



- DOT FITTINGS
- PIPE FITTINGS
- HYDRAULIC FITTINGS
- NUTS
- WASHERS
- SOCKET PRODUCTS
- THREADED ROD
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- CONSTRUCTION SCREWS
- SQUARE HEAD SET SCREWS
- MACHINE SCREWS
- SELF TAPPING SCREWS
- SELF DRILLING SCREWS
- LAG SCREWS
- CARRIAGE BOLTS
- ANCHORS
- RIVETS
- HOSE CLAMPS
- DECK SCREWS
- HEX CAP SCREWS

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HEX HEAD CAP SCREWS

GRADE 8

Grade 8 - Coarse Thread (USS)



Coarse Thread (USS)

RoHS Compliant Zinc Yellow Trivalent Plated

DIA. THREADS	Qty. 100			Qty. 50	Qty. 25			Qty. 20	Qty. 10		Bulk		
	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1"	1-1/8	1-1/4	1-1/2
LENGTH	20	18	16	14	13	12	11	10	9	8	7	7	6
1/2	58-0404	58-0504	58-0604	-	-	-	-	-	-	-	-	-	-
5/8	58-0405	58-0505	58-0605	-	-	-	-	-	-	-	-	-	-
3/4	58-0406	58-0506	58-0606	58-0706	58-0806	-	-	-	-	-	-	-	-
7/8	58-0407	58-0507	58-0607	-	-	-	-	-	-	-	-	-	-
1"	58-0408	58-0508	58-0608	58-0708	58-0808	58-0908	58-1008	-	-	-	-	-	-
1-1/4	58-0410	58-0510	58-0610	58-0710	58-0810	58-0910	58-1010	58-1210	-	-	-	-	-
1-1/2	58-0412	58-0512	58-0612	58-0712	58-0812	58-0912	58-1012	58-1212	58-1412	58-1612	-	-	-
1-3/4	58-0414	58-0514	58-0614	58-0714	58-0814	58-0914	58-1014	58-1214	58-1414	58-1614	-	-	-
2"	58-0416	58-0516	58-0616	58-0716	58-0816	58-0916	58-1016	58-1216	58-1416	58-1616	-	-	-
2-1/4	58-0418	58-0518	58-0618	58-0718	58-0818	58-0918	58-1018	58-1218	58-1418	58-1618	-	-	-
2-1/2	58-0420	58-0520	58-0620	58-0720	58-0820	58-0920	58-1020	58-1220	58-1420	58-1620	-	-	-
2-3/4	58-0422	58-0522	58-0622	58-0722	58-0822	58-0922	58-1022	58-1222	58-1422	58-1622	-	-	-
3"	58-0424	58-0524	58-0624	58-0724	58-0824	58-0924	58-1024	58-1224	58-1424	58-1624	58-1824	58-2024	58-2424
3-1/4	58-0426	58-0526	58-0626	58-0726	58-0826	-	58-1026	58-1226	58-1426	58-1626	-	-	-
3-1/2	58-0428	58-0528	58-0628	58-0728	58-0828	58-0928	58-1028	58-1228	58-1428	58-1628	58-1828	58-2028	58-2428
3-3/4	58-0430	58-0530	58-0630	58-0730	58-0830	58-0930	58-1030	58-1230	58-1430	58-1630	-	-	-
