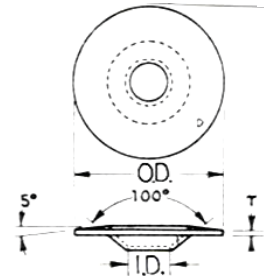
NAS390 #603

Brass - Nickel Plated per QQ-N-290 or Chromium Plated per QQ-C-320



MS27129	NAS391B	#601	MS27129	Screw	NAS390B	#603
Brass	Brass	Brass	Stainless	Size	Brass	Brass
-1	4P	-4	-3	#4	4P	-4
-4	6P	-6	-6	#6	6P	-6
-7	8P	-8	-9	#8	8P	-8
-10	10P	-10	-12	#10	10P	-10

Note: Both washer types may be used with 82 or 100 degree countersunk screws.



100 DEGREE DIMPLED (TINNERMAN) WASHER

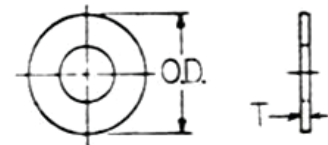
Spring Steel - Heat Treated, Cadmium Plated
Stainless - 300 Series - High Luster Polished

Screw or Bolt Size	OD	ID	T	PART#	TINNERMAN#	STAINLESS	
						PART#	TINNERMAN#
#6	.50	.140-.147	.012	DP1075-12	A3235-012-24A	DP1075-12SS	
#8	.56	.171	.017	DP1080-17	A3134-017-24A	DP1080-17S	A1334SS017-24A
#10	.75	.196	.020	DP1085-20	A3235-020-24A	DP1085-20S	A3235SS020-24A
#10	.75	.196	.028	DP1085-28	A3235-028-24A	DP1085-28S	A3235SS028-24A
1/4	.81	.255-.260	.020	DP1095-20	A3475-020-24A	DP1095-20S	A3475SS020-24A
1/4	.81	.255-.260	.028	DP1095-28	A3475-028-24A	DP1095-28S	A3475SS028-24A

NAS1515 NYLON WASHER 101 NYLON 6/6

NAS549 FIBER WASHER Insulating, Electrical MIL-F-1148-CH

NAS1515	SIZE	ID	OD	T	NAS549
-H-02L	#2	.105	.250	.031	FL3
-H-02	#2	.105	.250	.063	F3
-H-04L	#4	.125	.312	.031	FL4
-H-04	#4	.125	.312	.063	F4
-H-06L	#6	.149	.375	.031	FL6
-H-06	#6	.149	.375	.063	F6
-H-08L	#8	.174	.375	.031	FL8
-H-08	#8	.174	.375	.063	F8
				.090	FH10
-H-3L	#10	.203	.438	.031	FL10
-H-3	#10	.203	.438	.063	F10
-H-4L	1/4	.265	.500	.031	FL416
-H-4	1/4	.265	.500	.063	F416
-H-5L	5/16	.328	.562	.031	FL516
-H-5	5/16	.328	.562	.063	F516
-H-6L	3/8	.390	.625	.031	FL616
-H-6	3/8	.390	.625	.063	F616



WASHER HEAD MACHINE SCREW AN525

Steel - Cadmium Plated 125,000 PSI Tensile Strength

Stainless - Passivated 125,000 PSI

'R' Denotes Cross Recessed (Phillips) Head

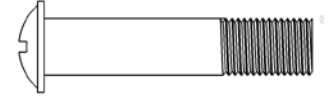
Note: MS27039 is a direct replacement for AN525



AN525 Dash Numbers

Standard Package 100

Length	Grip	Thread	Thread	Thread
		#8-32	#10-32	1/4-28
3/8	1/32	832R6	10R6	416R6
7/16	1/16	832R7	10R7	416R7
1/2	1/8	832R8	10R8	416R8
		Stainless	C10R8	
9/16	5/32	832R9	10R9	416R9
5/8	7/32	832R10	10R10	416R10
		Stainless	C832R10	
11/16	9/32	832R11	10R11	416R11
3/4	11/32	832R12	10R12	416R12
			10R13	
7/8	13/32	832R14	10R14	416R14
1	19/32	832R16	10R16	416R16
1-1/8	23/32	832R18	10R18	416R18
1-1/4	27/32	832R20	10R20	416R20
1-3/8	31/32	832R22	10R22	416R22
1-1/2	1-3/32	832R24	10R24	416R24
1-5/8	1-7/32	832R26	10R26	416R26
1-3/4	1-11/32	832R28	10R28	416R28
1-7/8	1-15/32	832R30	10R30	416R30
2	1-19/32	832R32	10R32	416R32



TRUSS HEAD MACHINE SCREW AN526

Steel - Cadmium Plated 55,000 PSI Tensile Strength

Stainless - 300 Series 18-8 Stainless

'R' Denotes Cross Recessed (Phillips) Head



AN526 Dash Numbers

Standard Package 100

Length	Thread	Thread	Thread	Thread	Thread
	#4-40	#6-32	#8-32	#10-32	1/4-28
1/4	440R4	632R4	832R4	1032R4	
5/16	440R5	632R5	832R5	1032R5	
3/8	440R6	632R6	832R6	1032R6	428R6
7/16	440R7	632R7	832R7	1032R7	428R7
1/2	440R8	632R8	832R8	1032R8	428R8
9/16	440R9	632R9	832R9	1032R9	428R9
5/8	440R10	632R10	832R10	1032R10	428R10
3/4	440R12	632R12	832R12	1032R12	428R12
7/8	440R14	632R14	832R14	1032R14	428R14
1	440R16	632R16	832R16	1032R16	428R16
1-1/8	440R18	632R18	832R18	1032R18	428R18
1-1/4	440R20	632R20	832R20	1032R20	428R20
1-3/8	440R22	632R22	832R22	1032R22	428R22
1-1/2	440R24	632R24	832R24	1032R24	428R24
1-5/8	440R26	632R26	832R26	1032R26	428R26
1-3/4	440R28	632R28	832R28	1032R28	428R28
1-7/8	440R30	632R30	832R30	1032R30	428R30
2	440R32	632R32	832R32	1032R32	428R32
2-1/4	440R36	632R36	832R36	1032R36	428R36
2-1/2	440R40	632R40	832R40	1032R40	428R40
2-3/4	440R44	632R44	832R44	1032R44	428R44
3	440R48	632R48	832R48	1032R48	428R48

FLAT HEAD MACHINE SCREW (100 Degree) AN507 MS24693

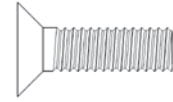


Steel - Cadmium Plated 60,000 PSI Tensile Strength

Brass - Black Oxide Coating 55,000 PSI Tensile Strength

Stainless - 300 Series 18-8 Stainless 80,000 PSI Tensile Strength

MS24693 Dash Numbers				
AN507 Thread			AN507 Thread	
Length	#4-40	MS24693	#6-32	MS24693
3/16	440R3	-1	632R3	-23
1/4	440R4	-2	632R4	-24
5/16	440R5	-3	632R5	-25
3/8	440R6	-4	632R6	-26
7/16	440R7	-5	632R7	-27
1/2	440R8	-6	632R8	-28
5/8	440R10	-7	632R10	-29
3/4	440R12	-8	632R12	-30
7/8	440R14	-9	632R14	-31
1	440R16	-10	632R16	-32
1-1/8	440R18	-11	632R18	-33
1-1/4	440R20	-12	632R20	-34
1-1/2	440R24	-14	632R24	-36
1-3/4			632R28	-38
2			632R32	-40
1-1/2			632R40	-42

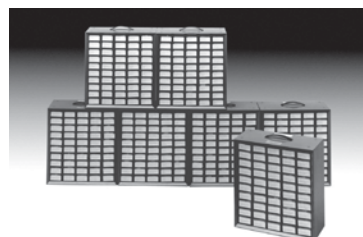


AN507 Thread		AN507 Thread		AN507 Thread		
Length	#8-32	MS24693	#10-32	MS24693	1/4-28	MS24693
3/16						
1/4	832R4	-46	1032R4	-268		
5/16	832R5	-47	1032R5	-269		
3/8	832R6	-48	1032R6	-270	428R6	-292
7/16	832R7	-49	1032R7	-271	428R7	-293
1/2	832R8	-50	1032R8	-272	428R8	-294
5/8	832R10	-51	1032R10	-273	428R10	-295
3/4	832R12	-52	1032R12	-274	428R12	-296
7/8	832R14	-53	1032R14	-275	428R14	-297
1	832R16	-54	1032R16	-276	428R16	-298
1-1/8	832R18	-55	1032R18	-277	428R18	-299
1-1/4	832R20	-56	1032R20	-278	428R20	-300
1-3/8			1032R22	-279	428R22	-301
1-1/2	832R24	-58	1032R24	-280	428R24	-302
1-5/8			1032R26	-281	428R26	-303
1-3/4	832R28	-60	1032R28	-282	428R28	-304
1-7/8			1032R30	-283	428R30	-305
2	832R32	-62	1032R32	-284	428R32	-306
2-1/4			1032R36	-285	428R36	-307
2-1/2	832R40	-64	1032R40	-286	428R40	-308
2-3/4			1032R44	-287	428R44	-309
3	832R48	-66	1032R48	-288	428R48	-310

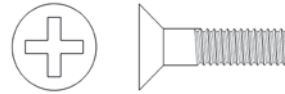
Example part numbers: MS24693-S49 = #8-32 Steel screw, 7/16" long. MS24693-BB30 = #6-32 Brass screw with black Oxide Coating, 3/4" long. (Refer to BRASS INSTRUMENT SCREW CHART for common brass screws). MS24693-C272 = #1032 CRES screw, 1/2" long.

Stainless Assortment Kits

See Pages 125 thru 128



FLAT HEAD MACHINE SCREW 100 Degree STRUCTURAL AN509 MS24694



Steel - Cadmium Plated 125,000 PSI Tensile Strength
Stainless - 300 Series Stainless 85,000 PSI Tensile Strength

MS24694 Dash Numbers									
Length	AN509 Thread			AN509 Thread			AN509 Thread		
	Grip	#8-32	MS24694	Grip	#10-32	MS24694	Grip	1/4-28	MS24694
9/32	3/32	8R4	-S1	7/64	10R4	-S46			
11/32	3/32	8R5	-S2	7/64	10R5	-S47	9/64	416R5	-S92
13/32	3/32	8R6	-S3	7/64	10R6	-S48	9/64	416R6	-S93
15/32	3/32	8R7	-S4	7/64	10R7	-S49	9/64	416R7	-S94
17/32	3/32	8R8	-S5	7/64	10R8	-S50	9/64	416R8	-S95
19/32	5/32	8R9	-S6	7/64	10R9	-S51	9/64	416R9	-S96
21/32	7/32	8R10	-S7	3/16	10R10	-S52	9/64	416R10	-S97
23/32	9/32	8R11	-S8	1/4	10R11	-S53	3/16	416R11	-S98
25/32	11/32	8R12	-S9	5/16	10R12	-S54	1/4	416R12	-S99
27/32	13/32	8R13	-S10	3/8	10R13	-S55	5/16	416R13	-S100
29/32	15/32	8R14	-S11	7/16	10R14	-S56	3/8	416R14	-S101
31/32	17/32	8R15	-S12	1/2	10R15	-S57	7/16	416R15	-S102
1-1/32	19/32	8R16	-S13	9/16	10R16	-S58	1/2	416R16	-S103
1-3/32	21/32	8R17	-S14	5/8	10R17	-S59	9/16	416R17	-S104
1-5/32	23/32	8R18	-S15	11/16	10R18	-S60	5/8	416R18	-S105
1-7/32	25/32	8R19	-S16	3/4	10R19	-S61	11/16	416R19	-S106
1-9/32	27/32	8R20	-S17	13/16	10R20	-S62	3/4	416R20	-S107
1-11/32	29/32	8R21	-S18	7/8	10R21	-S63	13/16	416R21	-S108
1-13/32	31/32	8R22	-S19	15/16	10R22	-S64	7/8	416R22	-S109
1-15/32	1-1/32	8R23	-S20	1	10R23	-S65	15/16	416R23	-S110
1-17/32	1-3/32	8R24	-S21	1-1/16	10R24	-S66	1	416R24	-S111
1-19/32	1-5/32	8R25	-S22	1-1/8	10R25	-S67	1-1/16	416R25	-S112
1-21/32	1-7/32	8R26	-S23	1-3/16	10R26	-S68	1-1/8	416R26	-S113
1-23/32	1-9/32	8R27	-S24	1-1/4	10R27	-S69	1-3/16	416R27	-S114
1-25/32	1-11/32	8R28	-S25	1-5/16	10R28	-S70	1-1/4	416R28	-S115
1-27/32	1-13/32	8R29	-S26	1-3/8	10R29	-S71	1-5/16	416R29	-S116
1-29/32	1-15/32	8R30	-S27	1-7/16	10R30	-S72	1-3/8	416R30	-S117

Example part numbers: MS24694-S24 = Steel screw, 1-23/32 long. MS24694-C65 = CRES screw, 1-15/32" long.

PAN HEAD MACHINE SCREW STRUCTURAL MS27039

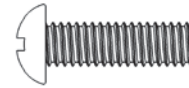


Steel - Cadmium plated 125,000 PSI Tensile Strength
Stainless - A286 Stainless 125,000 PSI Tensile Strength

MS27039 Dash Numbers								
Length	MS27039			MS27039			MS27039	
	Grip	#8-32	MS27039	Grip	#10-32	MS27039	Grip	5/16-24
.281	.032	-0804	.032	-1-04	.032	-4-04	.032	-5-04
.344	.032	-0805	.032	-1-05	.032	-4-05	.032	-5-05
.406	.032	-0806	.032	-1-06	.032	-4-06	.032	-5-06
.469	.032	-0807	.032	-1-07	.032	-4-07	.032	-5-07
.531	.094	-0808	.062	-1-08	.032	-4-08	.032	-5-08
.594	.156	-0809	.125	-1-09	.062	-4-09	.062	-5-09
.656	.219	-0810	.188	-1-10	.125	-4-10	.094	-5-10
.719	.281	-0811	.250	-1-11	.188	-4-11	.156	-5-11
.781	.344	-0812	.312	-1-12	.250	-4-12	.219	-5-12
.844	.406	-0813	.375	-1-13	.312	-4-13	.281	-5-13
.906	.469	-0814	.438	-1-14	.375	-4-14	.344	-5-14
.969	.531	-0815	.500	-1-15	.438	-4-15	.406	-5-15
1.031	.594	-0816	.563	-1-16	.500	-4-16	.469	-5-16
1.094	.656	-0817	.625	-1-17	.563	-4-17	.531	-5-17
1.156	.719	-0818	.688	-1-18	.625	-4-18	.594	-5-18
1.219	.781	-0819	.750	-1-19	.688	-4-19	.656	-5-19
1.281	.844	-0820	.813	-1-20	.750	-4-20	.719	-5-20
1.405	.970	-0822	.938	-1-22	.875	-4-22	.844	-5-22
1.469	1.031	-0823	1.000	-1-23	.938	-4-23	.906	-5-23
1.531	1.094	-0824	1.062	-1-24	1.000	-4-24	.969	-5-24
1.844			1.375	-1-29				

Lengths continue to -0838 (2.406"), -1-48 (3.031"), -4-48 (3.031"), and sizes to 1/2-20.

PAN HEAD MACHINE SCREW - NonStructural



MS35206 AN515 Course STEEL (60,000 PSI) **MS51957** 300 Series STAINLESS (80,000 PSI)
MS35207 AN520 Fine STEEL (60,000 PSI) **MS51958** 300 Series STAINLESS (80,000 PSI)

MS35206 Dash Numbers										
Length	AN515 Thread #2-56 MS35206		AN515 Thread #4-40 MS35206		AN515 Thread #6-32 MS35206		MS51957	AN515 Thread #8-32 MS35206 MS51957		CRES
	MS35206	MS35206	MS35206	MS35206	MS35206	MS35206		MS35206	MS35206	
1/8	-2R2	-201				-224				
3/16	-2R3	-202	-4R3	-212	-6R3	-225				
1/4	-2R4	-203	-4R4	-213	-6R4	-226	-26	-8R4	-241	
5/16	-2R5	-204	-4R5	-214	-6R5	-227		-8R5	-242	
3/8	-2R6	-205	-4R6	-215	-6R6	-228	-28	-8R6	-243	-43
7/16	-2R7	-206	-4R7	-216	-6R7	-229		-8R7	-244	-44
1/2	-2R8	-207	-4R8	-217	-6R8	-230	-30	-8R8	-245	-45
9/16		-320		-323		-327			-331	
5/8	-2R10	-208	-4R10	-218	-6R10	-231	-31	-8R10	-246	-46
3/4	-2R12	-209	-4R12	-219	-6R12	-232		-8R12	-247	
7/8		-210	-4R14	-220	-6R14	-233		-8R14	-248	-48
1		-321	-4R16	-221	-6R16	-234		-8R16	-249	
1-1/8			-4R18	-324	-6R18	-328		-8R18	-332	
1-1/4			-4R20	-222	-6R20	-235		-8R20	-250	
1-3/8			-4R22	-325	-6R22	-329		-8R22	-333	
1-1/2			-4R24	-223	-6R24	-236		-8R24	-251	-51
1-3/4			-4R28	-326	-6R28	-237		-8R28	-252	
1-7/8					-6R30	-361		-8R30	-334	
2					-6R32	-238		-8R32	-253	
2-1/4					-6R36	-330		-8R36	-254	
2-1/2								-8R40	-255	
2-3/4								-8R44	-256	
3								-8R48	-257	

MS35207 Dash Numbers					
Length	AN520 Thread #10-32 MS35207		MS51958	AN520 Thread 1/4-28 MS35207 MS51958	
	MS35207	MS35207		MS35207	MS51958
1/4	-10R4	-259			
5/16	-10R5	-260			
3/8	-10R6	-261		-416R6	-277
7/16	-10R7	-262		-416R7	-278
1/2	-10R8	-263	-63	-416R8	-279
5/8	-10R10	-264	-64	-416R10	-280
3/4	-10R12	-265		-416R12	-281
7/8	-10R14	-266		-416R14	-282
1	-10R16	-267		-416R16	-283
1-1/4	-10R20	-268		-416R20	-284
1-1/2	-10R24	-269		-416R24	-285
1-3/4	-10R28	-270		-416R28	-286
2	-10R32	-271		-416R32	-287
2-1/4	-10R36	-272		-416R36	-288
2-1/2	-10R40	-273		-416R40	-289
2-3/4	-10R44	-274		-416R44	-290
3	-10R48	-275		-416R48	-291

COMMON THREAD SIZES

Bolt or Screw Size	Diameter	Course Thread	Fine (SAE) Thread	Bolt or Screw Size	Diameter	Course Thread	Fine (SAE) Thread
#0	.060	-	80	#10(3/16)	.190	24	32
#1	.073	64	72	1/4	.250	20	28
#2	.086	56	64	5/16	.3125	18	24
#4	.112	40	48	3/8	.375	16	24
#6	.138	32	40	7/16	.4375	14	20
#8	.164	32	36	1/2	.500	13	20

DRILLED FILLISTER HEAD MACHINE SCREWS

MS35265 (AN500) MS35266 (AN501)

Steel - Cadmium Plated 60,000 PSI Tensile Strength



Length	MS35265 Dash Numbers							
	AN500 Thread		AN500 Thread		AN500 Thread		AN500 Thread	
	#2-56	MS35265	#4-40	MS35265	#6-32	MS35265	#8-32	MS35265
.12		-1		-11		-24		-39
.19	A2-3	-2	A4-3	-12	A6-3	-25		-40
.25	A2-4	-3	A4-4	-13	A6-4	-26	A8-4	-41
.31	A2-5	-4	A4-5	-14	A6-5	-27	A8-5	-42
.38	A2-6	-5	A4-6	-15	A6-6	-28	A8-6	-43
.44	A2-7	-6	A4-7	-16	A6-7	-29	A8-7	-44
.50	A2-8	-7	A4-8	-17	A6-8	-30	A8-8	-45
.62	A2-10	-8	A4-10	-18	A6-10	-31	A8-10	-46
.75	A2-12	-9	A4-12	-19	A6-12	-32	A8-12	-47
.88		-10		-20	A6-14	-33	A8-14	-48
1.00				-21	A6-16	-34	A8-16	-49
1.25				-22	A6-20	-35	A8-20	-50
1.50				-23	A6-24	-36	A8-24	-51
1.75					A6-28	-37	A8-28	-52
2.00					A6-32	-38	A8-32	-54

Length	MS35265 Dash Numbers				MS35266 Dash Numbers			
	AN500 Thread		AN500 Thread		AN501 Thread		AN501 Thread	
	#10-24	MS35265	1/4-20	MS35265	#10-32	MS35266	1/4-28	MS35266
.19		-58				-58		
.25	A10-4	-59			A10-4	-59		
.31	A10-5	-60		-76	A10-5	-60	A416-5	-76
.38	A10-6	-61	A416-6	-77	A10-6	-61	A416-6	-77
.44	A10-7	-62	A416-7	-78	A10-7	-62	A416-7	-78
.50	A10-8	-63	A416-8	-79	A10-8	-63	A416-8	-79
.62	A10-10	-64	A416-10	-80	A10-10	-64	A416-10	-80
.75	A10-12	-65	A416-12	-81	A10-12	-65	A416-12	-81
.88	A10-14	-66	A416-14	-82	A10-14	-66	A416-14	-82
1.00	A10-16	-67	A416-16	-83	A10-16	-67	A416-16	-83
1.25	A10-20	-68	A416-20	-84	A10-20	-68	A416-20	-84
1.50	A10-24	-69	A416-24	-85	A10-24	-69	A416-24	-85
1.75	A10-28	-70	A416-28	-86	A10-28	-70	A416-28	-86
2.00	A10-32	-71	A416-32	-87	A10-32	-71	A416-32	-87
2.25		-72		-88		-72		-88
2.50	A10-40	-73	A416-40	-89	A10-40	-73	A416-40	-89
3.75		-74		-90		-74		-90
3.00	A10-48	-75	A416-48	-91	A10-48	-75	A416-48	-91

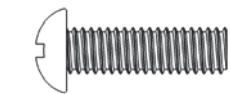
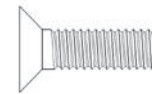
BRASS INSTRUMENT SCREWS MS24693 MS35214 MS35215

Brass per QQ-W-321, QQ-B-613, or QQ-B-626: Black Oxide Coating
55,000 PSI Tensile Strength

FLAT HEAD Phillips

PAN HEAD Phillips

MS24693BB	AN507B	Size	Length	MS35214	Size	Length
6	440R8	#4-40	1/2	-16	#4-40	1/2
10	440R16	#4-40	1	-23	#6-32	3/4
24	632R4	#6-32	1/4	-25	#6-32	3/8
26	632R6	#6-32	3/8	-26	#6-32	7/16
28	632R8	#6-32	1/2	-27	#6-32	1/2
29	632R10	#6-32	5/8	-28	#6-32	5/8
30	632R12	#6-32	3/4	-29	#6-32	3/4
31	632R14	#6-32	7/8	-30	#6-32	7/8
32	632R16	#6-32	1	-31	#6-32	1
34	632R20	#6-32	1-1/4	-32	#6-32	1-1/4
36	632R24	#6-32	1-1/2	-33	#6-32	1-1/2
50	832R8	#8-32	1/2	-42	#8-32	1/2
51	832R10	#8-32	5/8	-46	#8-32	1
52	832R12	#8-32	3/4	-47	#8-32	1-1/4
54	832R16	#8-32	1	-48	#8-32	1-1/2
56	832R20	#8-32	1-1/4	MS35215		
58	832R24	#8-32	1-1/2	-55	#1032	1/2
272	1032R8	#10-32	1/2	-56	#1032	5/8
273	1032R10	#10-32	5/8	-57	#1032	3/4
274	1032R12	#10-32	3/4	-59	#1032	1
276	1032R16	#1032	1	-60	#1032	1-1/4



Note: Several additional MS24693BB and MS35214 sizes in stock

SHEET METAL SCREWS (PK) Self Tapping

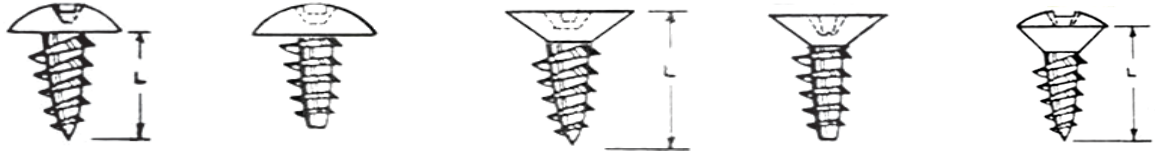
Type A and Type B



Use Type A screws for wood applications. Use B screws for sheet metal applications and Tinnerman nuts.

Note pitch difference between Type A and B screws. Add S to part# for all 300 series stainless screws.

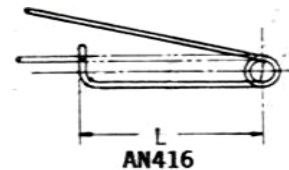
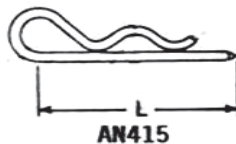
Example: 8RX1/2THAS



SIZE	Length	TRUSS HEAD Type A		TRUSS HEAD AN530 Type B		FLAT HEAD A	FLAT HEAD B		OVAL HEAD
		THA Steel	THAS Stainless	THB Steel	THBS Stainless	FHAS 100deg Stainless	MS21207 NAS548P 100deg Steel	FHBS 100deg Stainless	OHAS 82deg Stainless
#4	1/4	4RX1/4THA	4RX1/4THAS	4RX1/4THB	4RX1/4THBS	4RX1/4FHAS100	MS21207-4-4	4RX1/4FHBS100	4RX1/4OHAS
#4	3/8	4RX3/8THA	4RX3/8THAS	4RX3/8THB	4RX3/8THBS	4RX3/8FHAS100	MS21207-4-6	4RX3/8FHBS100	4RX3/8OHAS
#4	1/2	4RX1/2THA	4RX1/2THAS	4RX1/2THB	4RX1/2THBS	4RX1/2FHAS100	MS21207-4-8	4RX1/2FHBS100	4RX1/2OHAS
#4	5/8	4RX5/8THA	4RX5/8THAS	4RX5/8THB	4RX5/8THBS	4RX5/8FHAS100	MS21207-4-10	4RX5/8FHBS100	4RX5/8OHAS
#6	3/8	6RX3/8THA	6RX3/8THAS	6RX3/8THB	6RX3/8THBS	6RX3/8FHAS100	MS21207-6-6	6RX3/8FHBS100	6RX3/8OHAS
#6	1/2	6RX1/2THA	6RX1/2THAS	6RX1/2THB	6RX1/2THBS	6RX1/2FHAS100	MS21207-6-8	6RX1/2FHBS100	6RX1/2OHAS
#6	5/8	6RX5/8THA	6RX5/8THAS	6RX5/8THB	6RX5/8THBS	6RX5/8FHAS100	MS21207-6-10	6RX5/8FHBS100	6RX5/8OHAS
#6	3/4	6RX3/4THA	6RX3/4THAS	6RX3/4THB	6RX3/4THBS	6RX3/4FHAS100	MS21207-6-12	6RX3/4FHBS100	6RX3/4OHAS
#6	1	6RX1THA	6RX1THAS	6RX1THB	6RX1THBS	6RX1FHAS100	MS21207-6-16	6RX1FHBS100	6RX1OHAS
#6	1-1/2	6RX1-1/2THA	6RX1-1/2THAS	6RX1-1/2THB	6RX1-1/2THBS	6RX1-1/2FHAS100	MS21207-6-24	6RX1-1/2FHBS100	6RX1-1/2OHAS
#8	3/8	8RX3/8THA	8RX3/8THAS	8RX3/8THB	8RX3/8THBS	8RX3/8FHAS100	MS21207-8-6	8RX3/8FHBS100	8RX3/8OHAS
#8	1/2	8RX1/2THA	8RX1/2THAS	8RX1/2THB	8RX1/2THBS	8RX1/2FHAS100	MS21207-8-8	8RX1/2FHBS100	8RX1/2OHAS
#8	5/8	8RX5/8THA	8RX5/8THAS	8RX5/8THB	8RX5/8THBS	8RX5/8FHAS100	MS21207-8-10	8RX5/8FHBS100	8RX5/8OHAS
#8	3/4	8RX3/4THA	8RX3/4THAS	8RX3/4THB	8RX3/4THBS	8RX3/4FHAS100	MS21207-8-12	8RX3/4FHBS100	8RX3/4OHAS
#8	1	8RX1THA	8RX1THAS	8RX1THB	8RX1THBS	8RX1FHAS100	MS21207-8-16	8RX1FHBS100	8RX1OHAS
#8	1-1/4	8RX1-1/4THA	8RX1-1/4THAS	8RX1-1/4THB	8RX1-1/4THBS	8RX1-1/4FHAS100		8RX1-1/4FHBS100	8RX1-1/4OHAS
#8	1-1/2	8RX1-1/2THA	8RX1-1/2THAS	8RX1-1/2THB	8RX1-1/2THBS	8RX1-1/2FHAS100	MS21207-8-24	8RX1-1/2FHBS100	8RX1-1/2OHAS
#8	1-3/4	8RX1-3/4THA	8RX1-3/4THAS	8RX1-3/4THB	8RX1-3/4THBS	8RX1-3/4FHAS100	MS21207-8-28	8RX1-3/4FHBS100	8RX1-3/4OHAS
#8	2	8RX2THA	8RX2THAS	8RX2THB	8RX2THBS	8RX2FHAS100	MS21207-8-32	8RX2FHBS100	8RX2OHAS
#10	1/2	10RX1/2THA	10RX1/2THAS	10RX1/2THB	10RX1/2THBS	10RX1/2FHAS100	MS21207-10-8	10RX1/2FHBS100	10RX1/2OHAS
#10	5/8	10RX5/8THA	10RX5/8THAS	10RX5/8THB	10RX5/8THBS	10RX5/8FHAS100	MS21207-10-10	10RX5/8FHBS100	10RX5/8OHAS
#10	3/4	10RX3/4THA	10RX3/4THAS	10RX3/4THB	10RX3/4THBS	10RX3/4FHAS100	MS21207-10-12	10RX3/4FHBS100	10RX3/4OHAS
#10	1	10RX1THA	10RX1THAS	10RX1THB	10RX1THBS	10RX1FHAS100	MS21207-10-16	10RX1FHBS100	10RX1OHAS
#10	1-1/2	10RX1-1/2THA	10RX1-1/2THAS	10RX1-1/2THB	10RX1-1/2THBS	10RX1-1/2FHAS100	MS21207-10-24	10RX1-1/2FHBS100	10RX1-1/2OHAS
#10	1-3/4	10RX1-3/4THA	10RX1-3/4THAS	10RX1-3/4THB	10RX1-3/4THBS	10RX1-3/4FHAS100	MS21207-10-28	10RX1-3/4FHBS100	10RX1-3/4OHAS
#10	2	10RX2THA	10RX2THAS	10RX2THB	10RX2THBS	10RX2FHAS100	MS21207-10-32	10RX2FHBS100	10RX2OHAS
1/4	5/8	12RX5/8THA	12RX5/8THAS	12RX5/8THB	12RX5/8THBS	12RX5/8FHAS100	MS21207-14-10	12RX5/8FHBS100	12RX5/8OHAS
1/4	3/4	12RX3/4THA	12RX3/4THAS	12RX3/4THB	12RX3/4THBS	12RX3/4FHAS100	MS21207-14-12	12RX3/4FHBS100	12RX3/4OHAS
1/4	1	12RX1THA	12RX1THAS	12RX1THB	12RX1THBS	12RX1FHAS100	MS21207-14-16	12RX1FHBS100	12RX1OHAS

NOTE: *Use in place of AN531 82 degree screws. When ordering SMS (sheet metal screws) indicate alternate lengths acceptable. Also indicate if stainless screws are acceptable as a substitute for steel screws.

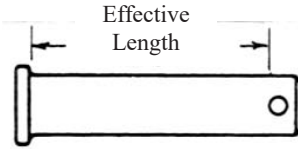
LOCKING PINS



Part#	Wire Dia	Material	L
AN415-2	.080	CRES	1-15/16
AN415-3	.0295	CRES	19/32
AN416-1	.051	Steel	1-1/16
AN416-2	.041	Steel	3/4
WW11	.125	Steel	2-9/16
WW16	.125	Steel	1-15/16

CLEVIS PIN MS20392 (AN392 thru AN396)

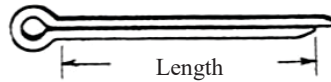
Also Supersedes AN400, AN404, and AN406
 Steel Alloy - 4037, 4130, or 8630 - Cadmium Plated.
 CRES - PH13-8Mo, Passivated and Chrome Plated.
 Titanium - Alloy, TI-6AL-4V. Standard Package - 10



Effective Length	1/8 (.125) Diameter		3/16 (.188) Diameter		1/4 (.250) Diameter	
	AN392	MS20392	AN393	MS20392	AN394	MS20392
7/32	-7	-1C7	-7	-2C7		
9/32	-9	-1C9	-9	-2C9		
11/32	-11	-1C11	-11	-2C11	-11	-3C11
13/32	-13	-1C13	-13	-2C13	-13	-3C13
15/32	-15	-1C15	-15	-2C15	-15	-3C15
17/32	-17	-1C17	-17	-2C17	-17	-3C17
19/32	-19	-1C19	-19	-2C19	-19	-3C19
21/32	-21	-1C21	-21	-2C21	-21	-3C21
23/32	-23	-1C23	-23	-2C23	-23	-3C23
25/32	-25	-1C25	-25	-2C25	-25	-3C25
27/32	-27	-1C27	-27	-2C27	-27	-3C27
29/32	-29	-1C29	-29	-2C29	-29	-3C29
31/32	-31	-1C31	-31	-2C31	-31	-3C31
1-1/32	-33	-1C33	-33	-2C33	-33	-3C33
1-3/32	-35	-1C35	-35	-2C35	-35	-3C35
1-5/32	-37	-1C37	-37	-2C37	-37	-3C37
1-7/32	-39	-1C39	-39	-2C39	-39	-3C39
1-9/32	-41	-1C41	-41	-2C41	-41	-3C41
1-11/32	-43	-1C43	-43	-2C43	-43	-3C43
1-13/32	-45	-1C45	-45	-2C45	-45	-3C45
1-15/32	-47	-1C47	-47	-2C47	-47	-3C47
1-17/32	-49	-1C49	-49	-2C49	-49	-3C49
1-19/32	-51	-1C51	-51	-2C51	-51	-3C51
1-21/32	-53	-1C53	-53	-2C53	-53	-3C53
1-23/32	-55	-1C55	-55	-2C55	-55	-3C55
1-25/32	-57	-1C57	-57	-2C57	-57	-3C57
1-27/32	-59	-1C59	-59	-2C59	-59	-3C59
1-29/32	-61	-1C61	-61	-2C61	-61	-3C61
1-31/32	-63	-1C63	-63	-2C63	-63	-3C63
2-1/32	-65	-1C65	-65	-2C65	-65	-3C65
2-3/32	-67	-1C67	-67	-2C67	-67	-3C67
2-5/32			-69	-2C69	-69	-3C69
2-7/32			-71	-2C71	-71	-3C71
2-9/32			-73	-2C73	-73	-3C73
2-11/32			-75	-2C75	-75	-3C75
2-13/32			-77	-2C77	-77	-3C77
2-15/32			-79	-2C79	-79	-3C79
2-17/32			-81	-2C81	-81	-3C81
2-19/32			-83	-2C83	-83	-3C83
2-21/32			-85	-2C85	-85	-3C85
2-23/32			-87	-2C87	-87	-3C87
2-25/32			-89	-2C89	-89	-3C89
2-27/32			-91	-2C91	-91	-3C91
2-29/32			-93	-2C93	-93	-3C93
2-31/32			-95	-2C95	-95	-3C95
3-1/32					-97	-3C97
Steel CRES Titanium Use Washer Use Cotter Pin	Double Shear Strength		Double Shear Strength		Double Shear Strength	
	1,840 LBS		4,140 LBS		7,360 LBS	
	3,080		6,900		12,280	
	2,340		5,240		9,320	
	AN960-4		AN960-10		AN960-416	
MS24665-130 (Steel)		MS24665-130 (Steel)		MS24665-130 (Steel)		
MS24665-149 (CRES)		MS24665-149 (CRES)		MS24665-149 (CRES)		

COTTER PIN MS24665 (AN380 and AN381)

Steel - Cadmium Plated per QQ-P-416, Type II, Class 3
 CRES - 300 Series Stainless Steel



Standard Package - 100

Diameter	Length	Cadmium Plated Steel		Stainless Steel		Hole Size Recommended	Use with:*	
		AN380	MS24665	AN381	MS24665		AN310/320	MS20392
1/32 (.031)	3/8	-1-1	-3	-1-6	-20	(.047)		
	1/2	-1-2	-5	-1-8	-22			
	3/4	-1-3	-7	-1-12	-24			
	1	-1-4	-9	-1-16	-26			
	1-1/4	-1-5	-10	-1-20	-27			
	1-1/2	-1-6	-11	-1-24	-28			
1/16 (.062)	3/8	-2-1	-130	-2-6	-149	(.078)	-3 -4,-5	-1,-2,-3
	1/2	-2-2	-132	-2-8	-151			
	3/4	-2-3	-134	-2-12	-153			
	1	-2-4	-136	-2-16	-155			
	1-1/4	-2-5		-2-20	-157			
	1-1/2	-2-6	-140	-2-24	-159			
	1-3/4	-2-7	-142	-2-28	-161			
	2	-2-8	-143	-2-32	-162			
	2-1/2	-2-10	-144	-2-40	-163			
	3	-2-12	-145	-2-48	-164			
3/32 (.094)	1/2	-3-2	-281	-3-8	-298	(.109)	-6,-7,-8	-4,-5
	3/4	-3-3	-283	-3-12	-300			
	1	-3-4	-285	-3-16	-302			
	1-1/4	-3-5	-287	-3-20	-304			
	1-1/2	-3-6	-289	-3-24	-306			
	1-3/4	-3-7	-291	-3-28	-308			
	2	-3-8	-292	-3-32	-309			
	2-1/2	-3-10	-294	-3-40	-311			
3	-3-12	-295	-3-48	-312				
1/8 (.125)	1/2	-4-2	-349	-4-8	-366	(.141)	-9,-10 -12	
	3/4	-4-3	-351	-4-12	-368			
	1	-4-4	-353	-4-16	-370			
	1-1/4	-4-5	-355	-4-20	-372			
	1-1/2	-4-6	-357	-4-24	-374			
	1-3/4	-4-7	-359	-4-28	-376			
	2	-4-8	-360	-4-32	-377			
	2-1/2	-4-10	-362	-4-40	-379			
3	-4-12	-363	-4-48	-380				
5/32 (.156)	1/2	-5-2	-417	-5-8	-435	(.172)		
	3/4	-5-3	-418	-5-12	-436			
	1	-5-4	-419	-5-16	-437			
	1-1/4	-5-5	-421	-5-20	-439			
	1-1/2	-5-6	-423	-5-24	-441			
	1-3/4	-5-7	-425	-5-28	-443			
	2	-5-8	-426	-5-32	-444			
	2-1/4	-5-9	-427	-5-36	-445			
	2-1/2	-5-10	-428	-5-40	-446			
	3	-5-12	-430	-5-48	-448			
	3-1/2	-5-14	-431	-5-56	-449			
4	-5-16	-432	-5-64	-450				
3/16 (.188)	3/4	-6-3	-490	-6-12	-508	(.203)		
	1	-6-4	-491	-6-16	-509			
	1-1/4	-6-5	-493	-6-20	-511			
	1-1/2	-6-6	-495	-6-24	-513			
	1-3/4	-6-7	-497	-6-28	-515			
	2	-6-8	-498	-6-32	-516			
	2-1/2	-6-10	-500	-6-40	-518			
	3	-6-12	-502	-6-48	-520			
	3-1/2	-6-14	-503	-6-56	-521			
	4	-6-16	-504	-6-64	-522			

Note: *Reference MS33540

CLECO FASTENERS



C" SERIES CLECO

The "C" series fasteners are the standard (button) plunger type "cleco". Plier operated, spring loaded with a strong, durable steel, plated body. Designed for sheets that require precise holding of the material while other operations are completed.



Part#	Color Code	G(grip)	Dia	Drill Size
C-3/32	zinc		3/32	#40
C-1/8	copper	0-1/4"	1/8	#30
C-5/32	black		5/32	#20
C-3/16	brass		3/16	#10

SIDE GRIP CLAMPS

Side grip clamps are designed to clamp at the edge of the work area. Ideal for holding workpieces of all types, particularly during bonding, sealing, or glueing operations.

- Plier operated
- Spring loaded
- Constant clamping force
- Use C-200 installation plier



Part#	Grip	Reach	Length
123SG	0-1/2"	1/2"	2-3/16"
124SG	0-3/4"	1/2"	2-7/16"
125SG	0-1/2"	1"	2-3/16"
126SG	0-3/4"	1"	2-7/16"

WINGED SERIES CLAMPS

The Winged type Cleco allows wide ranges of clamping thickness and the ability to apply a desired clamping pressure.

Part#	Alternate#	G(grip)	Diameter
WNX-3/32	KWN-FW-3/32		3/32
WNX-18	KWN-FW-1/8	0-1/2"*	1/8
WNX-5/32	KWN-FW-5/32		5/32
WNX-3/16	KWN-FW-3/16		3/16
WNX-1/4	KWN-FW-1/4		1/4

*Clamps with greater grip range in stock.



DRILL STOPS



Designed as a versatile aid that helps eliminate drill bit breakage and sure stop to regulate hole depth.

- Locks in drill with set screws
- Unique rounded face eliminates surface marring.
- Color coded and permanently marked by size.

Part#	Color Code	Drill Size
CLDS-50	Black	#50
CLDS-40	Zinc	#40
CLDS-30	Copper	#30
CLDS-28	Zinc	#28
CLDS-21	Black	#21
CLDS-20	Zinc	#20
CLDS-12	Brass	#12
CLDS-10	Brass	#10
CLDS-1/4	Copper	1/4
CLDS-5/16	Black	5/16

INSTALLATION TOOLS - Model C-200

For installing all Cleco plier operated fasteners.



HEAVY DUTY JOBBERS LENGTH DRILL BITS
AIRCRAFT EXTENSION DRILLS (135 Deg)
LEFT HAND DRILLS (118 Deg)

(135 Deg)



High Speed Steel, Surface Treated, 135Deg Split Point

Originally designed to drill cotter pin holes, these heavy duty drills are suitable for drilling high tensile strength steels. The 135Deg split point is self centering, and reduces "walking" at the drill point.

Made in USA



R18HD Wire Sizes Standard Package 12				R10HD FRACTIONAL SIZES Standard Package 12 (6ea 19/64 to 1/2)		
Part#	Dia	Dec Equiv	Rivet Size	Part#	Dia	Dec Equiv
18454	#54	.0550		10404	1/16	.0625
18453	#53	.0595		10405	5/64	.0781
18452	#52	.0635		10406	3/32	.0938
18451	#51	.0679		10407	7/64	.1094
18450	#50	.0700		10408	1/8	.1250
18449	#49	.0730		10409	9/64	.1406
18448	#48	.0760		10410	5/32	.1562
18447	#47	.0785		10411	11/64	.1719
18446	#46	.0810		10412	3/16	.1875
18445	#45	.0820		10413	13/64	.2031
18444	#44	.0860		10414	7/32	.2188
18443	#43	.0890		10415	15/64	.2344
18442	#42	.0935		10416	1/4	.2500
18441	#41	.0960	3/32 Nom	10417	17/64	.2656
18440	#40	.0980		10418	9/32	.2812
18439	#39	.0995		10419	19/64	.2969
18438	#38	.1015		10420	5/16	.3125
18437	#37	.1040		10421	21/64	.3281
18436	#36	.1065		10422	11/32	.3438
18435	#35	.1100		10423	23/64	.3594
18434	#34	.1110		10424	3/8	.3750
18433	#33	.1130		10425	25/64	.3906
18432	#32	.1160		10426	13/32	.4062
18431	#31	.1200		10427	27/64	.4219
18430	#30	.1285	1/8 Nom	10428	7/16	.4375
18429	#29	.1360		10429	29/64	.4531
18428	#28	.1405		10430	15/32	.4688
18427	#27	.1440	1/8 O/S	10431	31/64	.4844
18426	#26	.1470		10432	1/2	.5000
18425	#25	.1495		10433	33/64	.5156
18424	#24	.1520		10434	17/32	.5312
18423	#23	.1540		10435	35/64	.5469
18422	#22	.1570		10436	9/16	.5625
18421	#21	.1590		10437	37/64	.5781
18420	#20	.1610	5/32 Nom	10438	19/32	.5937
18419	#19	.1660		10439	39/64	.6094
18418	#18	.1695		10440	5/8	.6250
18417	#17	.1730		10441	41/64	.6406
18416	#16	.1770	5/32 O/S	10442	21/32	.6562
18415	#15	.1800		10443	43/64	.6719
18414	#14	.1820		10444	11/16	.6875
18413	#13	.1850		10445	45/64	.7031
18412	#12	.1890		10446	23/32	.7187
18411	#11	.1910		10447	47/64	.7344
18410	#10	.1935	3/16 Nom	10448	3/4	.7500
18409	#9	.1960		10449	49/64	.7656
18408	#8	.1990		10450	25/32	.7812
18407	#7	.2010		10451	51/64	.7969
18406	#6	.2040		10452	13/16	.8125
18405	#5	.2055	3/16 O/S	10453	53/64	.8281
18404	#4	.2090		10454	27/32	.8438
18403	#3	.2130		10455	55/64	.8594
18402	#2	.2210		10456	7/8	.8750
18401	#1	.2230		10457	57/64	.8906



Unibit Step Drills

Part#	Hole Sizes	Steps	Sizes
Unibit-1	13	32nds	1/8-1/2
Unibit-4	12.00	1/8	3/16-7/8

6" Extension Drills - Add -6 to Part#. 12" Extension Drills - Add -12 to Part#. Left Hand Drills - Add -L to Part#.

SOLID RIVETS - Aluminum MS20470 and MS20426



Type A = 1100 Soft, Low strength. Type AD = 2117-t4 Medium Strength, 26,000 PSI*. Type B = 5056-H32, for magnesium Alloys, 24,000PSI. Type DD = 2024-T4, High Strength, 37,000PSI. Type D = 2017-T4, High Shear Strength, 33,000PSI. Type E = 7050-T73, High Shear, High Temp., 41,000PSI. Type K = 2219-T81, High Strength, High Temp., 32,000PSI. Type T = Titanium, 45CB, Ultimate Strength and Temp., 50,000PSI Note: *Undriven Shear Strength.

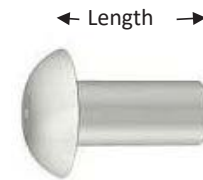
Common Rivet Diameter/Length Chart

MS20470

Universal Head - Approximate Pieces Per Pound

LENGTH	DASH#	Nominal Diameter Dash#							
		1/16	3/32	1/8	5/32	3/16	1/4	5/16	3/8
		0.062	0.094	0.125	0.156	0.187	0.250	0.312	0.375
		-2	-3	-4	-5	-6	-8	-10	-12
1/16	-1	24390	8457	3968					
3/32	-1.5	19608	7194	3436	1908	1261			
1/8	-2	16667	6250	3040	1712	1136			
3/16	-3	12658	4926	2457	1418	952	427		
1/4	-4	10204	4049	2066	1212	813	377	214	149
5/16	-5	8547	3436	1783	1057	714	338	193	135
3/8	-6	7353	2994	1565	935	633	306	177	123
7/16	-7	6452	2646	1397	840	571	279	163	114
1/2	-8	5747	2375	1261	763	521	257	151	105
9/16	-9	5181	2151	1148	699	476	238	141	98
5/8	-10	5717	1969	1055	645	441	222	132	92
11/16	-11	4329	1811	971	599	408	207	124	86
3/4	-12	4000	1681	909	559	382	195	117	81
7/8	-14	3472	1466	794	493	337	174	105	73
1	-16	3067	1300	709	441	301	157	95	66
1-1/8	-18	2488	1168	637	398	273	143	87	61
1-1/4	-20	2092	1059	581	364	249	132	81	56
1-3/8	-22		971	535	334	229	122	75	52
1-1/2	-24		893	493	310	212	113	69	49
1-3/4	-28		775	427	270	185	99	61	43
2	-32		680	377	238	163	88	55	38
2-1/4	-36			338	214	147	80	50	34
2-1/2	-40			306	194	133	73	45	31
2-3/4	-44			279	177	122	67	41	29
3	-48			257	163	112	62	38	27
3-1/4	-52				151	104	57	36	25
3-1/2	-56				141	97	53	33	23
3-3/4	-60				132	91	50	31	22
4	-64				124	85	47	30	21
4-1/4	-68					81	45	28	20
4-1/2	-72					76	42	27	19
4-3/4	-76					72	40	25	18
5	-80					69	38	24	17
5-1/4	-84						36	23	16
5-1/2	-88						35	22	15

All Rivets sold by pound or 100 pc Count. To order by 100 pc, add '100' to part number (MS20470-4-3 100)



MS20470
NAS1242 (1/64 Oversize)

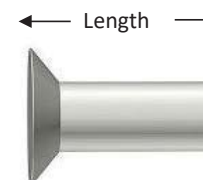
Typical Part#
MS20470AD4-4

MS20426

NAS1097

100 Deg Countersunk Head - Approximate Pieces per Pound

LENGTH	DASH#	Nominal Diameter Dash#							
		-2	-3	-4	-5	-6	-8	-10	-12
1/8	-2	22727							
3/16	-3	15873	6211						
1/4	-4	12195	4901	2754	1677	1094			
5/16	-5	9900	4032	2267	1394	917			
3/8	-6	8333	3424	1930	1194	793	413	268	
7/16	-7	7194	2976	1677	1043	699	366	239	
1/2	-8	6329	2638	1485	925	621	328	215	140
9/16	-9	5649	2364	1331	833	561	298	194	127
5/8	-10	5102	2141	1207	757	512	273	178	117
11/16	-11	4651	1956	1103	694	469	251	164	108
3/4	-12	4273	1805	1017	641	434	234	152	101
7/8	-14	3676	1557	877	555	378	204	132	88
1	-16	3225	1371	775	490	334	181	117	79
1-1/8	-18	2873	1223	689	438	299	163	105	71
1-1/4	-20	2577	1106	625	395	271	148	95	65
1-3/8	-22		1008	568	361	248	135	88	59
1-1/2	-24		925	523	332	228	125	81	55
1-3/4	-28		798	444	286	197	108	70	47
2	-32		701	392	251	173	95	61	42
2-1/2	-40			315	200	139	77	50	34
3	-48			264	168	117	64	42	29
3-1/2	-56				145	100	55	35	24



MS20426
NAS1241 (1/64 Oversize)

Typical Part#
MS20426AD5-4

NON-STRUCTURAL BLIND RIVETS



Commercial Series

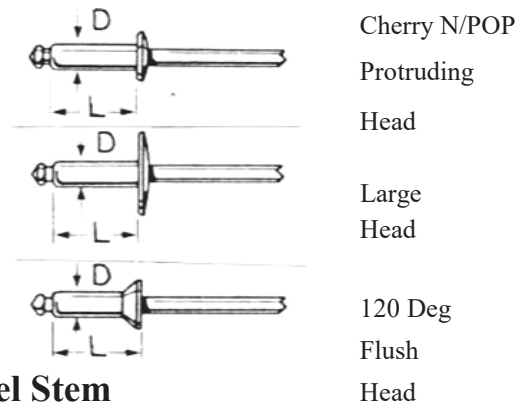
CHERRY N and AFC type rivets are very similar to USM 'POP' rivets. CHERRY N conforms to IFI-114 Standards, are nonstructural, break mandrel rivets. AVEX rivets are similar to both POP and Cherry N, but only available with a steel mandrel. AVEX rivets are designed slightly oversize in diameter.

Some homebuilt designs utilize Cherry Q rivets, a semi-structural self-plugging rivet with sealing capability. Only limited sizes and types are available. USM POP ADH series rivets are similar to Cherry BSPQ, but do not have a mechanically locked stem and is not a true substitute.