4"	58-0432	58-0532	58-0632	58-0732	58-0832	58-0932	58-1032	58-1232	58-1432	58-1632	58-1832	58-2032	58-2432
4-1/4	-	-	-	-	-	-	58-1034	58-1234	-	-	-	-	-
4-1/2	58-0436	58-0536	58-0636	58-0736	58-0836	58-0936	58-1036	58-1236	58-1436	58-1636	58-1836	58-2036	58-2436
4-3/4	-	-	-	-	-	-	58-1038	-	-	-	-	-	-
5"	58-0440	58-0540	58-0640	58-0740	58-0840	58-0940	58-1040	58-1240	58-1440	58-1640	58-1840	58-2040	58-2440
5-1/2	58-0444	58-0544	58-0644	58-0744	58-0844	58-0944	58-1044	58-1244	58-1444	58-1644	58-1844	58-2044	58-2444
6"	58-0448	58-0548	58-0648	58-0748	58-0848	58-0948	58-1048	58-1248	58-1448	58-1648	58-1848	58-2048	58-2448
6-1/2	-	-	-	-	58-0852	-	58-1052	58-1252	58-1452	58-1652	58-1852	58-2052	58-2452
7"	-	58-0556	-	-	58-0856	-	58-1056	58-1256	58-1456	58-1656	58-1856	58-2056	58-2456
7-1/2	-	-	-	-	58-0860	-	58-1060	58-1260	58-1460	58-1660	58-1860	58-2060	58-2460
8"	-	-	-	-	58-0864	-	58-1064	58-1264	58-1464	58-1664	58-1864	58-2064	58-2464
8-1/2	-	-	-	-	58-0868	-	58-1068	58-1268	58-1468	58-1668	58-1868	58-2068	58-2468
9"	-	-	-	-	58-0872	-	58-1072	58-1272	58-1472	58-1672	58-1872	58-2072	58-2472
9-1/2	-	-	-	-	58-0876	-	58-1076	58-1276	58-1476	58-1676	58-1876	58-2076	58-2476
10"	-	-	-	-	58-0880	-	58-1080	58-1280	58-1480	58-1680	58-1880	58-2080	58-2480
11"	-	-	-	-	58-0888	-	58-1088	58-1288	58-1488	58-1688	-	-	-
12"	-	-	-	-	58-0896	-	58-1096	58-1296	58-1496	58-1696	-	-	-
Nuts	34-3804	34-3805	34-3806	34-3807	34-3808	34-3809	34-3810	34-3812	34-3814	34-3816	34-3818	34-3820	34-3824
Ultra LN	34-4804	34-4805	34-4806	34-4807	34-4808	34-4809	34-4810	34-4812	34-4814	34-4816	34-4818	34-4820	34-4824
Nylon LN	34-8404	34-8405	34-8406	34-8407	34-8408	34-8409	34-8410	34-8412	34-8414	34-8416	34-8418	34-8420	34-8424
USS FW	37-3804	37-3805	37-3806	37-3807	37-3808	37-3809	37-3810	37-3812	37-3814	37-3816	37-3818	37-3820	37-3824
SAE FW	37-3904	37-3905	37-3906	37-3907	37-3908	37-3909	37-3910	37-3912	37-3914	37-3916	37-3918	37-3920	37-3924
LW	37-4804	37-4805	37-4806	37-4807	37-4808	37-4809	37-4810	37-4812	37-4814	37-4816	37-4818	37-4820	37-4824