POP Rivets - Non-Structural Blind Rivets

Non Structural Blind Rivets

See next page for Part Numbers

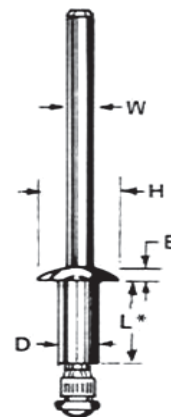
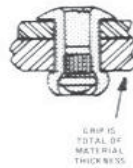


Cherry Q Rivets - Semi-Structural Blind Rivets

5056 Aluminum Sleeve Mechanically Locked Steel Stem

Commercial Grade, Semi-Structural, Self Plugging, Sealing

Part#	Grip Range	Shear Lbs	Tensile Lbs
BSPQ41	.025-.062	350	325
BSPQ42	.063-.125	350	325
BSPQ43	.126-.187	350	325
BSPQ44	.188-.250	350	325



Cherry Nut Plate Rivet

Part#	Head	Dia	Grip
CCR264SS-3-1	Csk	3/32	.062
CCR264SS-3-2	Csk	3/32	.125
CCR264SS-3-3	Csk	3/32	.187
CCR264SS-3-4	Csk	3/32	.250
CCR274SS-3-1	Prot	3/32	.062
CCR274SS-3-2	Prot	3/32	.125
CCR274SS-3-3	Prot	3/32	.187
CCR274SS-3-4	Prot	3/32	.250

Blind Rivet Backing Washers

100-Pc Bag - Aluminum

Part#	Rivet	ID	OD	Thickness
SK-BW18	1/8	.133	.375	.062
SK-BW532	5/32	.165	.437	.062
SK-BW316	3/16	.197	.500	.062



GRIP

STAINLESS

STEEL/STEEL

ALUM/STEEL

ALUM/ALUM*

HEAD

DIA	STYLE	POP	CHERRY	AFC	POP	CHERRY	AFC	POP	CHERRY	AFC	POP	CHERRY	AFC	MIN	MAX	
3/32	DOME	AD32ABS	AAP32	ABA32	AD32BS	BSP32	ABS32	SD32BS	SSP32	SBS32	SD32BS	SSP32	SBS32	0.031	0.125	
		AD34ABS	AAP34	ABA34	AD32BS	BSP34	ABS34	SD34BS	SSP34	SBS34	SD34BS	SSP34	SBS34	0.126	0.250	
			AAP36			BSP36				SSP36					0.251	0.375
1/8	DOME	AD41ABS	AAP41	ABA41	AD41BS	BSP41	ABS41	SD41BS	SSP41	SBS41	SD41BS	SSP41	SBS41	0.031	0.062	
		AD42ABS	AAP42	ABA42	AD42BS	BSP42	ABS42	SD42BS	SSP42	SBS42	SD42BS	SSP42	SBS42	0.063	0.125	
		AD43ABS	AAP43	ABA43	AD43BS	BSP43	ABS43	SD43BS	SSP43	SBS43	SD43BS	SSP43	SBS43	0.126	0.187	
5/32	DOME	AD52ABS	AAP52	ABA52	AD52BS	BSP52	ABS52	SD52BS	SSP52	SBS52	SD52BS	SSP52	SBS52	0.063	0.125	
		AD53ABS	AAP53	ABA53	AD53BS	BSP53	ABS53	SD53BS	SSP53	SBS53	SD53BS	SSP53	SBS53	0.126	0.187	
		AD54ABS	AAP54	ABA54	AD54BS	BSP54	ABS54	SD54BS	SSP54	SBS54	SD54BS	SSP54	SBS54	0.188	0.250	
		AD56ABS	AAP56	ABA56	AD56BS	BSP56	ABS56	SD56BS	SSP56	SBS56	SD56BS	SSP56	SBS56	0.251	0.375	
		AD58ABS	AAP58	ABA58	AD58BS	BSP58	ABS58	SD58BS	SSP58	SBS58	SD58BS	SSP58	SBS58	0.376	0.500	
			AAC54	ACA54	AK54BS	BSC54	ACS54	SK54BS	SSC54	SBS54	SK54BS	SSC54	SBS54	0.501	0.625	
			AAC56	ACA56	AK56BS	BSC56	ACS56	SK56BS	SSC56	SBS56	SK56BS	SSC56	SBS56	0.188	0.250	
			AAL54	ABA54L	AD54BSLF	BSL54	ABS54L	SD54BSLF	SSL54	ABS54L	AD54BSLF	BSL54	ABS54L	SSL54	0.188	0.250
			AAL56			BSL56			SSL56			SSL56		SSL56	0.251	0.375
			AAL58			BSL58			SSL58			SSL58		SSL58	0.376	0.500
3/16	DOME	AD62ABS	AAP62	ABA62	AD62BS	BSP62	ABS62	SD62BS	SSP62	SBS62	SD62BS	SSP62	SBS62	0.063	0.125	
		AD64ABS	AAP64	ABA64	AD64BS	BSP64	ABS64	SD64BS	SSP64	SBS64	SD64BS	SSP64	SBS64	0.126	0.250	
		AD66ABS	AAP66	ABA66	AD66BS	BSP66	ABS66	SD66BS	SSP66	SBS66	SD66BS	SSP66	SBS66	0.251	0.375	
LARGE FLANGE	FLANGE	AD68ABS	AAP68	ABA68	AD68BS	BSP68	ABS68	SD68BS	SSP68	SBS68	SD68BS	SSP68	SBS68	0.376	0.500	
		AD610ABS	AAP610	ABA610	AD610BS	BSP610	ABS610	SD610BS	SSP610	SBS610	SD610BS	SSP610	SBS610	0.501	0.625	
		AD612ABS	AAP612	ABA612	AD612BS	BSP612	ABS612	SD612BS	SSP612	SBS612	SD612BS	SSP612	SBS612	0.626	0.750	
		AD64ABS	AAL64	ABA64L	AD64BSLF	BSL64	ABS64L	SD64BSLF	SSL64	ABS64L	AD64BSLF	BSL64	ABS64L	SSL64	0.126	0.250
		AD66ABS	AAL66	ABA66L	AD66BSLF	BSL66	ABS66L	SD66BSLF	SSL66	ABS66L	AD66BSLF	BSL66	ABS66L	SSL66	0.251	0.375
		AD68ABS	AAL68	ABA68L	AD68BSLF	BSL68	ABS68L	SD68BSLF	SSL68	ABS68L	AD68BSLF	BSL68	ABS68L	SSL68	0.376	0.500
		AD610ABS	AAL610	ABA610L	AD610BSLF	BSL610	ABS610L	SD610BSLF	SSL610	ABS610L	AD610BSLF	BSL610	ABS610L	SSL610	0.501	0.625
		AD612ABS	AAL612	ABA612L	AD612BSLF	BSL612	ABS612L	SD612BSLF	SSL612	ABS612L	AD612BSLF	BSL612	ABS612L	SSL612	0.626	0.750

CherryMax Rivets



Traditional “Cherry Rivets” were originally designed with a knob stem, the most commonly used was the CR162/CR163 MS Series. These rivets require special tooling to install and leave a protruding break stem that must be trimmed. Cherry developed the CR9162/CR9163 MS Series rivet to replace the knob stem, thus simple pulling tools could be used. The CherryLock rivet was developed to gain strength ratings equivalent to solid AD rivets. The CherryLock rivet required double action pulling tools to install. CherryLock rivets are all oversize diameters. The CherryMax rivet was developed to replace the CherryLock, required simple pulling tools to install, and are also available in Nominal and Oversize shank. The Oversize CherryMax has strength ratings that meet or exceed solid AD rivets. The drawback to the CherryMax is removal. The Break Stem is constructed of 8740 Alloy Steel and is very difficult to drill out. However, by drilling the head center, a punch can drive the break stem out allowing the shank to be drilled and removed.

Considerations for using Cherry Blind Rivets

- 1) CherryMax is a structural rivet, Cherry Q or POP rivets are not.
- 2) Panels should be clamped before installing CherryMax rivets as they are not designed for excessive panel “takeup”.
- 3) CherryMax can be substituted for specifications calling for CR162/CR163 or CherryLock.
- 4) CherryMax is an approved substitute for solid AD rivets in a structural application

Skybolt only supplies Factory New Cherry products with full traceability, no surplus, no sweepings, no aftermarket parts.

CherryMax

5056 Aluminum Sleeve 8740 Alloy Steel Stem

Common Sizes

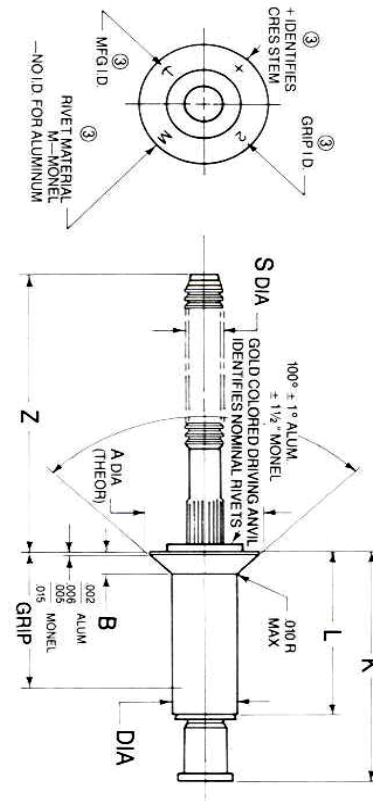
100 Degree Flush Head - Nominal Shank (.126) #30 Drill

Part#	Size	Grip Limits	Shear Lbs	Tensile Lbs
CR3212-4-2	1/8	.063-.125	411	285
CR3212-4-3	1/8	.126-.187	531	285
CR3212-4-4	1/8	.188-.250	651	285
CR3212-4-5	1/8	.251-.312	664	285
CR3212-5-2	5/32	.065-.125	-	445
CR3212-5-3	5/32	.126-.187	714	445
CR3212-5-4	5/32	.188-.250	862	445
CR3212-5-5	5/32	.251-.312	1012	445
CR3212-5-6	5/32	.313-.375	1030	445

100 Degree Flush Head - Oversize Shank (.140) #27 Drill

Part#	Size	Grip Limits	Shear Lbs	Tensile Lbs
CR3242-4-2	1/8	.063-.125	480	345
CR3242-4-3	1/8	.126-.187	614	345
CR3242-4-4	1/8	.188-.250	741	345
CR3242-4-5	1/8	.251-.312	814	345
CR3242-5-2	5/32	.065-.125	-	530
CR3242-5-3	5/32	.126-.187	815	530
CR3242-5-4	5/32	.188-.250	977	530
CR3242-5-5	5/32	.251-.312	1137	530
CR3242-5-6	5/32	.313-.375	1245	530

Larger Sizes in stock



CherryMax

Common Sizes

Universal Head - Nominal Shank (.126) #30 Drill

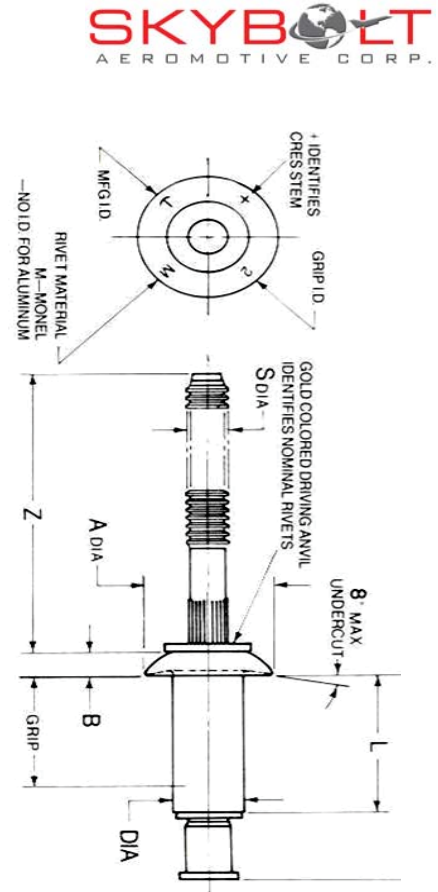
Part#	Size	Grip Limits	Shear Lbs	Tensile Lbs
CR3213-4-1	1/8	.025-.062	-	285
CR3213-4-2	1/8	.063-.125	411	285
CR3213-4-3	1/8	.126-.187	531	285
CR3213-4-4	1/8	.188-.250	651	285
CR3213-4-5	1/8	.251-.312	664	285
CR3213-5-1	5/32	.031-.062	-	445
CR3213-5-2	5/32	.065-.125	-	445
CR3213-5-3	5/32	.126-.187	714	445
CR3213-5-4	5/32	.188-.250	862	445
CR3213-5-5	5/32	.251-.312	1012	445
CR3213-5-6	5/32	.313-.375	1030	445

Larger Sizes in stock

Universal Head - Oversize Shank (.140) #27 Drill

Part#	Size	Grip Limits	Shear Lbs	Tensile Lbs
CR3243-4-1	1/8	.025-.062	-	345
CR3243-4-2	1/8	.063-.125	480	345
CR3243-4-3	1/8	.126-.187	614	345
CR3243-4-4	1/8	.188-.250	741	345
CR3243-4-5	1/8	.251-.312	814	345
CR3243-5-1	5/32	.031-.062	-	530
CR3243-5-2	5/32	.065-.125	-	530
CR3243-5-3	5/32	.126-.187	815	530
CR3243-5-4	5/32	.188-.250	977	530
CR3243-5-5	5/32	.251-.312	1137	530
CR3243-5-6	5/32	.313-.375	1245	530

Larger Sizes in stock

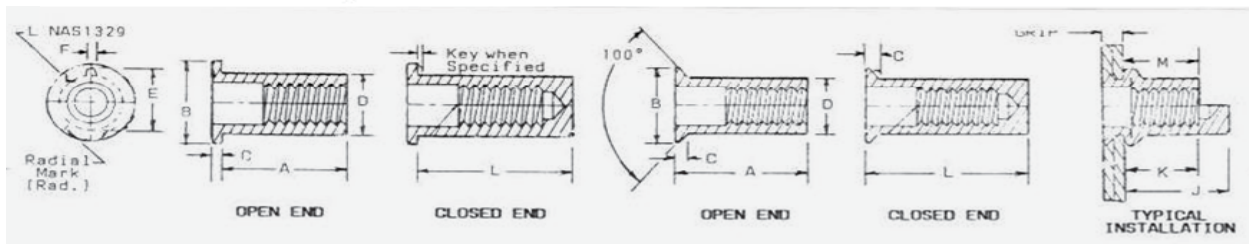
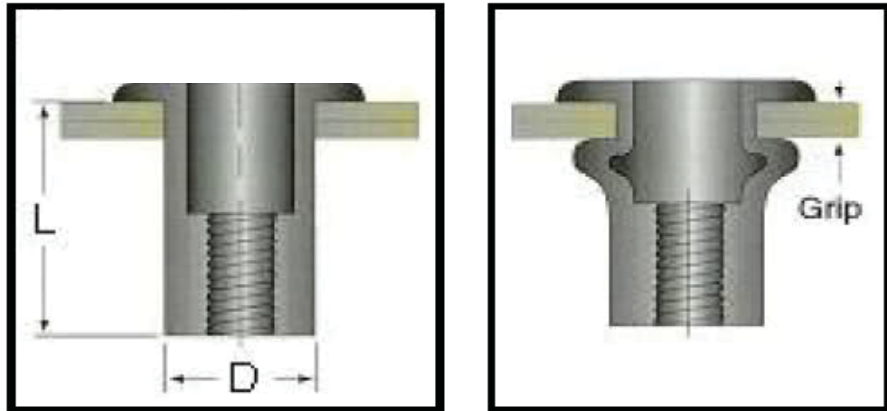


RIVET REQUIREMENT CHART Dzus Camloc Southco Airloc

Stud Type	Receptacle	Thickness	Rivet Size	Head Type	Solid Rivet/Blind Rivet				
					.020	.032	.040	.063	.100
ZLoc	S3	.100	3/32	CSK	3-3, 32*	3-3, 32	3-3, 32	3-3, 32	
	S4	.100	3/32	CSK	3-3, 32	3-3, 32	3-3, 32	3-3, 32	
	S5A	.110	1/8	CSK	4-3, 42	4-3, 42	4-4, 43	4-4, 43	4-4, 44
	S6A	.110	1/8	CSK	4-4, 43	4-4, 43	4-4, 43	4-4, 43	4-4, 44
	S7A	.110	1/8	CSK	4-4, 43	4-4, 43	4-4, 43	4-4, 43	4-4, 44
	EHF Stud	.020	1/8	UNIV	4-3, 42	4-3, 42	4-4, 43	4-4, 43	4-4, 44
	945/946 Plate with S5,S6,214 with 244,SK215,SK245	.100 .100	1/8 1/8	UNIV UNIV					4-4, 44 4-5, 44
CLoc	212, SK213-2	.075	3/32	CSK	3-3, 32	3-3, 32	3-4, 33	3-4, 33	3-4, 33
	214, SK213-28	.090	1/8	CSK	4-3, 42	4-3, 42	4-4, 43	4-4, 43	4-4, 44
	244,SK215,SK245	.100	1/8	CSK	4-4, 43	4-4, 43	4-4, 43	4-4, 43	4-5, 44
Southco	82-35-295-20	.120	3/32	CSK	3-4, 33	3-4, 33	3-5, 34	3-5, 34	3-5, 34
	82-35-302-15	.130	3/32	CSK	3-4, 33	3-5, 34	3-5, 34	3-5, 34	3-5, 34
	85-35-295-20	.160	1/8	CSK	4-5, 44	4-5, 44	4-5, 44	4-5, 44	4-6, 45
Lord	J7444 Series (#832)	.055	5/32(Ream)	UNIV	5-3, 52	5-3, 52	5-3, 52	5-3, 52	5-4, 53
SK2003	SK2003 Series (#832)	.055	5/32	UNIV	5-3, 52	5-3, 52	5-3, 52	5-3, 52	5-4, 53
ALoc	99797-P130	.032	1/8	CSK	4-3, 42	4-3, 42	4-3, 42	4-3, 42	4-4, 43
	99871-C098	.075	3/32	CSK	3-3, 32	3-3, 32	3-4, 33	3-4, 33	3-4, 33
	99833-C098	.075	3/32	CSK	3-3, 32	3-3, 32	3-4, 33	3-4, 33	3-4, 33
	99833-P098	.032	3/32	CSK	3-3, 32	3-3, 32	3-3, 32	3-3, 32	3-4, 33
	99833-C130	.075	1/8	CSK	4-3, 42	4-3, 42	4-4, 43	4-4, 43	4-4, 43
	99833-P130	.032	1/8	CSK	4-3, 42	4-3, 42	4-3, 42	4-3, 42	4-4, 43
	99947-C130	.090	1/8	CSK	4-3, 42	4-3, 42	4-4, 43	4-4, 43	4-5, 44
	99947-P130	.050	1/8	CSK	4-3, 42	4-3, 42	4-3, 42	4-3, 42	4-4, 43
	99948-C130	.090	1/8	CSK	4-3, 42	4-3, 42	4-4, 43	4-4, 43	4-5, 44

*Example: To Mount a Dzus Spring to a .020 Panel - Use a Solid Rivet MS20470AD3-3 or Blind Rivet SSP32

Rivnuts



Size	Thread	Flat Head		Countersunk			Drill Size	Hole Size			
		B	C	B	C	D		Min	Max		
6	#6-32	.325	.032	.323	.063	.189	.240	.054	#12	.189	.193
8	#8-32	.357	.032	.355	.063	.221	.271	.054	#2	.221	.226
10	#10-32	.406	.038	.391	.065	.250	.302	.054	E	.250	.256
1/4	1/4-28	.475	.058	.529	.089	.332	.382	.054	Q	.332	.338

Common Rivnut Sizes

Standard Package - 10

Flat Head - Open End - Keyed

Countersunk - Open End - Keyed

Part#	Grip			Part#	Grip		
	Range	A	M		Range	A	M
A6K75	.010-.075	.438	.300	A6K106	.065-.106	.500	.325
A6K120	.075-.120	.500	.315	A8K106	.065-.106	.500	.325
A8K75	.010-.075	.438	.300	A10K116	.065-.116	.578	.395
A8K120	.075-.120	.500	.315	A10K166	.116-.166	.625	.385
A10K80	.010-.080	.531	.380				
A10K130	.080-.130	.594	.390				
A10K180	.130-.180	.641	.390				

200RNC Rivet Nutter Tool

Inserts Rivnuts and Threadserts. #632,#832,#1032

1/4-20, 5/16-18, 3/8-16.

Part#
200RNC





FBO PLUS HARDWARE KIT SYSTEM

Our most complete, professional kit system is designed for even the largest shop or repair facility. The All-Steel construction (drawers and slide racks) feature slide out drawers that easily lift out for added utility. This system is completely expandable for your growing hardware needs by adding additional drawers and racks.

Consider these value packed features:
*Professional Quality, Factory New Fasteners
*Top Quality, Rugged Construction Cabinets
*All Compartments Labeled
*Most Common, High Use Items

FBO BOLT 1 KIT

(Included in FBO System)

FBO BOLT 2 KIT

(OPTIONAL)

DRAWER 1 DK-AN3A		DRAWER 2 DK-AN3		DRAWER 3 DK-AN4A		DRAWER 4 DK-AN4		DRAWER 5 DK-AN5A		DRAWER 6 DK-AN5		DRAWER 7 DK-AN6A		DRAWER 8 DK-AN6	
Part#	QTY	Part#	QTY	Part#	QTY	Part#	QTY	Part#	QTY	Part#	QTY	Part#	QTY	Part#	QTY
AN3-3A	25	AN3-3	10	AN4-4A	25	AN4-3	10	AN5-5A	10	AN5-5	5	AN6-5A	5	AN6-5	5
AN3-4A	25	AN3-4	10	AN4-5A	25	AN4-4	10	AN5-6A	10	AN5-6	5	AN6-6A	5	AN6-6	5
AN3-5A	25	AN3-5	10	AN4-6A	25	AN4-5	10	AN5-7A	10	AN5-7	5	AN6-7A	5	AN6-7	5
AN3-6A	25	AN3-6	10	AN4-7A	25	AN4-6	10	AN5-10A	10	AN5-10	5	AN6-10A	5	AN6-10	5
AN3-7A	25	AN3-7	10	AN4-10A	25	AN4-7	10	AN5-11A	10	AN5-11	5	AN6-11A	5	AN6-11	5
AN3-10A	25	AN3-10	10	AN4-11A	10	AN4-10	10	AN5-12A	10	AN5-12	5	AN6-12A	5	AN6-12	5
AN3-11A	10	AN3-11	10	AN4-12A	10	AN4-11	10	AN5-13A	10	AN5-13	5	AN6-13A	5	AN6-13	5
AN3-12A	10	AN3-12	10	AN4-13A	10	AN4-12	10	AN5-14A	10	AN5-14	5	AN6-14A	5	AN6-14	5
AN3-13A	10	AN3-13	5	AN4-14A	10	AN4-13	5	AN5-15A	10	AN5-15	5	AN6-15A	5	AN6-15	5
AN3-14A	10	AN3-14	5	AN4-15A	10	AN4-14	5	AN5-16A	10	AN5-16	5	AN6-16A	5	AN6-16	5
AN3-15A	10	AN3-15	5	AN4-16A	10	AN4-15	5	AN5-17A	5	AN5-17	5	AN6-17A	5	AN6-17	5
AN3-16A	10	AN3-16	5	AN4-17A	10	AN4-16	5	AN5-20A	5	AN5-20	5	AN6-20A	5	AN6-20	5
AN3-17A	10	AN3-17	5	AN4-20A	10	AN4-17	5	AN5-21A	5	AN5-21	5	AN6-21A	5	AN6-21	5
AN3-20A	10	AN3-20	5	AN4-21A	10	AN4-20	5	AN5-22A	5	AN5-22	5	AN6-22A	5	AN6-22	5
AN3-21A	10	AN3-21	5	AN4-22A	10	AN4-21	5	AN5-23A	5	AN5-23	5	AN6-23A	5	AN6-23	5
AN3-22A	10	AN3-22	5	AN4-23A	10	AN4-22	5	AN5-24A	5	AN5-24	5	AN6-24A	5	AN6-24	5
AN3-23A	10	AN3-23	5	AN4-24A	10	AN4-23	5	AN5-25A	5	AN5-25	5	AN6-25A	5	AN6-25	5
AN3-24A	10	AN3-24	5	AN4-25A	10	AN4-24	5	AN5-26A	5	AN5-26	5	AN6-26A	5	AN6-26	5
AN3-25A	10	AN3-25	5	AN4-26A	10	AN4-25	5	AN5-27A	5	AN5-27	5	AN6-27A	5	AN6-27	5
AN3-26A	10	AN3-26	5	AN4-27A	10	AN4-26	5	AN5-30A	5	AN5-30	5	AN6-30A	5	AN6-30	5
AN3-27A	10	AN3-27	5	AN4-30A	10	AN4-27	5	AN5-31A	5	AN5-31	5	AN6-31A	5	AN6-31	5
AN3-30A	10	AN3-30	5	AN4-31A	5	AN4-30	5	AN5-32A	5	AN5-32	5	AN6-32A	5	AN6-32	5
AN3-31A	10	AN3-31	5	AN4-32A	5	AN4-31	5	AN5-33A	5	AN5-33	5	AN6-33A	5	AN6-33	5
AN3-32A	10	AN3-32	5	AN4-33A	5	AN4-32	5	AN5-34A	5	AN5-34	5	AN6-34A	5	AN6-34	5

950 Pieces

530 Pieces

FBO NUT KIT

(Incl in FBO System)

FBO SCREW KIT

(Included in FBO System)

FBO WASHER KIT

(Included in FBO System)

DRAWER9 DK-NUT1		DRAWER10 DK-NUT2		DRAWER11 DK-SCREW1		DRAWER12 DK-SCREW2		DRAWER13 DK-SCREW3		DRAWER14 DK-SCREW4		DRAWER15 DK-WASHER1		DRAWER16 DK-WASHER2	
Part#	QTY	Part#	QTY	Part#	QTY	Part#	QTY	Part#	QTY	Part#	QTY	Part#	QTY	Part#	QTY
AN310-3	25	AN364-428	50	AN526-440R8	100	AN507-1032R10	100	AN526C440R4	100	4RX1/4THAS	100	AN935-6	100	AN960C6L	200
AN310-4	25	AN365-440	50	AN526-632R6	100	AN507-1032R12	100	AN526C440R6	100	4RX3/8THAS	100	AN935-8	100	AN960C8L	200
AN310-5	25	AN365-632	50	AN526-632R8	100	AN507-428R8	100	AN526C632R6	100	4RX1/2THAS	100	AN935-10	100	AN960C10L	200
AN315-3	25	AN365-832	100	AN526-632R10	100	AN507B632R16	100	AN526C632R8	100	4RX5/8THAS	100	AN936A6	100	AN960C416L	200
AN315-4	25	AN365-1032	100	AN526-632R12	100	MS35214-30	100	AN526C632R10	100	6RX3/8THAS	100	AN936A8	100	AN960C516L	100
AN315-5	25	AN365-428	100	AN526-832R6	100	AN509-10R6	100	AN526C832R6	100	6RX1/2THAS	100	AN936A10	100	#8 CSK WS	50
AN316-4	25	AN365-524	25	AN526-832R8	100	AN509-10R7	100	AN526C832R8	100	6RX5/8THAS	100	AN936A416	100	#8 CSK WS	50
AN316-5	25	MS21044C06	25	AN526-832R10	100	AN509-10R8	100	AN526C832R10	100	8RX3/8THAS	100	AN936A516	100	#10 CSK WS	50
AN320-3	25	MS21044C08	25	AN526-832R12	100	AN509-10R10	100	AN526C832R12	50	8RX1/2THAS	100	AN960-4	100	MS27129-6	100
AN320-4	25	MS21044C3	25	AN526-1032R8	100	MS27039-0806	100	AN526C832R16	50	8RX5/8THAS	100	AN960-6	200	MS27129-9	100
AN320-5	25	AN363-1032	25	AN526-1032R10	100	MS27039-0808	100	AN526C1032R8	100	8RX3/4THAS	100	AN960-8	200	MS27129-12	100
AN340-4	50	AN363-428	25	AN526-1032R12	100	MS27039-0809	100	AN526C1032R10	100	10RX1/2THAS	100	AN960-10	200	#6L NYLON	100
AN340-6	50	AN363-524	10	AN507-440R12	100	MS27039-0812	100	AN526C1032R12	50	10RX5/8THAS	100	AN960-416	200	#8L NYLON	100
AN340-8	50	NAS679A3	25	AN507-632R6	100	MS27039-0814	100	AN526C1032R16	50	10RX3/4THAS	50	AN960-516	100	#10L NYLON	100
AN340B6	25	NAS679A4	25	AN507-632R8	100	6RX1/2THB	100	AN507C632R6	100	4RX1/2OHAS	100	AN960-616	50	AN380-1-2	100
AN345-10	50	NAS679A5	10	AN506-632R10	100	8RX1/2THB	100	AN507C632R8	100	6RX1/2OHAS	100	AN960-716	50	AN380-2-2	100
AN345-416	50	MS21042-3	25	AN507-632R12	100	MS21207-8-8	100	AN507C632R10	100	8RX5/8OHAS	100	AN970-3	50	AN380-2-4	100
AN340C8	25	MS21042-4	25	AN507-832R6	100	MS21207-10-10	100	AN507C832R8	100	10RX5/8OHAS	50	AN970-4	50	AN380-2-6	100
AN340C10	25	MS21042-5	5	AN507-832R8	100	4RX3/8THA	100	AN507C832R10	100	6RX1/2FHAS100	100	AN970-5	20	AN380-2-8	100
AN340C16	25	A1784-6Z-1	25	AN507-832R10	100	6RX3/8THA	100	AN507C832R12	100	8RX1/2FHAS100	100	AN960-4L	100	AN380-3-2	100
AN364-440	50	A1348-8Z-1	25	AN507-832R12	100	6RX1/2THA	100	AN507C1032R8	100	10RX1/2FHAS100	100	AN960-6L	200	AN380-3-4	100
AN364-632	100	A1778-8Z-1	25	AN507-832R16	100	8RX1/2THA	100	AN507C1032R10	100	6RX1/2FHBS100	100	AN960-8L	200	AN380-3-6	100
AN364-832	100	A1789-8Z-1	25	AN507-1032R6	100	8RX5/8THA	100	AN507C1032R12	100	8RX1/2FHBS100	100	AN960-10L	200	AN380-3-8	100
AN364-1032	100	130008	10	AN507-1032R8	100	10RX5/8THA	100	AN507C1032R16	100	10RX1/2FHBS100	100	AN960-416L	200	AN380-4-4	50