HEX HEAD CAP SCREWS

GRADE 8

Grade 8 - Fine Thread (SAE)



Fine Thread (SAE)

RoHS Compliant Zinc Yellow Trivalent Plated



DIA. THREADS LENGTH	Qty. 100			Qty. 50	Qty. 25			Qty. 20	Qty. 10		Bulk		
	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1"	1-1/8	1-1/4	1-1/2
	28	24	24	20	20	18	18	16	14	14	12	12	12
1/2	59-0404	59-0504	59-0604	-	-	-	-	-	-	-	-	-	-
3/4	59-0406	59-0506	59-0606	59-0706	59-0806	-	-	-	-	-	-	-	-
1"	59-0408	59-0508	59-0608	59-0708	59-0808	59-0908	59-1008	-	-	-	-	-	-
1-1/4	59-0410	59-0510	59-0610	59-0710	59-0810	59-0910	59-1010	-	-	-	-	-	-
1-1/2	59-0412	59-0512	59-0612	59-0712	59-0812	59-0912	59-1012	59-1212	-	-	-	-	-
1-3/4	59-0414	59-0514	59-0614	59-0714	59-0814	59-0914	59-1014	59-1214	-	59-1614	-	-	-
2"	59-0416	59-0516	59-0616	59-0716	59-0816	59-0916	59-1016	59-1216	59-1416	59-1616	-	-	-
2-1/4	59-0418	59-0518	59-0618	59-0718	59-0818	59-0918	59-1018	59-1218	59-1418	59-1618	-	-	-
2-1/2	59-0420	59-0520	59-0620	59-0720	59-0820	59-0920	59-1020	59-1220	59-1420	59-1620	-	-	-
2-3/4	59-0422	59-0522	59-0622	59-0722	59-0822	59-0922	59-1022	59-1222	59-1422	59-1622	-	-	-
3"	59-0424	59-0524	59-0624	59-0724	59-0824	59-0924	59-1024	59-1224	59-1424	59-1624	59-1824	59-2024	59-2424
3-1/4	59-0426	59-0526	-	59-0726	59-0826	-	59-1026	59-1226	59-1426	59-1626	-	-	-
3-1/2	59-0428	59-0528	59-0628	59-0728	59-0828	59-0928	59-1028	59-1228	59-1428	59-1628	59-1828	59-2028	59-2428
3-3/4	-	59-0530	59-0630	59-0730	-	-	59-1030	-	59-1430	59-1630	-	-	-
4"	59-0432	59-0532	59-0632	59-0732	59-0832	59-0932	59-1032	59-1232	59-1432	59-1632	59-1832	59-2032	59-2432
4-1/2	59-0436	59-0536	59-0636	59-0736	59-0836	59-0936	59-1036	59-1236	59-1436	59-1636	59-1836	59-2036	59-2436
5"	59-0440	59-0540	59-0640	59-0740	59-0840	59-0940	59-1040	59-1240	59-1440	59-1640	59-1840	59-2040	59-2440
5-1/2	59-0444	59-0544	59-0644	59-0744	59-0844	59-0944	59-1044	59-1244	59-1444	59-1644	59-1844	59-2044	59-2444
6"	59-0448	59-0548	59-0648	59-0748	59-0848	59-0948	59-1048	59-1248	59-1448	59-1648	59-1848	59-2048	59-2448
6-1/2	-	-	-	-	59-0852	-	59-1052	59-1252	59-1452	59-1652	59-1852	59-2052	59-2452
7"	-	-	-	-	59-0856	-	59-1056	59-1256	59-1456	59-1656	59-1856	59-2056	59-2456
7-1/2	-	-	-	-	59-0860	-	59-1060	59-1260	59-1460	59-1660	59-1860	59-2060	59-2460
8"	-	-	-	-	59-0864	-	59-1064	59-1264	59-1464	59-1664	59-1864	59-2064	59-2464
8-1/2	-	-	-	-	59-0868	-	59-1068	59-1268	59-1468	59-1668	59-1868	59-2068	59-2468
9"	-	-	-	-	59-0872	-	59-1072	59-1272	59-1472	59-1672	59-1872	59-2072	59-2472
9-1/2	-	-	-	-	59-0876	-	59-1076	59-1276	59-1476	59-1676	59-1876	59-2076	59-2476
10"	-	-	-	-	59-0880	-	59-1080	59-1280	59-1480	59-1680	59-1880	59-2080	59-2480
Nuts	34-3904	34-3905	34-3906	34-3907	34-3908	34-3909	34-3910	34-3912	34-3914	34-3916	34-3918	34-3920	34-3924
Ultra LN	34-4904	34-4905	34-4906	34-4907	34-4908	34-4909	34-4910	34-4912	34-4914	34-4916	34-4918	34-4920	34-4924
Nylon LN	34-8504	34-8505	34-8506	34-8507	34-8508	34-8509	34-8510	34-8512	34-8514	34-8516	34-8518	34-8520	34-8524
USS FW	37-3804	37-3805	37-3806	37-3807	37-3808	37-3809	37-3810	37-3812	37-3814	37-3816	37-3818	37-3820	37-3824
SAE FW	37-3904	37-3905	37-3906	37-3907	37-3908	37-3909	37-3910	37-3912	37-3914	37-3916	37-3918	37-3920	37-3924
LW	37-4804	37-4805	37-4806	37-4807	37-4808	37-4809	37-4810	37-4812	37-4814	37-4816	37-4818	37-4820	37-4824



METRIC FASTENERS

HEX HEAD CAP SCREWS

10.9 Hex Head Cap Screws



Regular Pitch (Coarse Thread)

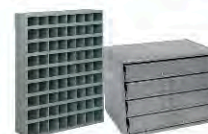
DIA. PITCH	Qty. 50		Qty. 25		Qty. 10		Qty. 5			Qty. 1
	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24
	1.0	1.25	1.5	1.75	2.0	2.0	2.50	2.50	2.50	3.0
LENGTH	10mm Across Flats	13mm Across Flats	16mm Across Flats	18mm Across Flats	22mm Across Flats	24mm Across Flats	27mm Across Flats	30mm Across Flats	32mm Across Flats	36mm Across Flats
12	45-5612**	45-5812**								
16	45-5616	45-5816	45-6016							
18	45-5618**	45-5818**								
20	45-5620 [†]	45-5820 [†]	45-6020 [†]	45-6220		45-6620*				
25	45-5625 [†]	45-5825 [†]	45-6025 [†]	45-6225	45-6425†	45-6625*				
30	45-5630 [†]	45-5830 [†]	45-6030 [†]	45-6230 [†]	45-6430†	45-6630				
35	45-5635 [†]	45-5835 [†]	45-6035 [†]	45-6235	45-6435†	45-6635**				
40	45-5640 [†]	45-5840 [†]	45-6040 [†]	45-6240 [†]	45-6440†	45-6640	45-6840**	45-7040		
45	45-5645	45-5845 [†]	45-6045	45-6245	45-6445†	45-6645				
50	45-5650 [†]	45-5850 [†]	45-6050 [†]	45-6250	45-6450†	45-6650 [†]	45-6850**	45-7050	45-7250*	45-7450
55	45-5655**	45-5855**	45-6055	45-6255	45-6455*	45-6655**		45-7055**		
60	45-5660 [†]	45-5860 [†]	45-6060 [†]	45-6260	45-6460†	45-6660 [†]	45-6860**	45-7060 [†]	45-7260*	45-7460
65	45-5665**	45-5865**	45-6065	45-6265		45-6665**		45-7065**		
70	45-5670**	45-5870	45-6070 [†]	45-6270 [†]	45-6470†	45-6670	45-6870**	45-7070	45-7270*	45-7470
75	45-5675**	45-5875**	45-6075	45-6275**		45-6675		45-7075**		
80	45-5680**	45-5880**	45-6080	45-6280 [†]	45-6480*	45-6680	45-6880**	45-7080 [†]	45-7280*	45-7480
90	45-5690**	45-5890**	45-6090	45-6290	45-6490†	45-6690	45-6890**	45-7090	45-7290*	45-7490
100	45-5691**	45-5891**	45-6091	45-6291	45-6491†	45-6691	45-6891**	45-7091 [†]	45-7291*	45-7491
110		45-5892**	45-6092	45-6292	45-6492*	45-6692	45-6892**	45-7092	45-7292*	45-7492
120		45-5893**	45-6093	45-6293	45-6493*	45-6693	45-6893**	45-7093	45-7293*	45-7493
130			45-6094**	45-6294**		45-6694	45-6894**	45-7094	45-7294*	45-7494
140			45-6095**	45-6295**		45-6695	45-6895**	45-7095	45-7295*	45-7495
150			45-6096**	45-6296**		45-6696	45-6896**	45-7096	45-7296*	45-7496
160						45-6697	45-6897**	45-7097	45-7297*	45-7497
180						45-6698**		45-7098**	45-7298*	45-7498**
190						45-6699**		45-7099**		
200						45-6700**		45-7100**		45-7500**
Nuts	46-3806	46-3808	46-3810	46-3812	46-3814	46-3816	46-3818	46-3820	46-3822	46-3824
Nylon LN	46-5806	46-5808	46-5810	46-5812	46-5814	46-5816	46-5818	46-5820	46-5822	46-5824
Ultra LN	46-4806	46-4808	46-4810	46-4812	46-4814	46-4816	46-4818	46-4820	46-4822	46-4824
FW	45-3706	45-3708	45-3710	45-3712	45-3714	45-3716	45-3718	45-3720	45-3722	45-3724
LW	45-4806	45-4808	45-4810	45-4812	45-4814	45-4816	45-4818	45-4820	45-4822	45-4824

HEX HEAD CAP SCREWS

L9® FASTENING SYSTEM



L9® Hex Head Cap Screws - Fine Thread (SAE)



Fine Thread (SAE)