1810 Pieces

9300 Pieces

AN960-516L 100

FBO RIVET KIT

(Included in FBO System)

DRAWER17 DK-RIVET1				DRAWER18 DK-RIVET2			
Part#	LBS	Part#	LBS	Part#	LBS	Part#	LBS
MS20470AD3-3	1/8	MS20470AD4-14	1/8	MS20426AD3-3	1/8	MS20426AD4-9	1/8
MS20470AD3-4	1/8	MS20470AD4-16	1/8	MS20426AD3-4	1/8	MS20426AD4-10	1/8
MS20470AD3-5	1/8	MS20470AD4-5	1/8	MS20426AD3-5	1/8	MS20426AD4-12	1/8
MS20470AD3-6	1/8	MS20470AD4-5-5	1/8	MS20426AD3-6	1/8	MS20426AD4-16	1/8
MS20470AD3-8	1/8	MS20470AD4-5-6	1/8	MS20426AD3-8	1/8	MS20426AD4-5	1/8
MS20470AD4-3	1/8	MS20470AD4-5-7	1/8	MS20426AD3-12	1/8	MS20426AD4-5-5	1/8
MS20470AD4-4	1/8	MS20470AD4-5-8	1/8	MS20426AD4-3	1/8	MS20426AD4-5-6	1/8
MS20470AD4-5	1/8	MS20470AD4-5-10	1/8	MS20426AD4-4	1/8	MS20426AD4-5-8	1/8
MS20470AD4-6	1/8	MS20470AD4-5-12	1/8	MS20426AD4-5	1/8	MS20426AD4-5-10	1/8
MS20470AD4-8	1/8	MS20470AD4-5-14	1/8	MS20426AD4-6	1/8	MS20426AD4-5-12	1/8
MS20470AD4-10	1/8	MS20470AD4-5-16	1/8	MS20426AD4-7	1/8	MS20426AD4-5-16	1/8
MS20470AD4-12	1/8	MS20470AD6-12	1/8	MS20426AD4-8	1/8	MS20426AD4-6-12	1/8

See On-Line Purchasing for Pricing

6045 Pieces

FBO Plus

HARDWARE KIT SYSTEM (Options)



Kit#	Kit#	Kit#	Kit#	Kit#	Kit#						
FBO CHERRYMAX	FBO ELECTRICAL	FBO CLEKO	FBO RIVNUT	FBO GROMMET	FBO STAINLESS BOLT						
Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty		
CR3212-4-2	25	FND2622-3	50	C-3/32	25	A6K75	10	MS35489-1	5	AN3C3A	10
CR3212-4-3	25	FND2216-S3	50	C-1/8	25	A6K120	10	MS35489-2	5	AN3C4A	10
CR3212-4-4	25	FND2216-4	50	C-5/32	25	A8K75	10	MS35489-4	5	AN3C5A	10
CR3212-4-5	25	FND2216-5	50	C-3/16	25	A8K120	10	MS35489-134	5	AN3C6A	10
CR3213-4-1	25	FND2216-6	50	WNX-3/32	3	A10K80	10	MS35489-5	5	AN3C7A	10
CR3213-4-2	25	FND2216-8	50	WNX-1/8	3	A10K130	10	MS35489-6	5	AN3C10A	10
CR3213-4-3	25	FND1614-M3	50	WNX-5/32	3	A6K106	10	MS35489-7	5	AN3C11A	10
CR3213-4-4	25	FND1614-4	50	WNX-3/16	3	A8K106	10	MS35489-8	5	AN3C12A	10
CR3213-4-5	25	FND1614-M5	50	125SG	5	A10K116	10	MS35489-9	5	AN3C13A	10
CR3242-4-2	25	FND1614-6	50	126SG	5	200RNC	1	MS35489-10	5	AN4C4A	10
CR3242-4-3	25	FND1614-8	50	C-200	1			MS35489-118	5	AN4C5A	10
CR3242-4-4	25	FND1210-4	25					MS35489-11	5	AN4C6A	10
CR3242-4-5	25	FND1210-S6	25					MS35489-12	5	AN4C7A	10
CR3243-4-1	25	FND1210-9	25					MS35489-13	5	AN4C10A	10
CR3243-4-2	25	FN8-8	10					MS35489-14	5	AN4C11A	10
CR3243-4-3	25	FN4-9	10					MS35489-15	5	AN4C12A	10
CR3243-4-4	25	1582	10					MS35489-16	5	AN4C13A	10
CR3243-4-5	25	WS2216K	50					MS35489-17	5	AN4C14A	10
		WS1614K	50					MS35489-18	5	MS21044C3	50
		WS1210K	25					MS35489-19	5	MS21044C4	50
		NCL2622	25					MS35489-20	5	AN960C10	100
		NDCW1614	25					MS35489-135	5	AN960C10L	100
		NDCW2216	25					MS35489-21	5	AN960C416	100
		C1210	25					MS35489-22	5	AN960C416L	100
		2218SDB	50								
		1614SDB	50								
	450		980		123		91		120		680

Kit#	Kit#	Kit#	Kit#	Kit#	Kit#
FBO WDG CLAMP	FBO PLATENUT-1	FBO PLATENUT-2	FBO TINNERMAN	FBO POP RIVET	FBO INSTRUMENT

Note (1)

Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty		
MS21919WDG2	5	MS21047L06	10	MS21069L02	10	A1776-4Z-1	25	AAC-32	100	MS24693BB4	25
MS21919WDG3	5	MS21047L08	10	MS21069L04	10	A1181-6Z-1	25	AAC-34	100	MS24693BB5	100
MS21919WDG4	5	MS21047L3	10	MS21069L06	10	A1777-6Z-1	25	AAC-42	100	MS24693BB26	25
MS21919WDG5	5	MS21049L06	10	MS21069L08	10	A1778-8Z-1	25	AAC-43	100	MS24693BB28	100
MS21919WDG6	5	MS21049L08	10	MS21069L3	10	A1779-10Z-1	25	AAC-44	100	MS24693BB29	25
MS21919WDG7	5	MS21049L3	10	MS21071L04	10	A6162-6Z-1	25	AAC-45	100	MS24693BB30	100
MS21919WDG8	5	MS21051L06	10	MS21071L06	10	A6195-8Z-1	25	AAC-54	100	MS24693BB31	25
MS21919WDG9	5	MS21051L08	10	MS21071L08	10	A6191-10Z-1	25	AAC-64	100	MS24693BB32	100
MS21919WDG10	5	MS21051L3	10	MS21071L3	10	A6196-6Z-1	25	AAP-32	100	MS24693BB34	25
MS21919WDG11	5	MS21053L06	10	MS21073L04	10	A6196-8Z-1	25	AAP-34	100	MS24693BB36	25
MS21919WDG12	5	MS21053L08	10	MS21073L06	10	A6187-4Z-1	25	AAP-36	100	MS24693BB50	25
MS21919WDG13	5	MS21053L3	10	MS21073L08	10	A1784-6Z-1	25	AAP-41	100	MS24693BB52	100
MS21919WDG14	5	MS21055L06	10	MS21073L3	10	A1785-6Z-1	25	AAP-42	100	MS35214-16	100
MS21919WDG15	5	MS21055L08	10	MS21075L04	10	A1274-8Z-1	25	AAP-43	100	MS35214-18	25
MS21919WDG16	5	MS21055L3	10	MS21075L06	10	A1348-8Z-1	25	AAP-44	100	MS35214-27	100
MS21919WDG17	5	MS21057L06	10	MS21075L08	10	A1786-8Z-1	25	AAP-46	100	MS35214-29	100
MS21919WDG18	5	MS21057L08	10	MS21075L3	10	A1787-8Z-1	25	AAP-52	100	MS35214-31	100
MS21919WDG19	5	MS21057L3	10	MS21086L08	10	A1788-8Z-1	25	AAP-54	100	MS35214-32	25
MS21919WDG20	5	MS21059L06	10	MS21086L3	10	A1789-8Z-1	25	AAP-56	100	MS35214-33	25
MS21919WDG21	5	MS21059L08	10			A1932-8Z-1	25	AAP-64	100	MS35214-42	25
MS21919WDG22	5	MS21059L3	10			A1350-10Z-1	25	AAL-44	100	MS35214-44	25
MS21919WDG23	5	MS21061L06	10			A1758-10Z-1	25	AAL-46	100	MS35214-47	25
MS21919WDG24	5	MS21061L08	10			A1787-10Z-1	25	AAL-64	100	MS35214-56	25
MS21919WDG25	5	MS21061L3	10			A1791-10Z-1	25	AAL-612	100	MS35214-60	25
	110		240		190		600		2400		1275

Note (1) Many Tinnerman parts are no longer available. Some items may be deleted or substituted.

HARDWARE PACK SYSTEM

SKYBOLT created the Hardware Pack System to offer packaged hardware selections that are very economical. Selections include common hardware in both Steel and Stainless. Each Pack contains extra labels for use on your own cabinets.



SYSTEM SPECIAL

Purchase the Basic Pack System & Receive Discount

PK-AN3A PK-SMS2 See On-Line Purchasing
 PK-AN960 PK-SMS3
 PK-AN365 PK-AN507C
 PK-AN380 PK-AN526C
 PK-RIVET

PK-SMS1 Steel		PK-SMS2 Stainless		PK-SMS3 Stainless		PK-AN507 Steel		PK-AN507C Stainless		PK-AN526 Steel	
Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty
6RX1/2THA	100	6RX1/2THAS	100	6RX1/2FHAS100	100	AN507-632R8	100	AN507C632R8	100	AN526-440R8	100
8RX1/2THA	100	8RX1/2THAS	100	8RX1/2FHAS100	100	AN507-832R8	100	AN507C832R8	100	AN526-632R6	100
10RX1/2THA	100	10RX1/2THAS	100	10RX1/2FHAS100	100	AN507-832R10	100	AN507C832R10	100	AN526-832R8	100
10RX5/8THA	100	10RX5/8THAS	100	6RX1/2FHBS100	100	AN507-1032R8	100	AN507C1032R8	100	AN526-832R10	100
6RX1/2THB	100	6RX1/2THBS	100	8RX1/2FHBS100	100	AN507-1032R10	100	AN507C1032R10	100	AN526-1032R8	100
8RX1/2THB	100	8RX1/2THBS	100	10RX1/2FHBS100	100					AN526-1032R10	100
10RX1/2THB	100	10RX1/2THBS	100								
10RX5/8THB	100	10RX1/2THBS	100								
800		800		600		500		500		600	

PK-AN526C Stainless		PK-AN310 Steel		PK-AN363 Steel		PK-AN364 Steel		PK-AN365 Steel		PK-AN380 Steel	
Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty
AN526C440R8	100	AN310-4	25	AN363-632	25	AN364-440	25	AN365-632	25	AN380-1-3	100
AN526C632R6	100	AN310-5	25	AN363-832	25	AN364-632	25	AN365-832	25	AN380-2-1	100
AN526C832R8	100	AN310-6	25	AN363-1032	25	AN364-832	25	AN365-1032	25	AN380-2-2	100
AN526C832R10	100	AN320-3	25	AN363-428	25	AN364-1032	25	AN365-428	25	AN380-2-3	100
AN526C1032R8	100	AN320-4	25	AN363-516	25	AN364-428	25	AN365-524	25	AN380-3-3	100
AN526C1032R10	100			AN363-616	25					AN380-3-4	100
600		125		150		125		125		600	

PK-AN960 Steel		PK-AN960C Stainless		PK-AN3A Steel		PK-AN3 Steel		PK-RIVET Alum		PK-AN381 Stainless	
Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty
AN960-6	100	AN960C6	100	AN3-3A	25	AN3-4	10	MS20426AD3-3	1/8	AN381-1-6	100
AN960-8	100	AN960C8	100	AN3-4A	25	AN3-5	10	MS20426AD3-4	1/8	AN381-2-6	100
AN960-10	100	AN960C10	100	AN3-5A	25	AN3-6	10	MS20426AD3-6	1/8	AN381-2-8	100
AN960-416	100	AN960C416	100	AN3-6A	25	AN3-7	10	MS20426AD4-4	1/8	AN381-3-8	100
AN960-516	100	AN960C6L	100	AN3-7A	25	AN3-10	10	MS20426AD4-5	1/8	AN381-3-12	100
AN960-616	100	AN960C8L	100	AN3-10A	25	AN3-11	10	MS20426AD4-6	1/8		500
AN960-6L	100	AN960C10L	100	AN3-11A	10	AN3-12	10	MS20426AD5-6	1/8		
AN960-8L	100	AN960C416L	100	AN3-12A	10	AN3-13	5	MS20426AD3-3	1/8	PK-HALF PAK	
AN960-10L	100			AN3-13A	10	AN3-14	5	MS20470AD4-4	1/8	Half Length Rivets	
AN960-416L	100			AN3-14A	10	AN3-15	5	MS20470AD4-5	1/8	MS20426AD3-3.5C	100
AN960-516L	100			AN3-15A	10	AN4-4	10	MS20470AD4-6	1/8	MS20426AD3-4.5C	100
AN960-616L	100			AN3-16A	10	AN4-5	10	MS20470AD4-8	1/8	MS20426AD3-5.5C	100
1200		800		AN3-17A	10	AN4-6	10	MS20470AD4-12	1/8	MS20426AD4-3.5C	100
				AN3-20A	10	AN4-7	10	MS20470AD5-4	1/8	MS20426AD4-4.5C	100
				AN4-4A	25	AN4-10	10	MS20470AD5-5	1/8	MS20426AD4-5.5C	100
				AN4-5A	25	AN4-11	10	MS20470AD5-6	1/8	MS20470AD3-3.5C	100
				AN4-6A	25	AN4-12	10	MS20470AD5-8	1/8	MS20470AD3-4.5C	100
				AN4-7A	25	AN4-13	5	MS20470AD5-12	1/8	MS20470AD3-5.5C	100
				AN4-10A	25	AN4-14	5			MS20470AD4-3.5C	100
				AN4-11A	10	AN4-15	5			MS20470AD4-4.5C	100
				AN4-12A	10	AN4-16	5			MS20470AD4-5.5C	100
				AN4-13A	10	AN4-17	5				
				AN4-14A	10	AN4-20	5				
				AN4-15A	10						
				AN4-16A	10						
				AN4-17A	10						
				AN4-20A	10						
90		90		435		185				1200	

PK-CHERRY1 CherryMax Nominal		PK-CHERRY2 CherryMax Oversize		PK-AN3A Steel		PK-AN3 Steel		PK-RIVET Alum		PK-AN381 Stainless	
Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty
CR3212-4-1	10	CR3242-4-1	10	AN4-4A	25	AN4-10	10	MS20470AD5-5	1/8	MS20426AD3-3.5C	100
CR3212-4-2	10	CR3242-4-2	10	AN4-5A	25	AN4-11	10	MS20470AD5-6	1/8	MS20426AD3-4.5C	100
CR3212-4-3	10	CR3242-4-3	10	AN4-6A	25	AN4-12	10	MS20470AD5-8	1/8	MS20470AD3-4.5C	100
CR3212-4-4	10	CR3242-4-4	10	AN4-7A	25	AN4-13	5			MS20470AD3-5.5C	100
CR3212-4-5	10	CR3242-4-5	10	AN4-10A	25	AN4-14	5			MS20470AD4-3.5C	100
CR3213-4-2	10	CR3243-4-2	10	AN4-11A	10	AN4-15	5			MS20470AD4-4.5C	100
CR3213-4-3	10	CR3243-4-3	10	AN4-12A	10	AN4-16	5			MS20470AD4-5.5C	100
CR3213-4-4	10	CR3243-4-4	10	AN4-13A	10	AN4-17	5				
CR3213-4-5	10	CR3243-4-5	10	AN4-14A	10	AN4-20	5				
				AN4-15A	10						
				AN4-16A	10						
				AN4-17A	10						
				AN4-20A	10						
90		90		435		185				1200	

HARDWARE PACK SYSTEM



PK-AN806D		PK-AN815D		PK-AN816D		PK-AN822D		PK-AN929D		PK-NICOPRESS	
Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty
AN806-2D	2	AN815-2D	2	AN816-2D	2	AN822-2D	2	AN929-2D	2	428-2-VC	25
AN806-3D	2	AN815-3D	2	AN816-3D	2	AN822-3D	2	AN929-3D	2	428-3-VG	25
AN806-4D	2	AN815-4D	2	AN816-4D	2	AN822-4D	2	AN929-4D	2	428-4-VM	25
AN806-5D	2	AN815-5D	2	AN816-5D	2	AN822-5D	2	AN929-5D	2	428-6-VX	10
AN806-6D	2	AN815-6D	2	AN816-6D	2	AN822-6D	2	AN929-6D	2	18-2-G	25
AN806-8D	2	AN815-8D	2	AN816-8D	2	AN822-8D	2	AN929-8D	2	18-3-M	25
AN806-10D	2	AN815-10D	2	AN816-10D	2	AN822-10D	2	AN929-10D	2		
AN806-12D	2	AN815-12D	2	AN816-12D	2	AN822-12D	2	AN929-12D	2		
	16		16		16		16		16		135

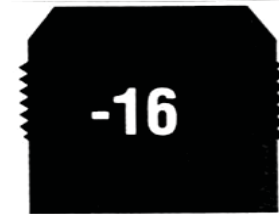
PK-AN340		PK-AN936A		PK-AN525		PK-AN509		PK-MS27039		PK-DIMPLE WASHER	
Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty
AN340-4	50	AN936A4	100	AN525-832R7	50	AN509-8R6	50	MS27039-0806	50	DP1075-12SS	50
AN340-6	50	AN936A6	100	AN525-832R8	50	AN509-8R8	50	MS27039-0807	50	DP1080-17SS	50
AN340B6	25	AN936A8	100	AN525-832R9	50	AN509-10R6	50	MS27039-0809	50	DP1085-20SS	50
AN340-8	50	AN936A10	100	AN525-10R7	50	AN509-10R7	50	MS27039-0812	50	MS27129-6	100
AN340-10	25	AN936A416	100	AN525-10R8	50	AN509-10R8	50	MS27039-1-08	50	MS27129-9	100
AN340-416	50	AN936A516	100	AN525-10R10	50	AN509-416R7	50	MS27039-1-09	50	MS27129-12	100
	250		600		300		300		300		450

PK-AN515		PK-MS35214		PK-POP RIVET		PK-ZLoc1		PK-ZLoc2	
Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty
AN515-4R6	50	MS24693BB32	50	AAP-32	100	ZGO65-40	10	ZGF65-40	10
AN515-6R8	50	MS35214-16	50	AAP-43	100	ZGO65-50	10	ZGF65-50	10
AN515-8R8	50	MS35214-27	50	AAP-44	100	ZGO65-55	10	ZGF65-55	10
AN515-8R10	50	MS35214-29	50	AAP-54	100	ZGO65-60	10	ZGF65-60	10
AN515-10R8	50	MS35214-30	50	AAL-44	100	SK6-375	25	SK6-375	25
AN515-10R10	50	MS35214-31	50	AAL-66	100				
	300		300		600		65		65

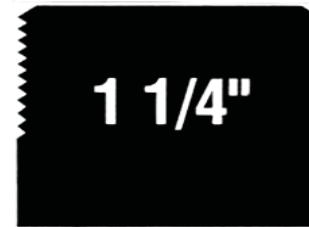
PK-CLEKO		PK-EHF5		PK-EHF6		PK-SOUTHCO1		PK-SOUTHCO2	
Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty
C-3/32	25	SKEHF5-40	10	SKEHF6-50	10	82-11-120-20	10	82-19-120-20	10
C-1/8	25	SKEHF5-50	10	SKEHF6-55	10	82-11-140-20	10	82-19-140-20	10
C-5/32	25	SKEHF5-55	10	SKEHF6-60	10	82-11-160-20	10	82-19-160-20	10
C-3/16	25	SKEHF5-60	10	SKEHF6-65	10	82-11-180-20	10	82-19-180-20	10
		SK5-325	25	SK6-375	25	82-11-200-20	10	82-19-200-20	10
						82-32-201-20	50	82-32-201-20	50
	100		65		65		100		100

PK-ELEC		PK-HST		PK-INTERIOR		SK-6SS		SK-24SS	
Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty	Part#	Qty
FND1210-S6	25	HST-16	5	MS27129-3	100	AN526C832R8	25	AN526C632R6	25
FND1210-9	25	HST-32	5	MS27129-6	100	AN526C1032R8	25	AN526C632R8	25
FND1614-4	25	HST-18	5	MS27129-12	100	MS24693-C50	25	AN526C832R8	25
FND2216-4	25	HST-36	5	NAS390B4P	100	MS24693-C272	25	AN526C1032R10	25
FND2622-3	25	HST-14	5	NAS390B6P	100	8RX1/2THBS	25	AN526C832R10	25
NCL1210	25	HST-56	5	NAS390B8P	100	10RX1/2THBS	25	MS24693-C26	25
NCL1614	25	HST-38	5	4RX3/8OHAS	100			MS24693-C28	25
NCL2216	25	HST-12	5	4RX1/2OHAS	100			MS24693-C50	25
NCL2622	25			4RX5/8OHAS	100			MS24693-C51	25
1614SDB	25			6RX3/8OHAS	100			MS24693-C272	25
2218SDB	25			6RX1/2OHAS	100			MS24693-C273	25
FV2216L	25			6RX5/8OHAS	100			6RX1/2THBS	25
FV1614K	25			6RX3/4OHAS	100			8RX1/2THBS	25
				8RX1/2OHAS	100			10RX1/2THBS	25
				8RX5/8OHAS	100			6RX1/2FHBS100	25
				8RX3/4OHAS	100			8RX1/2FHBS100	25
				8RX1OHAS	100			10RX1/2FHBS100	25
				10RX1/2OHAS	50			10RX5/8FHBS100	25
				10RX5/8OHAS	50			DP1075-12SS	25
				10RX3/4OHAS	50			DP1080-17SS	25
				10RX1OHAS	50			DP1085-20SS	25
								NAS1515-H-06L	100
								NAS1515-H-08L	100
								NAS1515-H-3L	100

AN Fitting Chart



Pipe Thread Chart













AN-MS Aircraft Fittings (JIC 37Deg Flare)






SKYBOLT maintains one of the best fitting inventories available. We are heavily committed to fluid transfer components.

Example Fitting Code: **AN816-8-6D**






-8 refers to Tube Size (AN Flare) -6 refers to Pipe Size

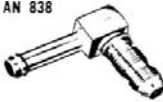




 AN804 Tee- Flared Tube with Bulkhead on Run				 AN806 Plug Flared Tube				 AN814 Plug and Bleeder Screw Thread				 AN815 Union Flared Tube				 AN816 Adapter-Straight Pipe to Tube			
Steel	Alum	Tube OD	Thread Size	Steel	Alum	Tube OD	Thread Size	Steel	Alum	Tube OD	Thread Size	Steel	Alum	Tube OD	Thread Size	Steel	Alum	Tube OD	Pipe Size
2	D2	1/8	5/16-24	2	2D	1/8	5/16-24	2	2D	1/8	5/16-24	2	2D	1/8	5/16-24	2	2D	1/8	1/8
3	D3	3/16	3/8-24	3	3D	3/16	3/8-24	3	3D	3/16	3/8-24	3	3D	3/16	3/8-24	3	3D	3/16	1/8
4	D4	1/4	7/16-20	4	4D	1/4	7/16-20	4	4D	1/4	7/16-20	4	4D	1/4	7/16-20	4	4D	1/4	1/8
5	D5	5/16	1/2-20	5	5D	5/16	1/2-20	5	5D	5/16	1/2-20	5	5D	5/16	1/2-20	4.4	4-4D	1/4	1/4
6	D6	3/8	9/16-18	6	6D	3/8	9/16-18	6	6D	3/8	9/16-18	6	6D	3/8	9/16-18	5	5D	5/16	1/8
8	D8	1/2	3/4-16	8	8D	1/2	3/4-16	8	8D	1/2	3/4-16	8	8D	1/2	3/4-16	5-4	5-4D	5/16	1/4
10	D10	5/8	7/8-14	10	10D	5/8	7/8-14	10	10D	5/8	7/8-14	10	10D	5/8	7/8-14	6-2	6-2D	3/8	1/8
12	D12	3/4	1-1/16-12	12	12D	3/4	1-1/16-12	12	12D	3/4	1-1/16-12	12	12D	3/4	1-1/16-12	6	6D	3/8	1/4
16	D16	1	1-5/16-12	16	16D	1	1-5/16-12	16	16D	1	1-5/16-12	16	16D	1	1-5/16-12	6-6	6-6D	3/8	3/8
																6-8	6-8D	3/8	1/2
																7	7D	1/2	1/4
																8	8D	1/2	3/8
																10	10D	5/8	1/2
																10-12	10-12D	5/8	3/4
																12-8	12-8D	3/4	1/2
																12	12D	3/4	3/4
																12-16	12-16D	3/4	1
																16-12	16-12D	1	3/4
																16	16D	1	1






 AN817 Nut Tube Coupling-Long				 AN818 Nut Tee Coupling-Short				 AN819 Sleeve Coupling				 AN820 Cap Flared Tube Fitting				 AN821 Elbow Flared Tube 90Deg			
Steel	Alum	Tube OD	Thread Size	Steel	Alum	Tube OD	Thread Size	Steel	Alum	Tube OD	Thread Size	Steel	Alum	Tube OD	Thread Size	Steel	Alum	Tube OD	Thread Size
2	2D	1/8	5/16-24	2	2D	1/8	5/16-24	2	2D	1/8	5/16-24	2	2D	1/8	5/16-24	2	2D	1/8	5/16-24
3	3D	3/16	3/8-24	3	3D	3/16	3/8-24	3	3D	3/16	3/8-24	3	3D	3/16	3/8-24	3	3D	3/16	3/8-24
4	4D	1/4	7/16-20	4	4D	1/4	7/16-20	4	4D	1/4	7/16-20	4	4D	1/4	7/16-20	4	4D	1/4	7/16-20
5	5D	5/16	1/2-20	5	5D	5/16	1/2-20	5	5D	5/16	1/2-20	5	5D	5/16	1/2-20	5	5D	5/16	1/2-20
6	6D	3/8	9/16-18	6	6D	3/8	9/16-18	6	6D	3/8	9/16-18	6	6D	3/8	9/16-18	6	6D	3/8	9/16-18
8	8D	1/2	3/4-16	8	8D	1/2	3/4-16	8	8D	1/2	3/4-16	8	8D	1/2	3/4-16	8	8D	1/2	3/4-16
10	10D	5/8	7/8-14	10	10D	5/8	7/8-14	10	10D	5/8	7/8-14	10	10D	5/8	7/8-14	10	10D	5/8	7/8-14
12	12D	3/4	1-1/16-12	12	12D	3/4	1-1/16-12	12	12D	3/4	1-1/16-12	12	12D	3/4	1-1/16-12	12	12D	3/4	1-1/16-12
16	16D	1	1-5/16-12	16	16D	1	1-5/16-12	16	16D	1	1-5/16-12	16	16D	1	1-5/16-12	16	16D	1	1-5/16-12