RoHS Compliant Zinc Yellow Trivalent Plated

DIA. THREADS	Qty. 100			Qty. 50	Qty. 25			Qty. 20
	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4
LENGTH	28	24	24	20	20	18	18	16
1/2	99-0404	99-0504						
3/4	99-0406	99-0506	99-0606					
1"	99-0408	99-0508	99-0608	99-0708	99-0808		99-1008	
1-1/4	99-0410	99-0510	99-0610	99-0710	99-0810			
1-1/2	99-0412	99-0512	99-0612	99-0712	99-0812	99-0912	99-1012	99-1212
1-3/4	99-0414	99-0514	99-0614	99-0714	99-0814		99-1014	99-1214
2"	99-0416	99-0516	99-0616	99-0716	99-0816	99-0916	99-1016	99-1216
2-1/2	99-0420	99-0520	99-0620	99-0720	99-0820	99-0920	99-1020	99-1220
3"	99-0424	99-0524	99-0624	99-0724	99-0824	99-0924	99-1024	99-1224
3-1/2			99-0628	99-0728	99-0828	99-0928	99-1028	99-1228
4"			99-0632	99-0732	99-0832	99-0932	99-1032	99-1232
4-1/2					99-0836		99-1036	99-1236
5"					99-0840		99-1040	99-1240
5-1/2							99-1044	99-1244
6"					99-0848		99-1048	99-1248
Nuts	34-9104	34-9105	34-9106	34-9107	34-9108	34-9109	34-9110	34-9112
Lock Nuts	34-9304	34-9305	34-9306	34-9307	34-9308	34-9309	34-9310	34-9312
USS FW	37-9054	37-9055	37-9056	37-9057	37-9058	37-9059	37-9060	37-9062
SAE FW	37-9004	37-9005	37-9006	37-9007	37-9008	37-9009	37-9010	37-9012

L9® Torque Values For Bolt & Nut Assembly - Not Tapped Holes All Loads Specified in LBS. - All Torque Specified in LB.-FT.

Dia.	1/4-28	5/16-24	3/8-24	7/16-20	1/2-20	9/16-18	5/8-18	3/4-16
Tensile Strength	6,550	10,440	15,800	21,360	28,780	36,540	46,080	67,140
Proof Load	5,270	8,410	12,730	17,210	23,180	29,430	37,120	54,080
Clamp Load	3,950	6,300	9,550	12,900	17,400	22,100	27,800	40,600
Install Torque	13	23	38	65	105	150	205	355

* Tensile Strength calculated on 180,000 P.S.I.

* Proof Load calculated at 145,000 P.S.I. (80% of tensile). Yield strength of L9® bolts is 155,000 P.S.I.

* Clamp Load calculated at 108,750 P.S.I. (75% of proof load)

* Torque based using 1 L9® bolt, 1 L9® nut, 1 L9® washer under the bolt head and 1 under the nut



HEX HEAD CAP SCREWS



GRADE 5

Coarse Thread (USS)