 AN822 Elbow-Flared Tube and Pipe Thread 90Deg				 AN823 Elbow-Flared Tube and Pipe Thread 45Deg				 AN 824 Tee Flared Tube				 AN 825 Tee-Flared Tube with Pipe Thread on Side				 AN 826 Tee-Flared Tube with Pipe Thread on Run			
Steel	Alum	Tube OD	Pipe Size	Steel	Alum	Tube OD	Pipe Size	Steel	Alum	Tube OD	Pipe Size	Steel	Alum	Tube OD	Pipe Size	Steel	Alum	Tube OD	Pipe Size
2	2D	1/8	1/8	2	2D	1/8	1/8	2	2D	1/8	1/8	2	2D	1/8	1/8	2	2D	1/8	1/8
3	3D	3/16	1/8	3	3D	3/16	1/8	3	3D	3/16	1/8	3	3D	3/16	1/8	3	3D	3/16	1/8
4	4D	1/4	1/8	4	4D	1/4	1/8	4	4D	1/4	1/8	4	4D	1/4	1/8	4	4D	1/4	1/8
4-4	4-4D	1/4	1/4	4-4	4-4D	1/4	1/4	4	4D	1/4	1/4	4-4	4-4D	1/4	1/4	4-4	4-4D	1/4	1/4
5	5D	5/16	1/8	5	5D	5/16	1/8	5	5D	5/16	1/8	5	5D	5/16	1/8	5	5D	5/16	1/8
5-4	5-4D	5/16	1/4	5-4	5-4D	5/16	1/4	5	5D	5/16	1/8	5-4	5-4D	5/16	1/4	5-4	5-4D	5/16	1/4
6-2	6-2D	3/8	1/8	6-2	6-2D	3/8	1/8	6	6D	3/8	1/8	6-2	6-2D	3/8	1/8	6-2	6-2D	3/8	1/8
6	6D	3/8	1/4	6	6D	3/8	1/4	6	6D	3/8	1/4	6	6D	3/8	1/4	6	6D	3/8	1/4
6-6	6-6D	3/8	3/8	6-6	6-6D	3/8	3/8	6	6D	3/8	3/8	6-6	6-6D	3/8	3/8	6-6	6-6D	3/8	3/8
6-8	6-8D	3/8	1/2	6-8	6-8D	3/8	1/2	6	6D	3/8	3/8	6-8	6-8D	3/8	1/2	6-8	6-8D	3/8	1/2
7	7D	1/2	1/4	7	7D	1/2	1/4	6	6D	3/8	3/8	7	7D	1/2	1/4	7	7D	1/2	1/4
8	8D	1/2	3/8	8	8D	1/2	3/8	8	8D	1/2	3/8	8	8D	1/2	3/8	8	8D	1/2	3/8
10	10D	5/8	1/2	10	10D	5/8	1/2	8	8D	1/2	3/8	10	10D	5/8	1/2	10	10D	5/8	1/2
10-12	10-12D	5/8	3/4	10-12	10-12D	5/8	3/4	10	10D	5/8	3/4	10-12	10-12D	5/8	3/4	10-12	10-12D	5/8	3/4
12-8	12-8D	3/4	1/2	12-8	12-8D	3/4	1/2	10-12	10-12D	5/8	3/4	12-8	12-8D	3/4	1/2	12-8	12-8D	3/4	1/2
12	12D	3/4	3/4	12	12D	3/4	3/4	12	12D	3/4	3/4	12	12D	3/4	3/4	12	12D	3/4	3/4
12-16	12-16D	3/4	1	12-16	12-16D	3/4	1	12	12D	3/4	3/4	12-16	12-16D	3/4	1	12-16	12-16D	3/4	1
16-12	16-12D	1	3/4	16-12	16-12D	1	3/4	16-12	16-12D	1	3/4	16-12	16-12D	1	3/4	16-12	16-12D	1	3/4
16	16D	1	1	16	16D	1	1	16	16D	1	1	16	16D	1	1	16	16D	1	1

AN-MS Aircraft Fittings




AN827  Cross Flared Tube					AN832  Union-Flared Tube Bulkhead					AN833  Elbow-Flared Tube and Bulkhead					AN834  Tee-Flared Bulkhead Tube					AN837  Elbow-Flared Tube Bulkhead 45Deg				
Steel	Alum	Tube OD	Thread Size		Steel	Alum	Tube OD	Thread Size		Steel	Alum	Tube OD	Thread Size		Steel	Alum	Tube OD	Thread Size		Steel	Alum	Tube OD	Thread Size	
2	2D	1/8	5/16-24		2	2D	1/8	5/16-24		2	2D	1/8	5/16-24		2	2D	1/8	5/16-24		2	2D	1/8	5/16-24	
3	3D	3/16	3/8-24		3	3D	3/16	3/8-24		3	3D	3/16	3/8-24		3	3D	3/16	3/8-24		3	3D	3/16	3/8-24	
4	4D	1/4	7/16-20		4	4D	1/4	7/16-20		4	4D	1/4	7/16-20		4	4D	1/4	7/16-20		4	4D	1/4	7/16-20	
5	5D	5/16	1/2-20		5	5D	5/16	1/2-20		5	5D	5/16	1/2-20		5	5D	5/16	1/2-20		5	5D	5/16	1/2-20	
6	6D	3/8	9/16-18		6	6D	3/8	9/16-18		6	6D	3/8	9/16-18		6	6D	3/8	9/16-18		6	6D	3/8	9/16-18	
8	8D	1/2	3/4-16		8	8D	1/2	3/4-16		8	8D	1/2	3/4-16		8	8D	1/2	3/4-16		8	8D	1/2	3/4-16	
10	10D	5/8	7/8-14		10	10D	5/8	7/8-14		10	10D	5/8	7/8-14		10	10D	5/8	7/8-14		10	10D	5/8	7/8-14	
12	12D	3/4	1-1/16-12		12	12D	3/4	1-1/16-12		12	12D	3/4	1-1/16-12		12	12D	3/4	1-1/16-12		12	12D	3/4	1-1/16-12	
16	16D	1	1-5/16-12		16	16D	1	1-5/16-12		16	16D	1	1-5/16-12		16	16D	1	1-5/16-12		16	16D	1	1-5/16-12	

AN838  Hose to Bulkhead					AN840  Adapter-Hose to Pipe Thread					AN842  Elbow-Pipe Thread and Hose 90Deg					AN844  Elbow-Pipe Thread and Hose 45Deg					AN871  Flared-Straight Thread Boss Welding (Oring)				
Steel	Alum	Hose ID	Tube OD	Thread Size	Steel	Alum	Hose ID	Pipe Size		Steel	Alum	Hose ID	Pipe Size		Steel	Alum	Tube OD	Pipe Size		Steel	Alum	Thread Size		
4	4D	1/4	1/4	7/16-20	4	4D	1/4	1/8		4	4D	1/4	1/8		4	4D	1/4	1/8		4	4D			7/16-20
6	6D	3/8	3/8	1/2-20	6	6D	3/8	1/4		6	6D	3/8	1/4		6	6D	3/8	1/4		6	6D			1/2-20
8	8D	1/2	1/2	9/16-18	8	8D	1/2	3/8		8	8D	1/2	3/8		8	8D	1/2	3/8		8	8D			9/16-18
10	10D	5/8	5/8	3/4-16	9	9D	5/8	3/8		10	10D	5/8	1/2		10	10D	5/8	1/2		10	10D			3/4-16
12	12D	3/4	3/4	7/8-14	10	10D	5/8	1/2		12	12D	3/4	3/4		12	12D	3/4	3/4		12	12D			7/8-14
16	16D	1	1	1-1/16-12	11	11D	3/4	3/8		16	16D	1	3/4		16	16D	1	3/4		16	16D			1-1/16-12
20	20D	1-1/4	1-1/4	1-5/16-12	12	12D	3/4	3/4		17	17D	1	1		17	17D	1	1		20	20D			1-5/16-12
24	24D	1-1/2	1-1/2	1-7/8-12	13	13D	1	3/8		20	20D	1-1/4	1-1/4		20	20D	1-1/4	1-1/4		24	24D			1-7/8-12
					16	16D	1	3/4		21	21D	1-1/4	1		21	21D	1-1/4	1						






AN893  Bushing-Screw Thread Reducing (Oring)					AN894  Bushing-Screw Thread Expander (Oring)					AN910  Coupling Pipe Thread					AN911  Nipple Pipe Thread					AN912  Bushing Reducer Pipe				
Steel	Alum	Internal Tube OD	External Tube OD		Steel	Alum	Internal Tube OD	External Tube OD		Copper	Alum	Pipe Size			Copper	Alum	Pipe Size			Copper	Alum	Pipe Size OD	Pipe Size ID	
1	1D	1/4	5/16		-3-2	D3-2	3/16	1/8		1	1D	1/8			1	1D	1/8			1	1D	1/4	1/8	
2	2D	1/4	3/8		-4-2	D4-2	1/4	1/8		2	2D	1/4			2	2D	1/4			2	2D	3/8	1/4	
3	3D	1/4	1/2		-4-3	D4-3	1/4	3/16		3	3D	3/8			3	3D	3/8			3	3D	3/8	1/8	
31	31D	1/4	5/8		-5-4	D5-4	5/16	1/4		4	4D	1/2			4	4D	1/2			4	4D	1/2	3/8	
4	4D	1/4	3/4		-6-4	D6-4	3/8	1/4		6	6D	3/4			6	6D	3/4			5	5D	1/2	1/4	
5	5D	1/4	1		-6-5	D6-5	3/8	5/16		8	8D	1			8	8D	1			6	6D	1/2	1/8	
6	6D	1/4	1-1/4		-8-4	D8-4	1/2	1/4		10	10D	1-1/4			10	10D	1-1/4			7	7D	3/4	1/2	
7	7D	5/16	3/8		-8-5	D8-5	1/2	5/16												8	8D	3/4	3/8	
8	8D	5/16	1/2		-8-6	D8-6	1/2	3/8												9	9D	3/4	1/4	
81	81D	5/16	5/8		-10-4	D10-4	5/8	1/4												10	10D	1	3/4	
9	9D	5/16	3/4		-10-5	D10-5	5/8	5/16												11	11D	1	1/2	
10	10D	5/16	1		-10-6	D10-6	5/8	3/8												12	12D	1	3/8	
11	11D	5/16	1-1/4		-10-8	D10-8	5/8	1/2												13	13D	1-1/4	3/4	
12	12D	3/8	1/2		-12-6	D12-6	3/4	3/8																
121	121D	3/8	5/8		-12-8	D12-8	3/4	1/2																
13	13D	3/8	3/4		-12-10	D12-10	3/4	5/8																
14	14D	3/8	1		-16-6	D16-6	1	3/8																
15	15D	3/8	1-1/4		-16-8	D16-8	1	1/2																
151	151D	1/2	5/8		-16-10	D16-10	1	5/8																
16	16D	1/2	3/4		-16-12	D16-12	1	3/4																
17	17D	1/2	1																					






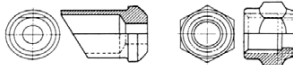

Oring Requirements for Straight Thread Fittings (AN871, AN893, AN894, AN938)

Tube OD	MS29513 Dash#
1/4	-012
5/16	-013
3/8	-112
1/2	-114
5/8	-116
3/4	-213
1	-217
1-1/4	-220


Weld Bung - Pipe Thread 6061-T6 Aluminum 					Female Flare Swivel Fitting 					Fuel Pressure Adapter 				
SK870 Alum	Pipe Size				FCM Series	Flare Size	Tube OD	Thread Size		FCM Series	Flare Size	Tube OD	Pipe Size	
-2D	1/8				FCM2914	-4	1/4	7/16-20		FCM2183	-6	3/8	1/8	
-4D	1/4				FCM2915	-6	3/8	9/16-18		FCM2184	-8	1/2	1/8	
-6D	3/8				FCM2916	-8	1/2	3/4-16						
-8D	1/2				FCM2917	-10	5/8	7/8-14						
-10D	5/8				FCM2918	-12	3/4	1-1/16-12						
-12D	3/4													
-16D	1													

AN-MS Aircraft Fittings

AN913  Plug-Square Head Pipe Thread				AN914  Elbow-Internal and External Pipe Thread 90Deg				AN915  Elbow-Internal and External Pipe Thread 45Deg				AN916  Elbow - Internal Pipe Thread 90Deg				AN917  Tee- Internal Pipe Thread			
AN913 Copper	AN913 Alum	AN913 Steel	AN913 Pipe Size	AN914 Copper	AN914 Alum	AN914 304 CRES	AN914 Pipe Size	AN915 Copper	AN915 Alum	AN915 304 CRES	AN915 Pipe Size	AN916 Copper	AN916 Alum	AN916 304 CRES	AN916 Pipe Size	AN917 Copper	AN917 Alum	AN917 304 CRES	AN917 Pipe Size
1	1D	1S	1/8	1	1D	1J	1/8	1	1D	1J	1/8	1	1D	1J	1/8	1	1D	1J	1/8
2	2D	2S	1/4	2	2D	2J	1/4	2	2D	2J	1/4	2	2D	2J	1/4	2	2D	2J	1/4
3	3D	3S	3/8	3	3D	3J	3/8	3	3D	3J	3/8	3	3D	3J	3/8	3	3D	3J	3/8
4	4D	4S	1/2	4	4D	4J	1/2	4	4D	4J	1/2	4	4D	4J	1/2	4	4D	4J	1/2
6	6D	6S	3/4	6	6D	6J	3/4	6	6D	6J	3/4	6	6D	6J	3/4	6	6D	6J	3/4
8	8D	8S	1	8	8D	8J	1	8	8D	8J	1	8	8D	8J	1	8	8D	8J	1
10	10D	10S	1-1/4	10	10D	10J	1-1/4	10	10D	10J	1-1/4	10	10D	10J	1-1/4	10	10D	10J	1-1/4

AN918  Cross-Internal Pipe Thread				AN919  Reducer-External Thread Flared Tube			AN924  Nut-Flared Tube Bulkhead Fitting			AN929  Cap Assembly Pressure Seal			AN6289  Nut (Undercut)-Flared Tube Bulkhead Fitting						
AN918 Copper	AN918 Alum	AN918 304 CRES	AN918 Pipe Size	AN919 Steel	AN919 Alum	AN919 Large Tube	AN919 Small Tube	AN924 Steel	AN924 Alum	AN924 304 CRES	AN924 Thread Size	AN929 Alum	AN929 CRES	AN929 Tube OD	AN929 Thread Size	AN6289 Steel	AN6289 Alum	AN6289 CRES	AN6289 Thread Size
1	1D	1J	1/8	0	0D	3/16	1/8	2	2D	2J	5/16-24	2	2J	1/8	5/16-24	2	D2	J2	5/16-24
2	2D	2J	1/4	1	1D	1/4	1/8	3	3D	3J	3/8-24	3	3J	3/16	3/8-24	3	D3	J3	3/8-24
3	3D	3J	3/8	2	2D	1/4	3/16	4	4D	4J	7/16-20	4	4J	1/4	7/16-20	4	D4	J4	7/16-20
4	4D	4J	1/2	3	3D	5/16	1/4	5	5D	5J	1/2-20	5	5J	5/16	1/2-20	5	D5	J5	1/2-20
6	6D	6J	3/4	4	4D	3/8	1/8	6	6D	6J	9/16-18	6	6J	3/8	9/16-18	6	D6	J6	9/16-18
8	8D	8J	1	5	5D	3/8	3/16	8	8D	8J	3/4-16	8	8J	1/2	3/4-16	8	D8	J8	3/4-16
10	10D	10J	1-1/4	6	6D	3/8	1/4	10	10D	10J	7/8-14	10	10J	5/8	7/8-14	10	D10	J10	7/8-14
				7	7D	3/8	5/16	12	12D	12J	1-1/16-12	12	12J	3/4	1-1/16-12	12	D12	J12	1-1/16-12
				8	8D	1/2	1/8	16	16D	16J	1-5/16-12	16	16J	1	1-5/16-12	16	D16	J16	1-5/16-12
				9	9D	1/2	3/16												
				10	10D	1/2	1/4	Brass Primer Fittings				Lycoming Fuel Pump Fitting							
				11	11D	1/2	5/16												
				12	12D	1/2	3/8	Part#	Description			Part#	A	Oring					
				13	13D	5/8	1/4	AN800-2	Brass Primer Fitting Union			202701-6-6S	1.3	MS29512-6					
				14	14D	5/8	3/8	AN805-2	Brass Primer Fitting Nut			202703-6-6S	2.19	MS29512-6					
				15	15D	5/8	1/2	AN4022-1	Straight Fitting			Note: These are Aeroquip commercial part#. No FAA or Lycoming approvals.							
				16	16D	3/4	1/4	AN4023-1	90Deg Fitting										
				17	17D	3/4	5/16	510-007	Copper Tube										
				18	18D	3/4	3/8												
				19	19D	3/4	1/2												
				20	20D	3/4	5/8												
				21	21D	1	1/4												
				22	22D	1	5/8												
				23	23D	1	3/4												

Safety Wire

		
1LB Dispensing Can		
Part#	Dia	Length
MS20995C20	.020	937ft
MS20995C25	.025	599
MS20995C32	.032	366
MS20995C41	.041	223
016-COPPER*	.016	
*Break-a-way Wire		

MILBAR Safety Wire Tool

Tool Type
1W393 9" Auto Return



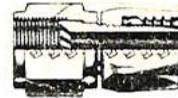
Aerospace Hoses, Hose Fittings, and Hose Assemblies

Aircraft hoses can be classified as either Rubber-Fiber or Stainless Braided. Rubber-Fiber hoses utilize reusable fittings which means that the hose can be user assembled. Stainless Braided hose is available in a user assembled series or machine assembled series.

Never equate any hose ID or OD with its Dash Number. The Dash Number of most hose series only references the OD of the tubing it is associated with. For instance, a -4 hose is commonly referred to as 1/4" hose. As a rule, no ID or OD of that hose equates to 1/4" (Stratoflex 193 ID actually is 1/4"). **Never Measure the ID or OD of a hose and directly relate it to a Dash Number. Refer to the Charted ID to convert any hose ID to a Dash Number.**

Stratoflex 193 or Aeroquip 306 Buna-N Low Pressure Hose

Application: Low pressure air and vacuum instrument systems. May also be used for low Pressure oil lines.
Construction: Seamless Buna-n
Reinforcement: One Braid of high tensile fiber cord. Covered with synthetic rubber.
Specifications: Hose meets or exceeds the requirements for MIL-H-5593
Temperature Range: -65F to 165F



Hose			Working Press PSI	Burst Press PSI	Straight Fittings		
Strato Flex	Aero Quip	Tube Size			ID	Strato Flex	Aero Quip
193-2	306-2	1/8	1/8	300	2000	311-2D	471-2D
193-3	306-3	3/16	3/16	250	1700	311-3D	471-3D
193-4	306-4	1/4	1/4	200	1250	311-4D	471-4D
193-6	306-6	3/8	3/8	150	1000	311-6D	471-6D
193-8	306-8	1/2	1/2	150	750	311-8D	471-8D
193-10	306-10	5/8	5/8	150	700	311-10D	471-10D

Stratoflex 111 or Aeroquip 303 Fiber Braided Hose

Application: Aircraft hydraulic, pneumatic, coolant, fuel and oil systems specified in MS33620
Construction: Tube - Seamless synthetic rubber
Reinforcement: One fiber braid and one high tensile steel wire band. Cover - Fiber Braid impregnated with oil and mildew resistant rubber
Specifications: Hose meets or exceeds the requirements of MIL-H-8794
Temperature Range: -40F to 250F



Hose			Working Press PSI	Burst Press PSI	Straight Fittings		
Strato Flex	Aero Quip	Tube Size			ID	Strato Flex	Aero Quip
111-3	303-3	1/8	1/8	3000	12000	300-3S	491-3
111-4	303-4	3/16	3/16	3000	12000	300-4S	491-4
111-5	303-5	1/4	1/4	3000	10000	300-5S	491-5
111-6	303-6	3/8	5/16	2000	9000	300-6S	491-6
111-8	303-8	1/2	13/16	2000	8000	300-8D	491-8
111-10	303-10	5/8	1/2	1750	7000	300-10D	491-10
111-12	303-12	3/4	5/8	1500	6000	300-12D	491-12
111-16	303-16	7/8	7/8	800	3200	300-16D	491-16

Hose		45 Fittings		90 Fittings	
Strato Flex	Aero Quip	Strato Flex	Aero Quip	Strato Flex	Aero Quip
111-3	303-3			649-3	980005-3
111-4	303-4	646-4S	980006-4	649-4	980005-4
111-5	303-5	646-5S	980006-5	649-5	980005-5
111-6	303-6	646-6S	980006-6	649-6	980005-6
111-8	303-8	646-8D	980006-8D	649-8D	980005-8D
111-10	303-10	646-10D	980006-10D	649-10D	980005-10D
111-12	303-12	646-12D	980006-12D	649-12D	980005-12D
111-16	303-16	646-16D	980006-16D	649-16D	980005-16D

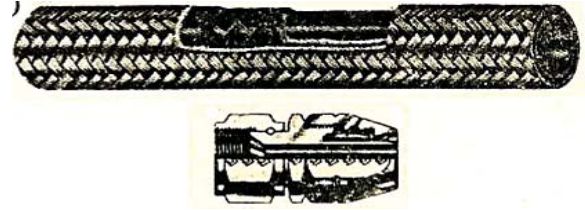
Aerospace Hoses and Hose Fittings



Stratoflex 156 or Aeroquip 601 Stainless Braided Hose

(Identical to Aeroquip AQP-FBA Hose except 601 Hose utilizes a different elastomer)

Application: Aircraft hydraulic, pneumatic, coolant, fuel and oil systems specified in MS33620
 Construction: Tube - Seamless synthetic rubber
 Reinforcement: One and one half corrosion resistant stainless steel wire band.
 Specifications: Hose meets or exceeds the requirements of MIL-H-83797
 Temperature Range: -40F to 300F



Hose				Working Press	Burst Press	Straight Fittings	
Strato Flex	Aero Quip	Tube Size	ID	PSI	PSI	Strato Flex	Aero Quip
156-3	601-3	3/16	5/32	1500	6000	676-3S	816-3
156-4	601-4	1/4	7/32	1500	6000	676-4S	816-4
156-5	601-5	5/16	9/32	1500	6000	676-5S	816-5
156-6	601-6	3/8	11/32	1500	6000	676-6D	816-6D
156-8	601-8	1/2	7/16	1250	5000	676-8D	816-8D
156-10	601-10	5/8	9/16	1250	5000	676-10D	816-10D
156-12	601-12	3/4	11/16	950	4000	676-12D	816-12D
156-16*	601-16	1	7/8	625	3000	676-16D*	816-16D*
156-20*	601-20	1-1/4	1-1/8	800	2000	676-20D*	816-20D*

Hose		45 Fittings		90 Fittings	
Strato Flex	Aero Quip	Strato Flex	Aero Quip	Strato Flex	Aero Quip
156-3	601-3	678-3S	8846-3	680-3S	8891-3
156-3	601-4	678-4S	8846-4	680-4S	8891-4
156-5	601-5	678-5S	8846-5	680-5S	8891-5
156-6	601-6	678-6D	8846-6D	680-6D	8891-6D
156-8	601-8	678-8D	8846-8D	680-8D	8891-8D
156-10	601-10	678-10D	8846-10D	680-10D	8891-10D
156-12	601-12	678-12D	8846-12D	680-12D	8891-12D
156-16*	601-16*	678-16D*	8846-16D*	680-16D*	8891-16D*
156-20*	601-20*	678-20D*	8846-20D*	680-20D*	8891-20D*

* Special Order

AE102 FIRESLEEVE - Application Chart

AE102	Clamp	111/303	MILH6000	FBA/156	FBC
-6	JS242				-3&-4
-7	JS242				-6
-8	JS242	-3		-3&-4	-8
-9	JS242	-4	-3	-6	
-10	JS242	-5	-4		
-12	JS253	-6	-5	-8	
-14					
-13	JS253	-8	-6	-10	
-16	JS253	-10	-8	-12	
-18					
-20	JS253	-12	-10		
-22	JS253		-12	-16	
-24					
-26	JS257			-20	

HOSE ASSEMBLY MANDRELS

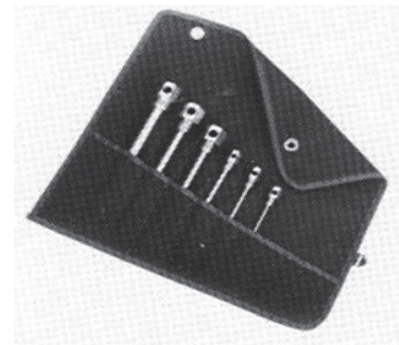
Use these mandrel tools to assemble Stratoflex 111 Hose or Aeroquip 303 Hose.



Individual Mandrels

Part#	Description
SK-3M	-3 Mandrel
SK-4M	-4 Mandrel
SK-5M	-5 Mandrel
SK-6M	-6 Mandrel
SK-8M	-8 Mandrel
SK-10M	-10 Mandrel
SK-12M	-12 Mandrel
SK-16M	-16 Mandrel
SK-1599M	-3 thru -16 Mandrel Set*

*Includes Canvas Tool Bag

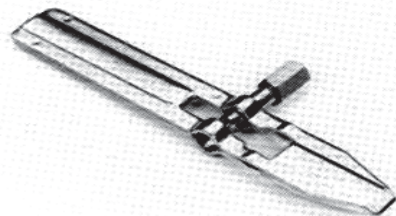


SK-1599M Set

FIRESLEEVE CLAMPING TOOLS

Thrifttool J070

The Thrifttool is a small inexpensive functional tool for use with 1/4" or 3/8" width band. Ideal for JS242 and JS253 clamps. It must be used in conjunction with a 1/2" wrench to apply tension and has no built-in cutter.



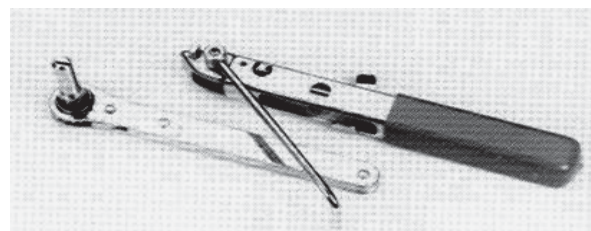
J070 Tool

Pok-It II Tool J020

Lightweight pocket size tool for use with 1/4" or 3/8" width band. Also ideal for JS242 and JS253 clamps. Tool has a ratchet tension feature and built in cutter.

FIRESLEEVE CLAMPS

SKYBOLT offers the JS242 and JS253 clamps that cover all common firesleeve requirements. Both clamps are 1/4" width. Clamps are referenced in the FIRESLEEVE APPLICATION CHART on the opposite page.



J020 Tool

IF YOU ARE CONSIDERING USING FIRESLEEVE -

All charted sizes assume that firesleeve is installed prior to the last hose fitting. Charted sizes will not allow clearance to slide firesleeve over hose fitting.

TUBING & HOSE

VINYL TUBING

For gas lines and gauges. Not affected by gasoline.

Part# VINYL316	1/4OD X 3/16ID
Part# VINYL14	5/16OD X 1/4ID
Part# VINYL38	7/16OD X 3/8ID
Part# VINYL12	9/16OD X 1/2ID

Standard Length - 10 Ft

NEOPRENE HOSE

Fuel and oil resistant tubing for use in instrument hookups and battery drains.

Part# NEOPRENE316	1/4OD X 3/16ID
Part# NEOPRENE14	5/16OD X 1/4ID
Part# NEOPRENE38	7/16OD X 3/8ID

MIL-H-6000 Fuel and OIL HOSE

A tough, extruded tube of uniform wall gauge. Highly resistant to heat, aging, and petroleum hydrocarbons. Specifically designed for high octane gasoline, and also oil, water, alcohol, and coolants. Temperature range: -40F to 250F. Use AN840 type fittings. Burst Pressure for sizes listed: 1000PSI.

Standard Length - 10 Ft

Part#	MIL-H-6000	ID
160-4	-4	1/4
160-5	-5	5/16
160-6	-6	3/8
160-8	-8	1/2
160-10	-10	5/8
160-12	-12	3/4
160-14*	-14	7/8
160-16*	-16	1

PLASTIC FITTINGS & TUBING

Nylon (White) Multi Barb Hose Fittings
-40F to +200F 125PSI Maximum

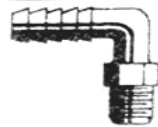
*Special Order



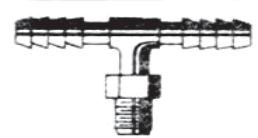
SC Series



ST Series



EL Series



P Series

Nylon Part#	Type	Size
NF14-14SC	Connector	1/4 Tube X 1/4 Tube
NF38-38SC	Connector	3/8 Tube X 3/8 Tube
NF14-18ST	Straight	1/4 Tube X 1/8 Pipe
NF14-14ST	Straight	1/4 Tube X 1/4 Pipe
NF38-14ST	Straight	3/8 Tube X 1/4 Pipe
NF14-18EL	90 Deg	1/4 Tube X 1/8 Pipe
NF38-18EL	90 Deg	3/8 Tube X 1/8 Pipe
NF38-14EL	90 Deg	3/8 Tube X 1/4 Pipe
NF14-14-14P	Tee-Pipe/Tube	1/4 X 1/4 Tube X 1/4 Pipe
NF14-14-18P	Tee-Pipe/Tube	1/4 X 1/4 Tube X 1/8 Pipe
NF38-38-14P	Tee-Pipe/Tube	3/8 X 3/8 Tube X 1/4 Pipe
NF38-38-38P	Tee-Pipe/Tube	3/8 X 3/8 Tube X 3/8 Pipe
NF14-14-14T	Tee-Tube	1/4 Tube
NF14-14-18T	Tee-Tube	3/8 to 1/8 Tube
NF38-38-38T	Tee-Tube	3/8 Tube



T Series

Plastic Tubing - Brake & Instrument Lines

Nothing beats hands-on experience when it comes to plumbing projects. Our experience of building an aircraft, such as the Van's RV4 has been very rewarding.

Skybolt began our plumbing project by reviewing our Imperial Eastman catalog, Van's information, EAA information, other supplier's information, and bits and pieces from our own customers. The tech articles from the EAA and recommendations from customers with experience was probably the most accurate once it was all said, done, and redone.

BRAKES - Nylaflow Tube with Poly-Flo Brass Fittings or Nylo-Seal with Poly-Flo Brass Fittings

Nylo-Seal Tubing was included in our RV4 kit. The construction manual implied using a brass compression fitting, which, without an insert, just would not work because of chronic leaks. We then scrapped the Nylo-Seal and considered Nyla-Flow (1/4") nylon tubing with brass Poly-Flo fittings. This combination is recommended in many kit plane articles. We concluded pressure tests and found that at 78 degrees F, the tubing failed at 1400 psi. This should be adequate for most brake applications, however, it was our desire to utilize the higher burst rated Nylo-Seal tubing.

As is, the Nylo-Seal 1/4" tubing will not fit the 1/4" brass Poly-Flo fittings. The brass 1/4" Poly-Flo fittings utilize an integral nipple or sleeve that is slightly oversize for Nylo-Seal tubing. (Note: The 1/8 and 3/16 brass fittings do not have this integral nipple). However, by inserting a #10-32 tap into the first 3/8" of the 1/4" Nylo-Seal tubing, we could install (screw) Nylo-Seal tubing onto the brass fittings. In our first test, we purposely did not slide the tubing completely onto the fitting sleeve to simulate what might happen if one were careless in constructing this type of brake line. It failed at 500 psi. We then reinstalled the tubing properly to the limits of the fitting sleeve. At 2500 psi, the limits of our pressure gauge, we experienced no failure or leaks. We elected to use the Nylo-Seal to Nylo-Flo brass fitting on our aircraft with years of perfect service.

INSTRUMENT LINES - Poly-Flo Tube with Poly-Flo Fitting

Attempting to use the Nylo-Seal (1/4") tubing without an insert provided the same problem as the brakes - leaks. Switching to the Poly-Flo Polyethylene tubing with the #259-N insert and Poly-Flo nylon fittings solved the problem. Note: For 3/16 tubing, use brass fitting with no insert.

NYLON TUBING - For Brake Lines

Tubing	Type	Fitting		Standard Length 10 Ft	
		Series	Insert	OD	Burst PSI*
22-NSR	Nylo-Seal*	Brass	NA	1/8	1400
33-NSR	Nylo-Seal*	Brass	NA	3/16	1400
44-NSR	Nylo-Seal	Brass	NA	1/4	1400
18-NF	Nylaflow*	Brass	NA	1/8	1000
33-NF	Nylaflow	Brass	NA	3/16	1000
44-NF	Nylaflow	Brass	NA	1/4	1000

*At maximum rated temperature. Nylo-Seal - Nylon-II. NylaFlow - Nylon Polypenco.

POLY-FLO TUBING - For Instrument Lines

Polyethylene Tubing

Tubing	Type	Fitting		Standard Length 10 Ft	
		Series	Insert	OD	Burst PSI*
33-PN	Poly-Flo	Brass	NA	3/16	200
44-PN	Poly-Flo	Nylon	259-N-04	1/4	200
66-PN	Poly-Flo	Nylon	259-N-04	3/8	200

*At maximum rated temperature

FITTINGS - For Plastic Tubing

259N Insert

(For Poly-Flo Tubing Only)



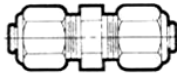
Tube OD	Brass Part#	Nylon Part#
1/4	259-P04	259-N04
3/8	259-P06	259-N06

261 Nut/Sleeve Assembly



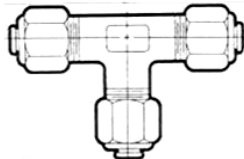
Tube OD	Brass Part#	Nylon Part#
1/8	261-UB-02	NA
3/16	261-UB-03	NA
1/4	261-UB-04	261-N04
3/8	261-P-06	261-N06

262 Union



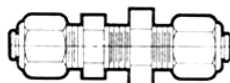
Tube OD	Brass Part#	Nylon Part#
1/8	262-P-02	NA
3/16	262-P-03	NA
1/4	262-P-04	262-N04
3/8	262-P-06	262-N06

264 Union Tee



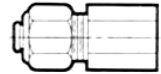
Tube OD	Brass Part#	Nylon Part#
3/16	264-P-03	NA
1/4	264-P-04	264-N04
3/8	264-P-06	264-N06

282 Bulkhead Union



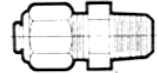
Tube OD	Brass Part#	Nylon Part#
1/4	282-P-04	282-N04
3/8	282-P-06	282-N06

266 Female Connector



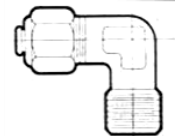
Tube OD	Pipe	Brass Part#	Nylon Part#
1/8	1/8	266-P-02X02	NA
3/16	1/8	266-P-03X02	NA
1/4	1/8	266-P-04X02	266-N0402
3/8	1/4	266-P-04X04	266-N0404
3/8	1/4	266-P-06X04	266-N0604
3/8	3/8	266-P-06X06	266-N0606

268 Male Connector



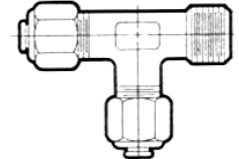
Tube OD	Pipe	Brass Part#	Nylon Part#
1/8	1/8	268-P-02X02	NA
3/16	1/8	268-P-03X02	NA
1/4	1/8	268-P-04X02	268-N0402
3/8	1/4	268-P-04X04	268-N0404
3/8	1/4	268-P-06X04	268-N0604
3/8	3/8	268-P-06X06	268-N0606

269 Male Elbow



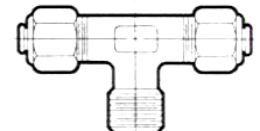
Tube OD	Pipe	Brass Part#	Nylon Part#
1/8	1/8	269-P-02X02	NA
3/16	1/8	269-P-03X02	NA
1/4	1/8	269-P-04X02	269-N04X02
3/8	1/4	269-P-04X04	269-N04X04
3/8	1/4	269-P-06X04	269-N06X04
3/8	3/8	269-P-06X06	269-N06X06

271 Male Run Tee



Tube OD	Pipe	Brass Part#	Nylon Part#
3/16	1/8	271-P-03X02	NA
1/4	1/8	271-P-04X02	271-N0402
3/8	1/4	271-P-04X04	271-N0404
3/8	1/4	271-P-06X04	271-N0604
3/8	3/8	271-P-06X06	271-N0606

272 Male Branch Tee



Tube OD	Pipe	Brass Part#	Nylon Part#
3/16	1/8	272-P-03X02	NA
1/4	1/8	272-P-04X02	272-N0402
3/8	1/4	272-P-04X04	272-N0404
3/8	1/4	272-P-06X04	272-N0604
3/8	3/8	272-P-06X06	272-N0606

CONTROL CABLE

- 1x19** NON-FLEXIBLE AIRCRAFT CABLE- Made to specifications MIL-C-69040 (galvanized and MIL-C-5693 (stainless). 1x19 cable has one strand of nineteen wires. It has more metallic area than 7x7 or 7x19 cable which makes it stronger but least flexible. 1x19 cable is generally used for bracing purposes.
- 7x7** FLEXIBLE AIRCRAFT CABLE- Made to specification MIL-W-83420* (galvanized and stainless). 7x7 cable has seven strands of seven wires each. It is used for control purposes where extreme flexibility is not required but abrasion is a factor.
- 7x19** FLEXIBLE AIRCRAFT CABLE- Made to specifications MIL-W-83420* (galvanized and stainless 7x19 cable has seven strands of nineteen wires each. Its great metallic area makes it stronger than 7x7 cable. Because of its fine wires, the best service is obtained where abrasion is not too severe. The 7x19 cable is the most flexible to meet severe bending requirements.



1x19



7x7



7x19

Cable Dia	Breaking Strength	
	Galvanized	Stainless
1/16	500lbs	500lbs
3/32	1200	1200
1/8	2100	2100
5/32	3300	3300
3/16	4700	4700

Cable Dia	Breaking Strength	
	Galvanized	Stainless
1/16	480lbs	480lbs
3/32	920	920
1/8	1700	1700
5/32	2600	2600
3/16	3700	3700

Cable Dia	Breaking Strength	
	Galvanized	Stainless
1/16		
3/32	920lbs	920lbs
1/8	2000	1760
5/32	2800	2400
3/16	4200	3700

*MIL-W-83420 replaces MIL-W-1511 and MIL-w-5424B. Note: Aircraft and commercial cable differ. Aircraft cable utilizes special lubricants for better fatigue life. SKYBOLT will only provide certified aircraft cable meeting military specifications.

NICOPRESS OVAL SLEEVES

Copper, Zinc plated Copper, and Tin plated Copper (specifically designed for stainless cable)

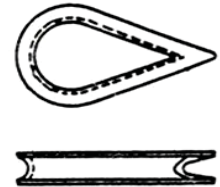
Copper	Zinc Copper	Tin Copper	Cable Dia
18-1-C	28-1-C	428-2-VC	1/16
18-2-G	28-2-G	428-3-VG	3/32
18-3-M	28-3-M	428-4-VM	1/8
18-4-P	28-4-P	428-5-VP	5/32
18-6-X	28-6-X	428-6-VX	3/16
18-10-F6	28-10-F6	428-8-VF6	1/4



AN100-Thimble

Carbon Steel- Cadmium plated per QQ-P-416 CRES. Replace dash(-) with C to denote CRES.

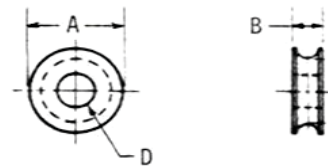
AN100	Cable Dia
-3	1/16, 5/64
-4	3/32, 7/64, 1/8
-5	5/32
-6	3/16
-7	7/32
-8	1/4
-10	5/16



AN111- CABLE BUSHING. Low Carbon Steel - Cadmium Plated per QQ-P-421. CRES.

Replace dash with C for CRES.

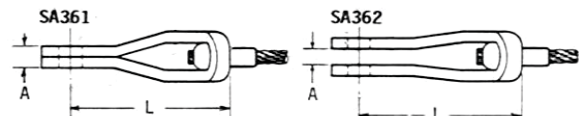
AN111	Cable Size	A	B	D
-3	1/16, 5/64, 3/32	.437	.156	.187
-4	1/8	.468	.187	.187
-5	5/32	.562	.218	.250
-6	3/16	.687	.250	.312
-7	7/32	.875	.270	.375
-8	1/4	1.000	.312	.375
-10	5/16	1.312	.375	.437
-12	3/8	1.500	.437	.500



SA361 EYE END STRAP. CRES

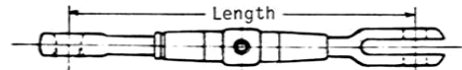
SA362 FORK END STRAP. CRES.

SA361	Wire Rope Diameter	Pin Hole Diameter	L	SA361 A	SA362 A
-2	1/16	.188	1.0625	.088	.093
-3	3/32	.188	1.5000	.103	.108
-4	1/8	.188	1.6250	.190	.195

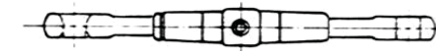


AN130 AN135 AN140 AN150 -TURNBUCKLE ASSEMBLY.

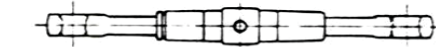
Dash #	Length (Min)		Takeup		Thread	Strength
	AN130	Others	AN130	Others		
-5S*	2-3/8	2-1/8	3/8	7/16	#4-48	550LBS
-8S	4-1/2	4-1/2	1-1/4	1-3/8	#6-40	800
-16S	4-1/2	4-1/2	1-1/8	1-1/8	#10-32	1600
-16L	8	8	2-7/8	2-7/8	#10-32	1600
-22S	4-17/32	4-1/2	1	1	1/4-28	2200
-22L	8-1/32	8	2-3/4	2-3/4	1/4-28	2200
-32S	4-19/32	4-1/2	7/8	7/8	1/4-28	3200
-32L	8-7/64	8	2-5/8	2-5/8	1/4-28	3200
-46S	4-21-32	4-1/2	5/8	5/8	5/16-24	4600
-46L	8-5/32	8	2-3/8	2-3/8	5/16-24	4600
-61L	8-9/32	8	2-1/8	2-1/8	3/8-24	6100
-80L	8-5/16	8	2-1/8	2/18	3/8-24	8000
-125L	9-1/16	9	2-1/16	2-1/16	7/16-20	12500
-175L	9-9/16	9-1/2	2-1/16	2-1/16	1/2-20	17500



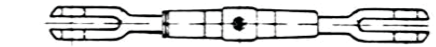
AN130- AN170 Cable Eye, AN161 Fork, AN155 Barrel



AN135- AN170 Cable Eye, AN165 Pin Eye, AN155 Barrel



AN140- AN170 Cable Eye(2), AN155 Barrel



AN150- AN161 Fork(2), AN155 Barrel

* AN135S not available. An150-5s Length =2-5/8", Takeup =5/16". Replace-22S & -22L with -32S & -32L.

AN145 AN146 AN147 - TURNBUCKLE ASSEMBLY.

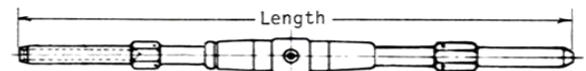
Part#	Length (Min)		Takeup	Thread	Strength
	AN145/146	AN147			
-8S	5-5/8	6-3/4	1-3/8	#6-40	480LBS
-8L*	-----	11-1/4	3-1/8	#10-32	480
-16S	5-3/4	7	1-1/8	#10-32	920
-16L	9-1/4	10-1/2	2-7/8	1/4-28	920
-22S	5-15/16	7-7/16	1	1/4-28	2000
-22L	9-7/16	10-15/16	2-3/4	1/4-28	2000
-32S	6-3/16	7-7/8	7/8	1/4-28	2800
-32L	9-11/16	11-3/8	2-5/8	1/4-28	2800
-46S	6-3/8	8-1/4	5/8	5/16-24	4200
-46L	9-7/8	11-3/4	2-3/8	5/16-24	4200
-61L	10-1/16	12-1/16	2-1/8	3/8-24	5600
-80L	10-3/8	12-11/16	2-1/8	3/8-24	7000
-125L	11-3/16	13-5/16	2-1/16	7/16-20	8000
-175L	11-3/4	14	2-1/16	1/2-20	9800



AN145- AN669 Terminal, AN165 Pin Eye, AN155 Barrel



AN146- AN669 Terminal, AN161 Fork, AN155 Barrel



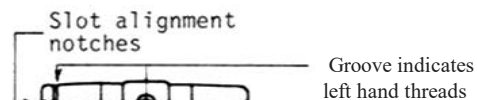
AN147- AN669 Terminal(2), AN155 Barrel

* Size 8L available as AN147 only. Part#s listed are for Cres Swaging terminals. Add F before dash # for carbon steel terminals. Replace-22S & -22L with -32S & -32L.

MS21251 Supersedes AN155 and NAS649 - TURNBUCKLE BARREL.

Brass per QQ-B-637. Alun Aluminum per WW-T-700/3. Letter following dash# indicates length (short or long). MS21251 items can replace AN155 items. MS21251 items are interchangeable with NAS649 items.

MS21251	Use Cliplock		Wire Rope		Strength
	MS21256	AN155	Diameter	L	
---	--	-5S	----	1-3/16	550LBS
B2S	-1	-8S	1/16	2-1/4	800
B2L	-2	-8L	1/16	4	800
B3S	-1	-16S	3/32	2-1/4	1600
B3L	-2	-16L	3/32	4	1600
B5S	-1	-32S	5/32	2-1/4	3200
B5L	-2	-32L	5/32	4	3200
B6S	-1	-46S	3/16	2-1/4	4600
B6L	-2	-46L	3/16	4	4600
B8L	-2	-80L	1/4	4	8000
B9L	-3	-125L	9/32	4-1/4	12500
B10L	-3	-175L	5/16	4-1/4	17500



MS21251 Barrel



AN155 Barrel

Note: Use -5 parts with 1/8" diameter wire rope, minimum breaking strength 2200 LBS as per drawing. For applications requiring AN155-22S or -22L use AN155-32S or 32L respectively. Replace B with A to denote aluminum.

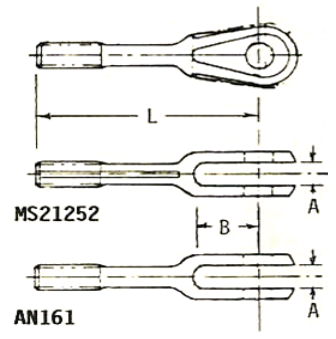
TURNBUCKLE COMPONENTS



MS2152 Supercedes AN161 and NAS645- TURNBUCKLE FORK.

Steel- Cadmium plated per QQ-PP-41+. First letter denotes thread (Left or Right). Second letter denotes long or short. MS2152 can replace AN161.

MS2152-		AN161		Wire Rope		Pin Hole		L	A	B	Thread	Strength
RH	LH	RH	LH	Diameter	Diameter							
-----	-----	5RS	5LS	-----	.164	1.063	.150	.375	#4-48	500LBS		
2RS	2LS	8RS	8LS	1/16	.190	1.500	.109	.375	#6-40	800		
3RS	3LS	16RS	16LS	3/32	.190	1.625	.156	.375	#10-32	1600		
3RL	3LL	16RL	16LL	3/32	.190	2.500	.156	.375	#10-32	1600		
4RS	4LS	22RS	22LS	1/8	.190	1.844 (1)	.195 (4)	.531 (5)	1/4-28	2200		
4RL	4LL	22RL	22LL	1/8	.190	2.734 (2)	.195 (4)	.531 (5)	1/4-28	2200		
5RS	5LS	32RS	32LS	5/32	.250	1.844	.218	.531	1/4-28	3200		
5RL	5LL	32RL	32LL	5/32	.250	2.734	.218	.531	1/4-28	3200		
6RS	6LS	46RS	46LS	3/16	.313	2.031	.250	.656	5/16-24	4600		
6RL	6LL	46RL	46LL	3/16	.313	2.906	.250	.656	5/16-24	4600		
8RL	8LL	61RL	61LL	1/4	.375	3.188 (3)	.270	.875 (6)	3/8-24	6100		
8RL	8LL	80RL	80LL	1/4	.375	3.188	.312	.875	3/8-24	8000		
9RL	9LL	125RL	125LL	9/32	.438	3.438	.375	1.000	7/16-20	125000		
10RL	10LL	175RL	175LL	5/16	.500	3.688	.437	1.188	1/2-20	17500		



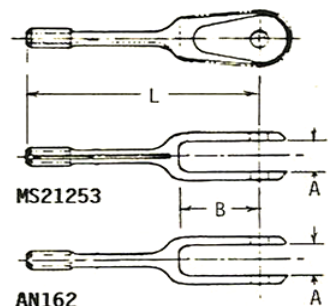
(1) AN161=1.179 (2) AN161=2.594 (3) AN161=3.156 (4) AN161=.187 (5) AN161=.469
(6) AN161=.843

MS21253 Supercedes AN162 and NAS646- CLEVIS END TURNBUCKLE, FOR BEARING.

Steel- Cadmium plated per QQ-P-416. First letter denotes thread (Left or Right). Second letter denotes long or short. MS21253 can replace AN162.

MS21253 and NAS646 are interchangeable.

MS21253- or AN162-		MS/AN	Wire Rope	Pin Hole	L	A	B	Thread	Strength
RH	LH	Bearing	Diameter	Diameter					
3RS	3LS	200KP3	3/32	.190	2.312	.312	1.062	#10-32	1600
3RL	3LL	200KP3	3/32	.190	3.187	.312	1.062	1/4-28	2200
4RS	4LS	200KP4	1/8	.250	2.562	.500	1.188	1/4-28	2200
4RL	4LL	200KP4	1/8	.250	3.437	.500	1.188	5/16-24	3200
5RS	5LS	200KP4	5/32	.250	2.687	.500	1.188	5/16-24	3200
5RL	5LL	200KP4	5/32	.250	3.562	.500	1.188	5/16-24	3200
6RS	6LS	200KP5	3/16	.313	2.750	.563	1.313	5/16-24	4600
6RL	6LL	200KP5	3/16	.313	3.625	.563	1.313	5/16-24	4600



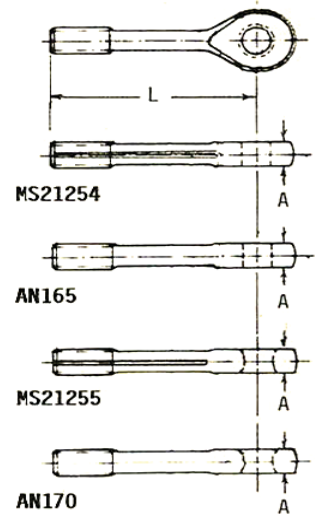
MS21254 Supercedes AN165 and NAS648- EYE END TURNBUCKLE, FOR PIN

MS21255 Supercedes AN170 and NAS647 EYE END TURNBUCKLE, FOR WIRE ROPE.

Steel- Cadmium plated per QQ-P-416. First letter denotes thread (left of right).

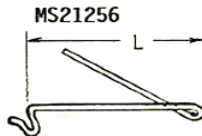
Second letter denotes long or short. MS parts can replace AN parts. MS parts are interchangeable with NAS parts.

MS21254- MS21255-		AN165- AN170-		Wire Rope	21254	21255	L	A	Thread	Strength
RH	LH	RH	LH	Diameter	Hole Dia.	Hole Dia.				
-----	-----	5RS	5LS	1/16	-----	.172	.813	.125	#4-48	550LBS
2RS	2LS	8RS	8LS	1/16	.190	.188	1.500	.125	#6-40	800
2RL	2LL	-----	-----	1/16	.190	.188	2.375	.125	#6-40	800
3RS	3LS	16RS	16LS	3/32	.190	.219	1.625	.188	#10-32	1600
3RL	3LL	16RL	16LL	3/32	.190	.219	2.500	.188	#10-32	1600
5RS	5LS	22RS	22LS	5/32	.250	.281 (1)	1.750 (3)	.219	1/4-28	2200
5RL	5LL	22RL	22LL	5/32	.250	.281 (1)	2.625 (4)	.219	1/4-28	2200
5RS	5LS	32RS	32LS	5/32	.250	.281	1.750	.219	1/4-28	3200
5RL	5LL	32RL	32LL	5/32	.250	.281	2.625	.219	1/4-28	3200
6RS	6LS	46RS	46LS	3/16	.313	.313	1.875	.281	5/16-24	4600
6RL	6LL	46RL	46LL	3/16	.313	.313	2.750	.281	5/16-24	4600
8RL	8LL	61RL	61LL	1/4	.375	.375 (2)	2.875	.328 (5)	3/8-24	6100
8RL	8LL	80RL	80LL	1/4	.375	.375	2.875	.328	3/8-24	8000
9RL	9LL	125RL	125LL	9/32	.438	.469	3.375	.375	7/16-20	12500
10RL	10LL	175RL	175LL	5/16	.500	.563	3.625	.469	1/2-20	17500



MS21256- TURNBUCKLE LOCKING CLIP. CRES.

MS21256-	Use With	
	L	MS21251
-1	1.115	B2S, B3S, B5S, B6S
-2	2.000	B2L, B3L, B5L, B6L, B8L
-3	2.140	B9L, B10L

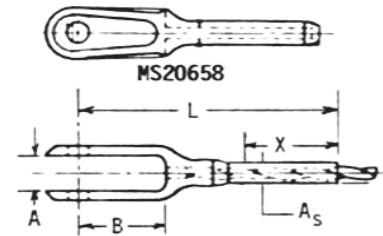


MS20658 Supercedes AN658 - Terminal, Wire Rope swaging, Fork End, For Bearing

Carbon Steel - Cadmium plated per QQ-P-416. Cres - Passivated. Parts are interchangeable. Replace dash (-) with F to denote Carbon Steel.

MS20658	BEARING	Diameter	Diameter	L	A	B	Min*	As*	Strength
-3	200KP3	3/32	.190	2.531	.302	1.062	.80	.190	920LBS
-4	200KP4	1/8	.250	3.062	.489	1.188	1.05	.219	2000
-5	200KP4	5/32	.250	3.313	.489	1.188	1.29	.250	2800
-6	200KP4	3/16	.250	3.562	.489	1.188	1.31	.313	4200
-7	200KP5	3/16	.313	3.687	.563	1.313	1.31	.313	4200

*Swaged terminal shall conform to As diameter for length 'X'.



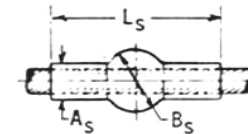
MS20663 Supercedes AN663 - Swaging Terminal, Double Shank.

MS20664 Supercedes AN664 - Swaging Terminal, Single Shank.

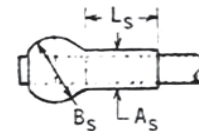
Carbon Steel - Cadmium plated per QQ-PP-416. Cres- Passivated. Part are interchangeable. Replace dash (-) with C to denote CRES.

MS20663	Cable	Ms	Ms	As	Bs	Strength
-2	1/16	.390	.156	.112	.190	480LBS
-3	3/32	.578	.234	.143	.253	920
-4	1/8	.765	.313	.190	.315	2000
-5	5/32	.953	.391	.222	.379	2800
-6	3/16	1.140	.469	.255	.442	4200
-7	7/32	1.328	.547	.302	.505	5600
-8	1/4	1.515	.625	.348	.567	7000
-9	9/32	1.719	.750	.382	.632	8000
-10	5/16	1.875	.813	.413	.694	9800

Note: Dimensions are after swaging.



MS20663



MS20664

MS20667 Supercedes AN667 - Terminal, Wire Rope Swaging, Fork End.