- 120,000 P.S.I. MINIMUM TENSILE STRENGTH
- ROHS COMPLIANT ZINC PLATED
- COMPLETE TRACEABILITY
- MADE IN THE U.S.A

DIA. THREADS LENGTH	Qty. 100			Qty. 50	Qty. 25			Qty. 20	Qty. 10			-Bulk		
	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1"		1-1/8	1-1/4	1-1/2
	20	18	16	14	13	12	11	10	9	8		7	7	6
1/2	35-0404 ^J	35-0504 ^J	35-0604	-	-	-	-	-	-	-	-	-	-	-
5/8	35-0405	35-0505	35-0605	-	-	-	-	-	-	-	-	-	-	-
3/4	35-0406 ^J	35-0506 ^J	35-0606 ^J	35-0706 ^J	35-0806	-	-	-	-	-	-	-	-	-
7/8	35-0407	35-0507	35-0607	-	-	-	-	-	-	-	-	-	-	-
1"	35-0408 ^J	35-0508 ^J	35-0608 ^J	35-0708 ^J	35-0808 ^J	35-0908	35-1008	35-1208 [*]	-	-	-	-	-	-
1-1/4	35-0410 ^J	35-0510 ^J	35-0610 ^J	35-0710 ^J	35-0810 ^J	35-0910	35-1010 ^J	35-1210	-	-	-	-	-	-
1-1/2	35-0412 ^J	35-0512 ^J	35-0612 ^J	35-0712 ^J	35-0812 ^J	35-0912	35-1012 ^J	35-1212	35-1412	35-1612	-	-	-	-
1-3/4	35-0414 ^J	35-0514 ^J	35-0614 ^J	35-0714 ^J	35-0814 ^J	35-0914	35-1014 ^J	35-1214	-	-	-	-	-	-
2"	35-0416 ^J	35-0516 ^J	35-0616 ^J	35-0716 ^J	35-0816 ^J	35-0916	35-1016 ^J	35-1216 ^J	35-1416	35-1616 ^J	-	-	-	-
2-1/4	35-0418	35-0518	35-0618	35-0718	35-0818	35-0918	35-1018	35-1218	35-1418	35-1618	-	-	-	-
2-1/2	35-0420 ^J	35-0520 ^J	35-0620 ^J	35-0720 ^J	35-0820 ^J	35-0920	35-1020 ^J	35-1220 ^J	35-1420 ^J	35-1620 ^J	35-1820	-	-	-
2-3/4	35-0422	35-0522	35-0622	35-0722	35-0822	35-0922	35-1022	35-1222	35-1422	35-1622	-	-	-	-
3"	35-0424 ^J	35-0524 ^J	35-0624 ^J	35-0724 ^J	35-0824 ^J	35-0924	35-1024 ^J	35-1224 ^J	35-1424 ^J	35-1624 ^J	35-1824	35-2024	-	-
3-1/4	35-0426	35-0526	35-0626	35-0726	35-0826	35-0926	35-1026	35-1226	35-1426	35-1626	-	-	-	-
3-1/2	35-0428	35-0528	35-0628 ^J	35-0728	35-0828 ^J	35-0928	35-1028 ^J	35-1228 ^J	35-1428 ^J	35-1628	35-1828	35-2028	35-2428	-
3-3/4	35-0430	35-0530	35-0630	35-0730	35-0830	35-0930	35-1030	35-1230	35-1430	35-1630	-	-	-	-
4"	35-0432	35-0532	35-0632 ^J	35-0732	35-0832 ^J	35-0932	35-1032 ^J	35-1232 ^J	35-1432 ^J	35-1632 ^J	35-1832	35-2032	35-2432	-
4-1/2	35-0436	35-0536	35-0636	35-0736	35-0836	35-0936	35-1036	35-1236	35-1436	35-1636	35-1836	35-2036	35-2436	-
5"	35-0440	35-0540	35-0640	35-0740	35-0840	35-0940	35-1040 ^J	35-1240 ^J	35-1440 ^J	35-1640 ^J	35-1840	35-2040	35-2440	-
5-1/2	35-0444	35-0544	35-0644	35-0744	35-0844	35-0944	35-1044	35-1244	35-1444	35-1644	35-1844	35-2044	35-2444	-
6"	35-0448	35-0548	35-0648	35-0748	35-0848	35-0948	35-1048 ^J	35-1248 ^J	35-1448 ^J	35-1648 ^J	35-1848	35-2048	35-2448	-
6-1/2	-	-	35-0652	35-0752	35-0852	-	35-1052	35-1252	35-1452	35-1652	-	35-2052	35-2452	-
7"	-	35-0556 [*]	35-0656	35-0756	35-0856	-	35-1056	35-1256	35-1456	35-1656	-	35-2056	35-2456	-
7-1/2	-	-	35-0660	-	35-0860	-	35-1060	35-1260	35-1460	35-1660	-	-	-	-
8"	35-0464	-	35-0664	-	35-0864	-	35-1064	35-1264	35-1464	35-1664	-	-	-	-
8-1/2	-	-	-	-	35-0868 [*]	-	35-1068	35-1268	35-1468	35-1668	-	-	-	-
9"	-	-	-	-	35-0872 [*]	-	35-1072 [*]	35-1272	35-1472	35-1672	-	-	-	-
9-1/2	-	-	-	-	35-0876 [*]	-	35-1076 [*]	35-1276	35-1476	35-1676	-	-	-	-
10"	-	-	-	-	35-0880 [*]	-	35-1080 [*]	35-1280	35-1480	35-1680	-	-	-	-
11"	-	-	-	-	-	-	35-1088	35-1288	35-1488	35-1688	-	-	-	-
12"	-	-	-	-	-	-	35-1096 [*]	35-1296	35-1496	35-1696	-	-	-	-
Nuts	34-5004	34-5005	34-5006	34-5007	34-5008	34-5009	34-5010	34-5012	34-5014	34-5016	34-5018	34-5020	34-5024	-
LN	34-9404	34-9405	34-9406	34-9407	34-9408	34-9409	34-9410	34-9412	34-9414	34-9416	-	-	-	-
USS FW	37-3504	37-3505	37-3506	37-3507	37-3508	37-3509	37-3510	37-3512	37-3514	37-3516	37-3518	37-3520	37-3524	-
SAE FW	37-3604	37-3605	37-3606	37-3607	37-3608	37-3609	37-3610	37-3612	37-3614	37-3616	37-3618	37-3620	37-3624	-
LW	37-4504	37-4505	37-4506	37-4507	37-4508	37-4509	37-4510	37-4512	37-4514	37-4516	37-4518	37-4520	37-4524	-