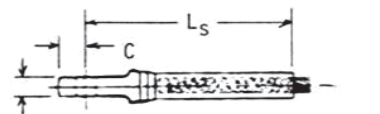
MS20668 Supercedes AN668 - Terminal, Wire, Rope Swaging, Eye End.

Carbon Steel - Cadmium plated per QQ-P-416. 300 Series CRES-Passivated. Parts are interchangeable. Replace dash (-) with F to denote Carbon Steel.

MS20667	Wire Rope	Pin Hole	Ms	A7	A8	B	C	Strength
-2	1/16	.190	1.75	.093	.088	.500	.180	480LBS
-3	3/32	.190	2.06	.108	.103	.670	.219	920
-4	1/8	.190	2.61	.195	.190	.735	.250	2000
-5	5/32	.250	3.00	.202	.197	.800	.320	2800
-6	3/16	.313	3.24	.260	.255	.880	.391	4200
-7	7/32	.313	3.74	.296	.291	.970	.407	5600
-8	1/4	.375	4.10	.313	.307	1.070	.484	7000
-9	9/32	.438	4.48	.327	.322	1.170	.555	8000
-10	5/16	.438	4.86	.348	.343	1.268	.609	9800



MS20667



MS20668

MS21259 Supercedes AN666 - Terminal, Wire Rope Stud (Not for use with Turnbuckle Barrels).

MS21260 Supercedes AN669 and NAS650 - Terminal, Wire Rope Stud.

Carbon Steel- Cadmium plated per QQ-P-416. 300 Series CRES-Passivated.

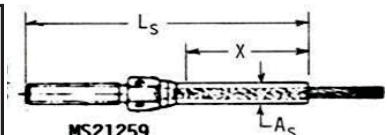
MS parts can replace AN parts. MS parts are interchangeable with Nas parts.

Hexagonal facing may be eliminated by optional design.

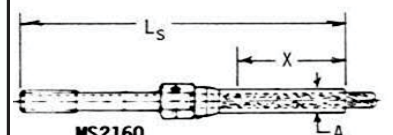
MS21259		MS21260		Wire Rope	MS21259	MS21260	X	Min*	As	Thread	Strength
RH	LH	RH	LH	Diameter	Ls	Ls					
-2RH	-2LH	-L2RH	L2LH	1/16	2.65	3.67	.70	.138	#6-40	480LBS	
		-S2RH	S2LH	1/16		2.79	.70	.138	#6-40	480	
-3RH	-3LH	-L3RH	L3LH	3/32	3.00	3.86	.80	.190	#10-32	920	
		-S3RH	S3LH	3/32		2.98	.80	.190	#10-32	920	
-4RH	-4LH	-L4RH	L4LH	1/8	3.59	4.28	1.05	.219	1/4-28	2000	
		-S4RH	S4LH	1/8		3.40	1.05	.219	1/4-28	2000	
-5RH	-5LH	-L5RH	L5LH	5/32	3.97	4.66	1.29	.250	1/4-28	2800	
		-S5RH	S5LH	5/32		3.78	1.29	.250	1/4-28	2800	
-6RH	-6LH	-L6RH	L6LH	3/16	4.17	4.78	1.31	.313	5/16-24	4200	
		-S6RH	S6LH	3/16		3.90	1.31	.313	5/16-24	4200	
-7RH	-7LH	-7RH	-7LH	7/32	4.81	5.21	1.55	.375	3/8-24	5600	
-8RH	-8LH	-8RH	-8LH	1/4	5.24	5.52	1.70	.438	3/8-24	7000	
-9RH	-9LH	-9RH	-9LH	9/32	5.75	5.90	1.89	.500	7/16-20	8000	
-10RH	-10LH	-10RH	-10LH	5/16	6.27	6.30	2.06	.563	1/2-20	9800	

* Swaged terminal shall conform to As diameter for length 'X'. Sizes continue to

-32RH/LH for 1" diameter cable. Ls dimensions are after swaging.



MS21259

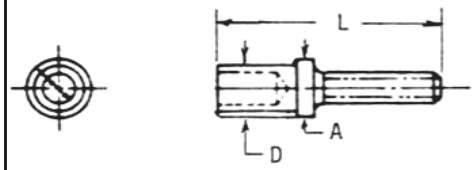


MS21260

AN490 -THREADED ROD END. 4130 Steel- Cadmium Plated per QQ-P-416.



AN490	L	A	D	Tube Size	Thread
HT5P	1.750	.312	.242	5/16	x .035 1/4-28
HT6P	1.750	.375	.305	3/8	x .035 1/4-28
HT8P	1.750	.500	.430	1/2	x .035 1/4-28
HT10P	1.812	.625	.555	5/8	x .035 5/16-24
HT11P	1.812	.750	.680	3/4	x .035 5/16-24
HT13P	1.812	.625	.555	5/8	x .035 3/8-24
HT14P	1.812	.750	.680	3/4	x .035 3/8-24
HT15P	1.812	.500	.372	1/2	x .035 5/16-24
HT16P	1.812	.500	.372	1/2	x .035 3/8-24



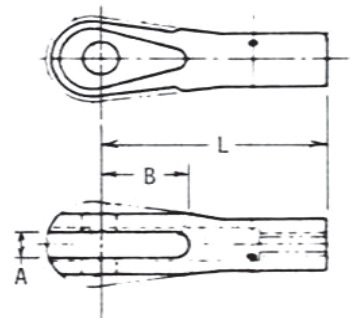
* HT 15 replaces HT9. HT16 replaces HT12.

AN665 - TERMINAL, THREADED CLEVIS TIE ROD.

Steel. Letter R denotes right threads. Letter L denotes left threads.

AN665 Pin hole

RH	LH	Dia	L	A	B	Thread	Strength
10R	10L	.190	1.313	.109	.375	#6-40	1200LB
12R	21L	.190	1.531	.150	.150	#10-32	2400
34R	34L	.250	1.813	.203	.625	1/4-28	4200
46R	46L	.313	1.875	.203	.656	5/16-24	4600*
61R	61L	.375	2.000	.203	.844	5/16-24	6900
80RA	80LA	.375	2.250	.266	.875	3/8-24	10000
115R	115L	.438	2.500	.344	1.000	7/16-20	13700
155R	155L	.500	2.813	.406	1.188	1/2-20	18500
202R	202L	.563	3.125	.453	1.375	9/16-18	24000
247R	247L	.625	3.375	.516	1.500	5/8-18	29500
430R	430L	.750	4.125	.656	1.938	3/4-16	42000
580R	580L	.875	4.875	.781	2.313	7/8-14	58000
780R	780L	1.000	5.750	.906	2.688	1/12	76000



*Special for use with 6900LB rod with 4600LB rating.

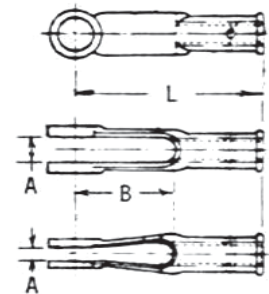
MS27975 Supercedes AN486 - CLEVIS, ROD END ADJUSTING. Parts are interchangeable.

Carbon Steel- Cadmium Plated per QQ-P-416.

Pin hole

Ultimate (MIN)

MS27975	AN486	Type	Dia	L	A	B	Thread	Axial Load (LB)
-1	-1	Wide	.250	1.875	.266	1.000	1/4-28	3800
-2	-2	Narrow	.250	1.875	.141	1.000	1/4-28	2850
-3	-3	Wide	.188	1.875	.266	1.000	1/4-28	4700
-4	-4	Narrow	.188	1.875	.141	1.000	1/4-28	3500



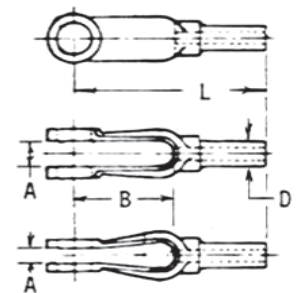
MS27976 Supercedes AN481 - CLEVIS, ROD END, PLAIN. Parts are interchangeable.

Steel- Unplated. Steel- Cadmium plated per QQ-P-416.

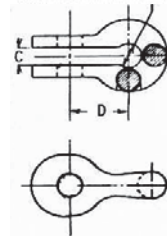
Hole

Ultimate (Min)

MS27976	AN481	Type	Dia	L	A	B	D	Axial Load(LBS)
-1	-1	Wide	.250	1.875	.266	1.000	.305	3800
-2	-2	Narrow	.250	1.875	.141	1.000	.305	2850
-3	-3	Wide	.188	1.875	.266	1.000	.305	4700
-4	-4	Narrow	.188	1.875	.141	1.000	.305	3500
-5	-5	Wide	.250	1.875	.266	1.000	.242	3800
-6	-6	Narrow	.250	1.875	.141	1.000	.242	2850
-7	-7	Wide	.188	1.875	.266	1.000	.242	4700
-8	-8	Narrow	.188	1.875	.141	1.000	.242	3500
-9	-9	Wide	.250	1.875	.266	1.000	.430	3800
-10	-10	Narrow	.250	1.875	.141	1.000	.430	2850
-11	-11	Wide	.188	1.875	.266	1.000	.430	4700
-12	-12	Narrow	.188	1.875	.141	1.000	.430	3500



MS20115 Supercedes **AN115**- WIRE ROPE SHACKLE. Parts are not interchangeable.
 Example part # : MS20115-3 (CRES) , MS20115F3 (CROME STEEL) , MS20115K3 (Nickel Copper Aluminum Alloy) , AN115-16 (Cadmium Plated Steel), AN115C21 (CRES), AN115K32 (Nickel Copper Aluminum Alloy).



MS20115	Wire Rope Dia.	Pin Hole Dia.	A	B	C	Min. Break Strength	AN115	Pin Hole Dia.	A	B	C	Min Break Strength
-2	1/16	.190	.188	.562	.093	480LBS	-8	.188	.250	.563	.109	800LBS
-3	3/32	.190	.219	.562	.108	920	-16	.188	.250	.563	.150	1600
-4	1/8	.190	.250	.562	.195	2000	-21	.188	.250	.563	.150	2100
-5	5/32	.250	.281	.750	.202	2800	-32	.250	.375	.750	.203	3200
-6	3/16	.313	.75	.812	.260	4200	-46	.313	.438	.813	.203	4600
-7	7/32	.313	.406	.875	.296	5600	-61	.375	.500	.875	.203	6100
-8	1/4	.375	.438	1.000	.313	7000	-80	.375	.438	1.000	.266	8000
-9	9/32	.438	.500	1.000	.327	8000	-125	.438	.625	1.125	.344	12500
-10	5/16	.438	.594	1.125	.348	9800	-175	.500	.625	1.250	.406	17500
-12	3/8	.500	.625	1.250	.380	14000						

AIRCRAFT PULLEYS

MS20219 Supercedes **AN219**- Secondary Control Pulley.

Metallic Sheaves : Aluminum alloy -T351 or AMS, T351. Anodized per MIL-A-8625.

Nonmetallic Sheaves: Phenolic. Replace dash (-) with A to denote metallic sheaves.

NOTE: Pulleys smaller than 2- shall not be installed in flight control systems.

MS20220 Supercedes **AN220** - Flight Control Pulley.

Metallic Sheaves: Aluminum alloy - T351 or AMS 4037,T351. Anodized per MIL-A-8625.

Non metallic Sheaves: Phenolic. Replace dash (-) with A to denote metallic sheave.

MS20221 Supercedes **AN221** - Heavy Duty Control Pulley.

Metallic Sheaves : Aluminum alloy - T351 or AMS4037, T351. Anodized per MIL-A-8625.

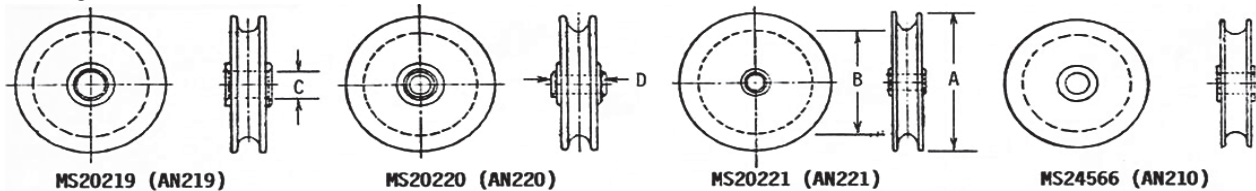
Nonmetallic Sheaves: Phenolic. Replace dash (-) with A to denote metallic sheaves.

Note: The -1 nonmetallic pulley removed from this standard and applicable specification.

MS24566 Supercedes **AN210** - Anti- Friction Bearing Control Pulley.

Phenolic.

NOTE: -1B and -3B shall not be installed on frequently used aircraft controls to bend cable more 15 from a straight line.



Part #	Cable Dia.	A	B	Bore C	D	Allowable Limit Load	Limit Load on Cable Independent of Wrap Angle			Bearing (Ref)
							1/16 cable	3/32 cable		
MS20219-1	1/16,3/32	1.312	1.000	.2500	.438	480LBS	307LBS	460LBS		W4AK(1)
-2	1/16,3/32	1.750	1.438	.2500	.438	480	307	460		P4K
-3	1/16,3/32	1.750	1.438	.6250	.438	480	307	460		P10K
-4	1/16,3/32	2.625	2.312	.2500	.438	920	307	460		P4K
-5	1/16,3/32	2.625	2.312	.6250	.438	920	307	460		P10K
							1/8 cable 5/32 cable 3/16 cable			
MS20220-1	1/8,5/32,3/16	1.750	1.250	.3125	.625	500	830	1040	1250	P5K
-2	1/8,5/32,3/16	3.000	2.500	.3125	.625	1680	830	1040	1250	PD5K
-3	1/8,5/32,3/16	4.250	3.750	.3125	.625	2500	830	1040	1250	PD5K
-4	1/8,5/32,3/16	5.500	5.000	.3125	.625	2500	830	1040	1250	PD5K
							3/16 cable 7/32 cable 1/4 cable			
MS20221A1	3/16,7/32,1/4	2.625	2.000	.3125	.625	2800	2620	3060	3500	PD5K
-2	3/16,7/32,1/4	4.125	3.500	.5000	.750	4900	2620	3060	3500	P8
-3	3/16,7/32,1/4	5.625	5.000	.5000	.750	7000	2620	3060	3500	P8
MS24566-1B	1/16,3/32	1.250	.972	.1900	.297	300				KP3AK
-2B	1/16,3/32	2.500	2.222	.1900	.297	500				KP3K
-3B	1/8,5/32,3/16	2.000	1.510	.2500	.484	600				KP4K
-4B	1/8,5/32,3/16	3.500	3.010	.2500	.484	1200				KP4K
-5B	3/16,7/32,1/4	5.000	4.374	.3750	.620	3000				KP6
-6B	3/16,7/32,1/4	6.000	5.374	.3750	.620	4000				KP6

(1) P4K is an approved alternate for W4AK.

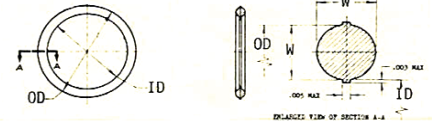
MS28775 Supersedes AN6227 (O'Ring Packing) and AN6230

(O'Ring Gasket) for Hydraulic Oils (MIL-H-5606B).

TYPE II SYSTEMS @-65 to 275 F.

MS29513- O'Ring Packing for Jet Fuels @-65 TO 275 F.

All AN-MS-NAS Mil-Spec O'Rings are available with manufacturer certification.



1/16" WIDTH			3/32" WIDTH			1/8" WIDTH			3/16" WIDTH			
ID	AN6227	MS29513	OD	AN6227	MS29513	OD	AN6230	MS29513	OD	AN6227	MS29513	OD
1/16		-003	3/16		-102	1/4						
5/64		-004	13/64									
3/32		-005	7/32		-103	9/32						
1/8	B1	-006	1/4		-104	5/16						
5/32	B2	-007	9/32		-105	11/32						
3/16	B3	-008	5/16		-106	3/8		-201	7/16			
7/32	B4	-009	11/32		-107	13/32						
1/4	B5	-010	3/8		-108	7/16		-202	1/2			
5/16	B6	-011	7/16		-109	1/2		-203	9/16			
3/8	B7	-012	1/2	B8	-110	9/16		-204	5/8			
7/16		-013	9/16	B9	-111	5/8		-205	11/16		-309	13/16
1/2		-014	5/8	B10	-112	11/16		-206	3/4		-310	7/8
9/16		-015	11/16	B11	-113	3/4		-207	13/16		-311	15/16
5/8		-016	3/4	B12	-114	13/16		-208	7/8		-312	1
11/16		-017	13/16	B13	-115	7/8	6227	-209	15/16		-313	1-1/16
3/4		-018	7/8	B14	-116	15/16	B15	-210	1		-314	1-1/8
13/16		-019	15/16		-117	1	B16	-211	1-1/16		-315	1-3/16
7/8		-020	1		-118	1-1/16	B17	-212	1-1/8		-316	1-1/4
15/16		-021	1-1/16		-119	1-1/8	B18	-213	1-3/16		-317	1-5/16
1		-022	1-1/8		-120	1-3/16	B19	-214	1-1/4		-318	1-3/8
1-1/16		-023	1-3/16		-121	1-1/4	B20	-215	1-5/16		-319	1-7/16
1-1/8		-024	1-1/4		-122	1-5/16	B21	-216	1-3/8		-320	1-1/2
1-3/16		-025	1-5/16		-123	1-3/8	B22	-217	1-7/16		-321	1-9/16
1-1/4		-026	1-3/8		-124	1-7/16	B23	-218	1-1/2		-322	1-5/8
1-5/16		-027	1-7/16		-125	1-1/2	B24	-219	1-9/16		-323	1-11/16
1-3/8		-028	1-1/2		-126	1-9/16	B25	-220	1-5/8		-324	1-3/4
1-7/16					-127	1-5/8	B26	-221	1-11/16			
1-1/2		-029	1-5/8		-128	1-11/16	B27	-222	1-3/4	B28	-325	1-7/8
1-9/16					-129	1-3/4	6230					
1-5/8		-30	1-3/4		-130	1-13/16	B1	-223	1-7/8	B29	-326	2
1-11/16					-131	1-7/8						
1-3/4		-31	1-7/8		-132	1-15/16	B2	-224	2	B30	-327	2-1/8
1-13/16					-133	2						
1-7/8		-32	2		-134	2-1/16	B3	-225	2-1/8	B31	-328	2-1/4
1-15/16					-135	2-1/8						
2		-33	2-1/8		-136	2-3/16	B4	-226	2-1/4	B32	-329	2-3/8
2-1/16					-137	2-1/4						
2-1/8		-34	2-1/4		-138	2-5/16	B5	-227	2-3/8	B33	-330	2-1/2
2-3/16					-139	2-3/8						
2-1/4		-35	2-3/8		-140	2-7/16	B6	-228	2-1/2	B34	-331	2-5/8
2-5/16					-141	2-1/2						
2-3/8		-36	2-3/4		-142	2-9/16	B7	-229	2-5/8	B35	-332	2-3/4
2-7/16					-143	2-5/8						
2-1/2		-37	2-5/8		-144	2-11/16	B8	-230	2-3/4	B36	-333	2-7/8
2-9/16					-145	2-3/4						
2-5/8		-38	2-3/4		-146	2-13/16	B9	-231	2-7/8	B37	-334	3
2-11/16					-147	2-7/8						
2-3/4		-39	2-7/8		-148	2-15/16	B10	-232	3	B38	-335	3-18
2-13/16					-149	3						
2-7/8		-40	3		-150	3-1/16	B11	-233	3-1/8	B39	-336	3-1/4
3					-151	3-3/16	B12	-234	3-1/4	B40	-337	3-3/8
Continue to:		-50	5-3/8		-178	9-15/16		-284	18-1/4		-395	26-3/8

* Sizes (-029 thru -050), (-102 thru -178), (-201 thru -209), (-248 thru -270), (-271 thru -284), (-309 thru -324), (-350 thru -365), (-366 thru -395), and (-461 thru -465), do not have installation control per MIL -G-5514 and are not recommended for use in hydraulic systems. These sizes are only recommended for use in low pressure static or face seal application. O'Ring sizes (-013 thru -028), (-117 thru -149), and (-223 thru -247) are intended only for use as static seal and are not to be used in applications involving reciprocating or rotary involvement.

MILITARY SPECIFICATION GROMMETS



MS35489 Supersedes MS35490 and AN931 - GROMMET.

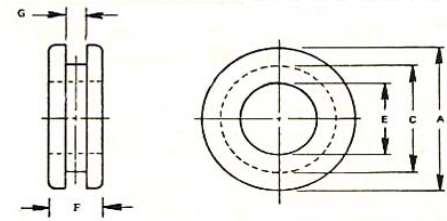
Rubber - Synthetic, composition A, per MIL-G-3036.

Rubber - Silicone, composition B, per MIL-G-3036.

Add 'X' after dash (-) number to denote silicone.

MS35489 and AN931 parts are interchangeable.

Do not use MS35490 (Split Grommets) to replace MS35489 or AN931 grommets.



How to read this chart: Determine 'E' dimension, then 'C' & 'A'. Enter column for groove width to determine dash number.

Dimensions			1/16 .062 Groove Width (G)			1/8 .125 Groove Width			3/16 .188 Groove Width			1/4 .250 Groove Width		
E	C	A	MS35489	AN931	F	MS35189	AN931	F	MS35489	AN931	F	MS35489	AN931	F
.125	.250	.344	-1		.188									
.125	.562	.750	-2	-2-9	.188	-31	-A2-9	.250	-60	-B2-9	.312	-89	-C2-9	.375
.125	1.000	1.250	-3	-2-16	.250	-32	-A2-16	.312	-61	-B2-16	.375	-90	-C2-16	.438
.188	.312	.438	-4	-3-5	.188	-33	-A3-5	.250	-62	-B3-5	.312	-91	-C3-5	.375
.188	.562	.750	-134	-3-9	.188	-137	-A3-9	.250	-138	-B3-9	.312	-139	-C3-9	.375
.188	.625	.875	-5	-3-10	.188	-34	-A3-10	.250	-63	-B3-10	.312	-92	-C3-10	.375
.250	.438	.625	-6	-4-7	.188	-35	-A4-7	.250	-64	-B4-7	.312	-93	-C4-7	.375
.250	.750	1.000	-7	-4-12	.250	-36	-A4-12	.312	-65	-B4-12	.375	-94	-C4-12	.438
.250	1.000	1.250	-8	-4-16	.250	-37	-A4-16	.312	-66	-B4-16	.375	-95	-C4-16	.438
.312	.562	.812	-9	-5-9	.312	-38	-A5-9	.375	-67	-B5-9	.438	-96	-C5-9	.500
.312	.750	1.000	-10	-5-12	.312	-39	-A5-12	.375	-68	-B5-12	.438	-97	-C5-12	.500
.312	.812	1.062	-118	-5-13	.312	-122	-A5-13	.375	-136	-B5-13	.438	-130	-C5-13	.500
.375	.625	.875	-11	-6-10	.312	-40	-A6-10	.375	-69	-B6-10	.438	-98	-C6-10	.500
.375	1.000	1.250	-12	-6-16	.250	-41	-A6-16	.312	-70	-B6-16	.375	-99	-C6-16	.438
.438	.688	.938	-13	-7-11	.312	-42	-A7-11	.375	-71	-B7-11	.438	-100	-C7-11	.500
.500	.812	1.062	-14	-8-13	.312	-43	-A8-13	.375	-72	-B8-13	.438	-101	-C8-13	.500
.500	1.250	1.500	-15	-8-20	.250	-44	-A8-20	.312	-73	-B8-20	.375	-102	-C8-20	.438
.562	.812	1.062	-16	-9-13	.312	-45	-A9-13	.375	-74	-B9-13	.438	-103	-C9-13	.500
.625	.875	1.125	-17	-10-14	.312	-46	-A10-14	.375	-75	-B10-14	.438	-104	-C10-14	.500
.625	1.250	1.500	-18	-10-20	.250	-47	-A10-20	.312	-76	-B10-20	.375	-105	-C10-20	.438
.688	1.000	1.312	-19	-11-16	.375	-48	-A11-16	.438	-77	-B11-16	.500	-106	-C11-16	.562
.750	1.062	1.375	-20	-12-17	.375	-49	-A12-17	.438	-78	-B12-17	.500	-107	-C12-17	.562
.750	1.250	1.625	-135	-12-20	.250	-123	-A12-20	.312	-127	-B12-20	.375	-131	-C12-20	.438
.750	1.438	1.812	-21	-12-23	.375	-50	-A12-23	.438	-79	-B12-23	.500	-108	-C12-23	.562
.750	1.625	2.000	-120	-12-26	.375	-124	-A12-26	.438	-128	-B12-26	.500	-132	-C12-26	.562
.875	1.250	1.625	-22	-14-20	.438	-51	-A14-20	.500	-80	-B14-20	.562	-109	-C14-20	.625
.875	1.625	2.000	-121	-14-26	.438	-125	-A14-26	.500	-129	-B14-26	.562	-133	-C14-26	.625
1.000	1.375	1.750	-23	-16-22	.438	-52	-A16-22	.500	-81	-B16-22	.562	-110	-C16-22	.625
1.000	1.875	2.250	-24	-16-30	.438	-53	-A16-30	.500	-82	-B16-30	.562	-111	-C16-30	.625
1.250	2.375	2.750	-25	-20-38	.438	-54	-A20-38	.500	-83	-B20-38	.562	-112	-C20-38	.625
1.250	2.500	2.875	-26	-20-40	.438	-55	-A20-40	.500	-84	-B20-40	.562	-113	-C20-40	.625
1.500	1.750	2.125	-27	-24-28	.438	-56	-A24-28	.500	-85	-B24-28	.562	-114	-C24-28	.625
1.500	2.750	3.250	-28	-24-44	.438	-57	-A24-44	.500	-86	-B24-44	.562	-115	-C24-44	.625
1.750	3.250	3.750	-29	-28-52	.500	-58	-A28-52	.562	-87	-B28-52	.625	-116	-C28-52	.688
2.000	3.500	4.000	-30	-32-56	.500	-59	-A32-56	.562	-88	-B32-56	.625	-117	-C32-56	.688

AERODUCT FLEXIBLE DUCTING

CAT 10 Ft Lengths- Black. Single ply neoprene impregnated fiberglass with closely spaced spiral copper-coated high carbon steel wire inside, exterior wrapped fiberglass cord.

From -65 Deg F to over 300 Deg F.

SCAT 11 Ft Lengths- Red. Single ply same as CAT except with silicone rubber impregnation.

From -80 Deg F to over 450 Deg F.

Sold in Standard Lengths Only

Standard

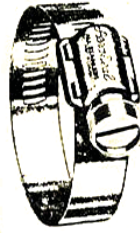
Dash#	Inside Diameter	Wire Spacing
-2	1/2	5/16
-3	3/4	5/16
-4	1	5/16
-5	1-1/4	5/16
-6	1-1/2	5/16
-7	1-3/4	5/16
-8	2	3/8
-9	2-1/4	3/8
-10	2-1/2	3/8
-11	2-3/4	3/8
-12	3	3/8
-14	3-1/2	3/8
-16	4	3/8



BREEZE

Aero-Seal Aircraft Clamps

The original stainless steel worm-drive clamp. Heavy-duty four-piece Quadra-Lock construction enables far more tightening torque to be delivered to the band perforations. Band is constructed of 300 series half hard stainless steel. 200 series clamps are constructed of 410 stainless. SKYBOLT stocks 200 series clamps with safety collared screws.



Standard Package - 10

QS200M	Effective Diameter	
	Min	Max
06S	7/16	25/32
08S	1/2	29/32
10S	9/16	1- 1/16
12S	11/16	1- 1/4
16S	13/16	1- 1/2
20S	13/16	1- 3/4
24S	1- 1/16	2
28S	1- 5/16	2- 1/4
32S	1- 9/16	2- 1/2
36S	1-13/16	2- 3/4
40S	2- 1/16	3
44S	2- 5/16	3- 1/4
48S	2- 9/16	3- 1/2
52S	2-13/16	3- 3/4
56S	3- 1/16	4
60S	3- 5/16	4- 1/4
64S	3- 9/16	4- 1/2
72S	4- 1/8	5
80S	4- 5/8	5- 1/2
88S	5- 1/8	6
96S	5- 5/8	6- 1/2
104S	6- 1/8	7
128S	5- 5/8	8- 1/2
152S	7- 1/8	10
188S	9- 3/8	12-1/4

AN737TW

MS35842

AN737TW*	Effective Diameter	
	Min	Max
-22	7/16	11/16
-24	1/2	3/4
-26	9/16	13/16
-30	11/16	15/16
-34	13/16	1- 1/16
-38	15/16	1- 3/16
-44	61/64	1- 3/8
-46	1	1- 7/16
-48	1- 3/64	1- 1/2
-44-48	61/64	1- 1/2
-56	1-21/64	1- 3/4
-58	1- 3/8	1-13/16
-66	1- 5/8	2- 1/16
-56-66	1-21/64	2- 1/16
-74	1- 7/8	2- 5/16
-82	2- 1/8	2- 9/16
-91	2-13/32	2-27/32
-74-91	1- 7/8	2-27/32
-98	2- 5/8	3- 1/16
-107	2-29/32	3-11/32
-114	3- 1/8	3- 9/16
-98-114	2- 5/8	3- 9/16

MS35842*	Effective Diameter	
	Min	Max
-10	7/16	25/32
-11	11/16	1- 1/4
-12	1- 1/16	2
-13	1-13/16	2- 3/4
-14	2- 9/16	3- 1/2
-15	3- 5/16	4- 1/4
-16	4- 1/8	7

BREEZE

AeroSeal MINIATURES



Miniatures-Lightweight, streamlined clamps generally used for small (under 1") diameters. These clamps can handle pressures up to 1000psi with less than 15 in/lbs of torque

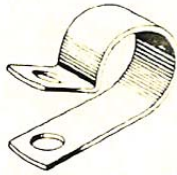
SKYBOLT stocks miniature clamps with 4-piece construction of 300 series stainless band and 410 series stainless hex screw.

*Not Stock Items

MINIATURE CLAMPS

Standard Package - 10

Part#	Effective Diameter	
	Min	Max
6604	7/32	5/8
6606	7/16	25/32
6608	1/2	29/32
6610	9/16	1- 1/16



MS21919 CUSHIONED CLAMP

Aluminum band with Cloroprene cushion (212F). For general purpose in areas contaminated with petroleum based hydraulic fluids and occasional fuel splash. Available CRES with silicone cushion (400F) or fluorosilicone cushion (450F).

Note: List depicts WDG (wedged) clamps. Unless specified, DG clamps may be supplied at reduced pricing until stocks are depleted.

AN742 PLAIN CLAMP

Steel - Cadmium plated per QQ-P-416
Aluminum Alloy (D), CRES(F), High Temp(H).

Standard Package - 10

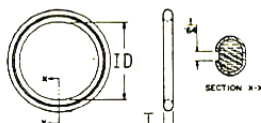
AN742	Tube Dia	AN742	Tube Dia
D2	1/8	D27	1- 3/4
D3	3/16	D28	1- 7/8
D4	1/4	D29	2
D5	5/16	D30	2- 1/8
D6	3/8	D31	2- 1/4
D7	7/16	D32	2- 3/8
D8	1/2	D33	2- 1/2
D9	9/16	D34	3
D10	5/8	D35	3- 1/4
D11	11/16	D36	3- 1/2
D12	3/4	D37	3- 3/4
D13	13/16	D38	4
D14	7/8	D39	4- 1/4
D15	15/16	D40	4- 1/2
D16	1	D41	4- 3/4
D17	1- 1/16	D42	5
D18	1- 1/8	D43	5- 1/4
D19	1- 3/16	D44	5- 1/2
D20	1- 1/4	D45	5- 3/4
D21	1- 5/16	D46	6
D22	1- 3/8	D47	6- 1/4
D23	1- 7/16	D48	6- 1/2
D24	1- 1/2	D49	6- 3/4
D25	1- 9/16	D50	7
D26	1- 5/8	D51	7- 1/4
		D52	7- 1/2
		D53	7- 3/4
		D54	8
		D55	8- 1/4
		D56	8- 1/2
		D57	8- 3/4
		D58	9
		D59	9- 1/4
		D60	9- 1/2
		D61	9- 3/4
		D62	10
		D63	10- 1/4
		D64	10- 1/2
		D65	10- 3/4
		D66	11

Standard Package - 10

MS21919	Tube Dia	MS21919	Tube Dia
WDG1	1/16	WDG27	1- 3/4
WDG2	1/8	WDG28	1- 7/8
WDG3	3/16	WDG29	2
WDG4	1/4	WDG30	2- 1/8
WDG5	5/16	WDG31	2- 1/4
WDG6	3/8	WDG32	2- 3/8
WDG7	7/16	WDG33	2- 1/2
WDG8	1/2	WDG34	3
WDG9	9/16	WDG35	3- 1/4
WDG10	5/8	WDG36	3- 1/2
WDG11	11/16	WDG37	3- 3/4
WDG12	3/4	WDG38	4
WDG13	13/16	WDG39	4- 1/4
WDG14	7/8	WDG40	4- 1/2
WDG15	15/16	WDG41	4- 3/4
WDG16	1	WDG42	5
WDG17	1- 1/16	WDG43	5- 1/4
WDG18	1- 1/8	WDG44	5- 1/2
WDG19	1- 3/16	WDG45	5- 3/4
WDG20	1- 1/4	WDG46	6
WDG21	1- 5/16	WDG47	6- 1/4
WDG22	1- 3/8	WDG48	6- 1/2
WDG23	1- 7/16	WDG49	6- 3/4
WDG24	1- 1/2	WDG50	7
WDG25	1- 9/16	WDG51	7- 1/4
WDG26	1- 5/8	WDG52	7- 1/2
		WDG53	7- 3/4
		WDG54	8
		WDG55	8- 1/4
		WDG56	8- 1/2
		WDG57	8- 3/4
		WDG58	9
		WDG59	9- 1/4
		WDG60	9- 1/2
		WDG61	9- 3/4
		WDG62	10
		WDG63	10- 1/4
		WDG64	10- 1/2
		WDG65	10- 3/4
		WDG66	11

MS35769 Supersedes AN900 GASKET

Copper-Asbestos. Temperature to 500F
Pressure to 200PSI. Ring width = 1/4"
Thickness = 3/32"



Standard Package - 10

MS35769	AN900	ID	MS35769	AN900	ID
-1	-3	3/16	-24	-17	1- 1/16
-2	-4	1/4	-26	-18	1- 1/8
-5	-5	5/16	-29	-19	1- 3/16
-6	-6	3/8	-31	-20	1- 1/4
-8	-7	7/16	-33	-21	1- 5/16
-9	-8	1/2	-35	-22	1- 3/8
-10	-9	9/16	-38	-23	1- 7/16
-11	-10	5/8	-39	-24	1- 1/2
-13	-11	11/16	-41	-25	1- 9/16
-15	-12	3/4	-42	-26	1- 5/8
-17	-13	13/16	-46	-27	1-11/16
-20	-15	15/16	-51	-29	1-13/16
-21	-16	1	-52	-30	1- 7/8

Note: This is not a complete list. Continental engine applications:
A-65 thru O-200: AN900-10, Oil sump drain plug, oil temp probe, suction tube assembly. AN900-14, Oil Relief valve. AN900-22, Tach drive housing. AN900-28, Oil Screen.

AN901 GASKET

For Tube Connections
1100 Aluminum Alloy or Copper
Replace A with C to denote copper.

Standard Package - 10

AN901	Tube OD
-4A	1/4
-5A	5/16
-6A	3/8
-8A	1/2
-10A	5/8



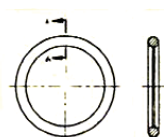
MS28778

Supersedes AN6290 Gasket

For Tube Fittings

Standard Package - 10

MS28778- AN6290-	Tube OD
-2	1/8
-3	3/16
-4	1/4
-5	5/16
-6	3/8
-8	1/2
-10	5/8



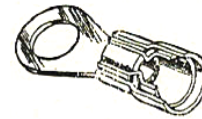
ELECTRICAL TERMINALS

NYLON RING TERMINALS MS20659 Type II

Flared Nylon with Internal Sleeve



Part#	Wire			STD
	Size	Stud	Color	PKG
FND2622-2	26-22	2		100
FND2622-3	26-22	4		100
FND2622-M3	26-22	6		100
FND2216-S3	22-18	4	Red	100
FND2216-M3	22-18	6	Red	100
FND2216-4	22-18	8	Red	100
FND2216-5	22-18	10	Red	100
FND2216-6	22-18	1/4	Red	100
FND2216-8	22-18	5/16	Red	100
FND2216-9	22-18	3/8	Red	100
FND1614-M3	16-14	6	Blue	100
FND1614-4	16-14	8	Blue	100
FND1614-M5	16-14	10	Blue	100
FND1614-6	16-14	1/4	Blue	100
FND1614-8	16-14	5/16	Blue	100
FND1614-9	16-14	3/8	Blue	100
FND1210-S3	12-10	6	Yellow	100
FND1210-4	12-10	8	Yellow	50
FND1210-5	12-10	10	Yellow	100
FND1210-S6	12-10	1/4	Yellow	50
FND1210-S8	12-10	5/16	Yellow	100
FND1210-9	12-10	3/8	Yellow	50
FN8-8	8	5/16		10
FN4-9	4	3/8		10
I582	2	3/8		10



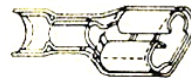
FND Terminals



1582 Terminals

FULLY INSULATED SPADE CONNECTOR

Part#	Wire			STD
	Size	Type	TAB	PKG
LNDF2216T-250M	22-18	Female	.032X.250	100
LNDF1614T-250M	16-14	Female	.032X.250	100
LNDM2216T-250M	22-18	Male	.032X.250	100
LNDM1614T-250M	16-14	Male	.032X.250	100



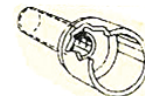
BUTT CONNECTOR

Part#	Wire			STD
	Size	Type	Color	PKG
NDCW2216	22-18	Window,Nylon	Red	50
NDCW1614	16-14	Window,Nylon	Blue	50
NDCW1210	12-10	Window,Nylon	Yellow	50
NCL2622	26-22	Clear,Nylon	Yellow	100
NCL2216	22-18	Clear,Nylon	Red	100
NCL1614	16-14	Clear,Nylon	Blue	100
NCL1210	12-10	Clear,Nylon	Yellow	100
FVC2216WS	22-18	Insul,Vinyl	Red	100
FVC1614WS	16-14	Insul,Vinyl	Blue	100
FVC1210WS	12-10	Insul,Vinyl	Yellow	100
C1210	12-10	Uninsulated		50



CRIMP CONNECTOR - NYLON

KNIFE DISCONNECT - VINYL



Part#	Wire			STD
	Size	Type	Color	PKG
FV2216K	22-18	Insulated	Red	100
FV1614K	16-14	Insulated	Blue	100
FV1210K	12-10	Insulated	Yellow	100

Part#	Wire
	Size
2218SDB	22-18
1614SDB	16-14
1210SDB	12-10

ELECTRICAL - TUBING, SPIRAL WRAP, CABLE TIES



HEAT SHRINK TUBING - When placed over wire strand, Heat Shrink Tubing, when heated, shrinks to a neat insulating splice cover.

Packaged - 5ea 10" Lengths

Part#	Expanded Size	Recovered ID(Max)	Fully Recovered Nominal Wall
HST-16	1/16	.031	.017
HST-32	3/32	.046	.020
HST-18	1/8	.062	.020
HST-36	3/16	.093	.020
HST-14	1/4	.125	.025
HST-56	5/16	.156	.025
HST-38	3/8	.187	.025
HST-12	1/2	.250	.025
HST-10	1		.035

VINYL TUBING - For harnessing, cabling, and conduit protection on electrical equipment requiring clear tubing with good flexibility at low temperatures. Temperature range is -73C to 85C. Made to MIL-I-7444B, Type 1.

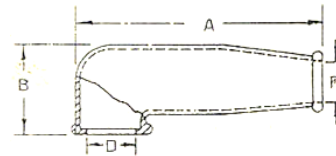
Part#	AWG Size	Nom ID	Nom Wall	Wire Size
PVC-80-12	12	.085	.016	
PVC-80-8	8	.133	.020	18
PVC-80-7	7	.148	.020	16
PVC-80-6	6	.166	.020	14
PVC-80-5	5	.186	.020	12
PVC-80-4	4	.208	.020	10
PVC-80-7/16	7/16	.438	.025	
PVC-80-1/2	1/2	.500	.025	2



PLASTIC SPIRAL WRAP TUBING - An effective way to bundle wire harnesses. Non-flame retardant. Clear

Part#	Bundle Dia
HT-1/4-C	3/16 to 2"
HT-3/8-C	5/16 to 3"
HT-1/2-C	3/8 to 4"

ELECTRICAL TERMINAL NIPPLE - MS25171
Class II Grade 50 Silicone.



Part#	A	B	D	F
MS25171-1S	1.38	.56	.40	.16
MS25171-2S	2.50	1.00	.56	.31
MS25171-3S	2.50	1.00	.56	.43
MS25171-4S	2.50	1.00	.56	.56



CABLE TIES

PART#	ALT#	Color	Length	Strength	MIN DIA	MAX DIA
HT102	8800	White	4"	18LB	1/16	15/16
HT102-O	8800B	Black	4"	18	1/16	15/16
HT104	8801	White	5 1/2"	40	1/16	1-1/4
HT104-O	8801B	Black	5 1/2"	40	1/16	1-1/4
HT107	8802	White	7 1/2"	50	1/16	2-1/8
HT107-O	8802B	Black	7 1/2"	50	1/16	2-1/8
HT108	8803	White	11"	50	1/16	3
HT108-O	8803B	Black	11"	50	1/16	3
HT109	8804	White	15"	50	1/16	4
HT109-O	8804B	Black	15"	50	1/16	4
607914-1		White	32"	120	1	9

FBO Electrical Kit
(See Hardware Kits)

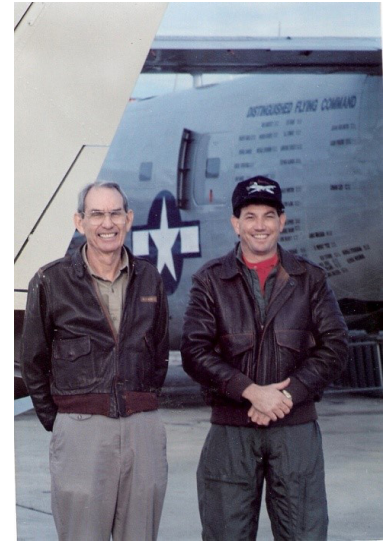
Meet The Team

Founders Win, Dotty and Ned Bowers

Founded by Win, Dotty and Ned Bowers in 1982, Skybolt has grown to be a trusted name in Aerospace Fasteners. Ned serves as President along with Debra Bowers as Vice-President since 2001. Ned began his aerospace engineering career with NASA during Apollo, Skylab, and Shuttle continuing



with a 38-year career as an airline pilot retiring from Delta in 2017 with over 1,000 Atlantic crossings. Debra brings a marketing and customer service background to Skybolt, which includes roles with the Sun N Fun Museum, Marketing Director for Fantasy of Flight; unique project roles with Stallion 51 Corp's P51 events and serves as EAA Air Adventure co-host for Flight Operations and Performers every year during Oshkosh. Together, the Bowers family has placed Skybolt at the highest level of expertise, innovation, and integrity. Our expertise transitions aerospace fasteners into racing, marine, industrial and defense markets that include aerospace, land-based systems, and naval vessels.



Skybolt Team Members

April Braun	Sales Manager, Purchasing, Training	Joined Skybolt 2003
Christy Exum	Shipping Manager, Invoicing & Sales	Joined Skybolt 2007
Brenda Fleming	AS9100 Quality Control	Joined Skybolt 2016
Betty Carr	Receiving - Quality Control	Joined Skybolt 2005
John Falarski	Sales, Manufacturing Production, IT	Joined Skybolt 2014
Eric Skipper	Warehouse Manager, Special Processes	Joined Skybolt 2011
Earl Denby	Production & Assembly Team	Joined Skybolt 2015
Dan Albert	Production & Assembly Team	Joined Skybolt 2016
Carolyn Branch	Accounting & Administration	Joined Skybolt 1982
Carlos Osorio	Manager of Machining Operations	Joined Skybolt 1993
Mike Kononitz	Tool & Die, Machining Operations	Joined Skybolt 2017
Russ Ortner	SolidWorks Engineering, Product Development	Joined Skybolt 1998
Bryon Menendez-Reyes	SolidWorks Engineering Apprentice	Joined Skybolt 2017
Randy Edwards	Outside Sales - Aerospace, Racing, Industrial	Joined Skybolt 2002
Orestes Lorenzo	Flight Operations, Chief Pilot	Joined Skybolt 2014
Matt Bowers	Marketing - Aviation, Racing	Joined Skybolt 1991

Tap Chart – Metric Threads

Tap size	Basic major dia (mm)	Basic major dia (inch)	mm per thread	Drill size (mm)	Drill size (inch)
M1.6 x 0.35	1,6mm	0.063	0.35	1,25mm	#55
M2 x 0.4	2mm	0.0787	0.4	1,6mm	#52
M2.5 x 0.45	2,5mm	0.0984	0.45	2,05mm	#46
M3 x 0.5	3mm	0.1181	0.5	2,5mm	#39
M3.5 x 0.6	3,5mm	0.1378	0.6	2,9mm	#32
M4 x 0.7	4mm	0.1575	0.7	3,3mm	#30
M5 x 0.8	5mm	0.1969	0.8	4,2mm	#19
M6 x 1	6mm	0.2362	1	5mm	#8
M8 x 1.25	8mm	0.315	1.25	6,8mm	H
M8 x 1	8mm	0.315	1	7mm	J
M10 x 1.5	10mm	0.3937	1.5	8,5mm	R
M10 x 1.25	10mm	0.3937	1.25	8,8mm	Nov-32
M12 x 1.75	12mm	0.4724	1.75	10,2mm	13/32
M12 x 1.25	12mm	0.4724	1.25	10,8mm	27/64
M14 x 2	14mm	0.5512	2	12mm	15/32
M14 x 1.5	14mm	0.5512	1.5	12,5mm	2-Jan
M16 x 2	16mm	0.6299	2	14mm	35/64
M16 x 1.5	16mm	0.6299	1.5	14,5mm	37/64
M18 x 2.5	18mm	0.7087	2.5	15,5mm	39/64
M18 x 1.5	18mm	0.7087	1.5	16,5mm	21/32
M20 x 2.5	20mm	0.7874	2.5	17,5mm	16-Nov
M20 x 1.5	20mm	0.7874	1.5	18,5mm	47/64
M22 x 2.5	22mm	0.8661	2.5	19,5mm	49/64
M22 x 1.5	22mm	0.8661	1.5	20,5mm	13/16
M24 x 3	24mm	0.9449	3	21mm	53/64
M24 x 2	24mm	0.9449	2	22mm	8-Jul
M27 x 3	27mm	1.063	3	24mm	15/16
M27 x 2	27mm	1.063	2	25mm	1

Tap Chart – UNC/UNF Threads

Tap size	NF/NC UNF/ UNC	Threads per inch	Basic major dia (inches)	Basic effective dia (inches)	Minor dia of ext. threads (inches)	Minor dia of int. threads (inches)	Drill size
0-80	UNF	80	0.06	0.0519	0.0447	0.0465	3/64
1-64	UNC	64	0.073	0.0629	0.0538	0.0561	#54
2-56	UNC	56	0.086	0.0744	0.0641	.0667	#50
2-64	UNF	64	0.086	0.0759	0.0668	.0691	#50
4-40	UNC	40	0.112	0.0958	0.0813	.0849	#43
4-48	UNF	48	0.112	0.0985	0.0864	.0894	#42
5-40	UNC	40	0.125	0.1088	0.0943	.0979	#38
5-44	UNF	44	0.125	0.1102	0.0971	.1004	#37
6-32	UNC	32	0.136	0.1177	0.0997	.1042	#36
6-40	UNF	40	0.136	0.1218	0.1073	.1109	#33
8-32	UNC	32	0.164	0.1437	0.1257	.1302	#29
8-36	UNF	36	0.164	0.146	0.1299	.1339	#29
10-24	UNC	24	0.19	0.1629	0.1389	.1449	#25
10-32	UNF	32	0.19	0.1697	0.1517	.1562	#21
1/4-20	UNC	20	0.25	0.2175	0.1887	.1959	#7
1/4-28	UNF	28	0.25	0.2268	0.2062	.2113	#3
5/16-18	UNC	18	0.3125	0.2764	0.2443	.2524	F
5/16-24	UNF	24	0.3125	0.2854	0.2614	.2674	I
3/8-16	UNC	16	0.375	0.3344	0.2983	.3073	5/16
3/8-24	UNF	24	0.375	0.3479	0.3239	.3299	Q
7/16-14	UNC	14	0.4375	0.3911	0.3499	.3602	U
7/16-20	UNF	20	0.4375	0.405	0.3762	.3834	25/64
1/2-13	UNC	13	0.5	0.45	0.4056	.4167	27/64
1/2-20	UNF	20	0.5	0.4675	0.4387	.4459	29/64
9/16-12	UNC	12	0.5625	0.5084	0.4603	.4723	31/64
9/16-18	UNF	18	0.5625	0.5264	0.4943	.5024	33/64
5/8-11	UNC	11	0.625	0.566	0.5135	.5266	17/32
5/8-18	UNF	18	0.625	0.5869	0.5568	.5649	37/64
3/4-10	UNC	10	0.75	0.665	0.6273	.6417	21/32
3/4-16	UNF	16	0.75	0.7094	0.6733	.6823	11/16
7/8-9	UNC	9	0.875	0.8028	0.7387	.7547	49/64
7/8-14	UNF	14	0.875	0.8286	0.7874	.7977	13/16
1-8	UNC	8	1	0.9188	0.8466	.8647	7/8
1-14	UNF	14	1	0.9459	0.8978	.9098	15/16
1 1/8-7	UNC	7	1.125	1.0322	0.9497	.9704	63/64
1 1/8-12	UNF	12	1.125	1.0709	1.0228	1.0348	1 3/64
1 1/4-7	UNC	7	1.25	1.1572	1.0747	1.0954	1 7/64
1 3/8-6	UNC	6	1.375	1.2667	1.1705	1.1946	1 13/64
1 1/2-6	UNC	6	1.5	1.3917	1.2955	1.3196	1 11/32
1 3/4-5	UNC	5	1.75	1.6201	1.5046	1.5335	1 35/64
2-4.5	UNC	4.5	2	1.8557	1.7274	1.7594	1 25/32

Decimal Equivalents - Lettered Drills

No. Drill	In. Diam	No. Drill	In. Diam.	No. Drill	In. Diam
A	.234	J	.277	S	.348
B	.238	K	.281	T	.358
C	.242	L	.290	U	.368
D	.246	M	.295	V	.377
E	.250	N	.302	W	.386
F	.257	O	.316	X	.397
G	.261	P	.323	Y	.404
H	.266	Q	.332	Z	.413
I	.272	R	.339		



Decimal Equivalents - Numbered Drills

No. Drill	Size In.	No. Drill	Size In.	No. Drill	Size In.	No. Drill	Size In.
1	0.2230	21	0.1590	41*	0.0960	61	0.0390
2	0.2210	22	0.1570	42	0.0935	62	0.0380
3	0.2130	23	0.1540	43	0.0890	63	0.0370
4	0.2090	24	0.1520	44	0.0860	64	0.0360
5	0.2055	25	0.1495	45	0.0820	65	0.0350
6	0.2040	26	0.1470	46	0.0810	66	0.0330
7	0.2010	27	0.1440	47	0.0785	67	0.0320
8	0.1990	28	0.1405	48	0.0760	68	0.0310
9	0.1960	29	0.1360	49	0.0730	69	0.9292
10	0.1935	30*	0.1285	50	0.0700	70	0.0280
11	0.1910	31	0.1200	51	0.0670	71	0.0260
12	0.1890	32	0.1160	52	0.0635	72	0.0250
13	0.1850	33	0.1130	53	0.0595	73	0.0240
14	0.1820	34	0.1110	54	0.0550	74	0.0225
15	0.1800	35	0.1100	55	0.0520	75	0.0210
16	0.1770	36	0.1065	56	0.0465	76	0.0200
17	0.1730	37	0.1040	57	0.0430	77	0.0180
18	0.1695	38	0.1015	58	0.0420	78	0.0160
19	0.1660	39	0.0995	59	0.0410	79	0.0145
20	0.1610	40	0.0980	60	0.0400	80	0.0135

Decimal Equivalents Chart

Inch Fraction	Decimal Equiv	Inch Fraction	Decimal Equiv.	Inch Fraction	Decimal Equiv
1/64	.0156	23/64	.3594	45/64	.7031
1/32	.0312	3/8	.375	23/32	.7187
3/64	.0469	25/64	.3906	47/64	.7344
1/16	.0625	13/32	.4062	3/4	.75
5/64	.0781	27/64	.4219	49/64	.7656
3/32	.0937	7/16	.4375	25/32	.7812
7/64	.1094	29/64	.4531	51/64	.7969
1/8	.125	15/32	.4687	13/16	.8125
9/64	.1406	31/64	.4844	53/64	.8281
5/32	.1562	1/2	.5	27/32	.8437
11/64	.1719	33/64	.5156	55/64	.8594
3/16	.1875	17/32	.5312	7/8	.875
13/64	.2031	35/64	.5469	57/64	.8906
7/32	.2187	9/16	.5625	29/32	.9062
15/64	.2344	37/64	.5781	59/64	.9219
1/4	.25	19/32	.5937	15/16	.9375
17/64	.2656	39/64	.6094	61/64	.9531
9/32	.2812	5/8	.625	31/32	.9687
19/64	.2969	41/64	.6406	63/64	.9844
5/16	.3125	21/32	.6562	1	1.00
21/64	.3281	43/64	.6719		
11/32	.3437	11/16	.6875		

*Common 1/8 and 3/32 drills

Sheet Stock Gauge

No. of Gauge	Gauge Alum (B & S)	Steel (U.S. Std.)	No. of Gauge	Gauge Alum (B & S)	Steel (U.S. Std.)	No. of Gauge	Gauge Alum (B & S)	Steel (U.S. Std.)
10	.1019	.1345	17	.0453	.0538	24	.0201	.0239
11	.0907	.1196	18	.0403	.0478	25	.0179	.0206
12	.0808	.1046	19	.0359	.0418	26	.0159	.0179
13	.0720	.0897	20	.0320	.0359	27	.0142	.0164
14	.0641	.0747	21	.0285	.0329	28	.0126	.0149
15	.0571	.0673	22	.0253	.0299	29	.0113	.0135
16	.0508	.0598	23	.0226	.0269	30	.0100	.0120

Conversions

.0394 inches = 1 mm
25.4 mm = 1 inch
Inches x 25.4 = mm
mm ÷ 25.4 = Inches
1 LB = 453.59 Grams
1 Gram = .0022 LB
LB x 453.59237 = Grams
Grams ÷ 453.59237 = LB