HEX HEAD CAP SCREWS

GRADE 5

Fine Thread (SAE)

Zinc Plated



DIA. THREADS	Qty. 100			Qty. 50		Qty. 25		Qty. 20	Qty. 10	
	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1"
LENGTH	28	24	24	20	20	18	18	16	14	14
1/2	36-0404	36-0504	36-0604	-	-	-	-	-	-	-
3/4	36-0406	36-0506	36-0606	36-0706	36-0806	-	-	-	-	-
1"	36-0408	36-0508	36-0608	36-0708	36-0808	36-0908	36-1008	-	-	-
1-1/4	36-0410	36-0510	36-0610	36-0710	36-0810	36-0910	36-1010	-	-	-
1-1/2	36-0412	36-0512	36-0612	36-0712	36-0812	36-0912	36-1012	36-1212	-	-
1-3/4	36-0414	36-0514	36-0614	36-0714	36-0814	36-0914	36-1014	36-1214	-	-
2"	36-0416	36-0516	36-0616	36-0716	36-0816	36-0916	36-1016	36-1216	-	36-1616
2-1/4	36-0418	36-0518	36-0618	36-0718	36-0818	36-0918	36-1018	36-1218	-	-
2-1/2	36-0420	36-0520	36-0620	36-0720	36-0820	36-0920	36-1020	36-1220	36-1420	36-1620
2-3/4	36-0422	36-0522	36-0622	36-0722	36-0822	36-0922	36-1022	36-1222	-	-
3"	36-0424	36-0524	36-0624	36-0724	36-0824	36-0924	36-1024	36-1224	36-1424	36-1624
3-1/2	36-0428	36-0528	36-0628	36-0728	36-0828	36-0928	36-1028	36-1228	36-1428	36-1628
4"	36-0432	36-0532	36-0632	36-0732	36-0832	36-0932	36-1032	36-1232	36-1432	36-1632
4-1/2	36-0436	36-0536	36-0636	36-0736	36-0836	36-0936	36-1036	36-1236	36-1436	36-1636
5"	36-0440	36-0540	36-0640	36-0740	36-0840	36-0940	36-1040	36-1240	36-1440	36-1640
5-1/2	36-0444	36-0544	36-0644	36-0744	36-0844	36-0944	36-1044	36-1244	36-1444	36-1644
6"	36-0448	36-0548	36-0648	36-0748	36-0848	36-0948	36-1048	36-1248	36-1448	36-1648
Nuts	34-5104	34-5105	34-5106	34-5107	34-5108	34-5109	34-5110	34-5112	34-5114	34-5116
LN	34-9704	34-9705	34-9706	34-9707	34-9708	-	34-9710	34-9712	34-9714	34-9716
USS FW	37-3504	37-3505	37-3506	37-3507	37-3508	37-3509	37-3510	37-3512	37-3514	37-3516
SAE FW	37-3604	37-3605	37-3606	37-3607	37-3608	37-3609	37-3610	37-3612	37-3614	37-3616
LW	37-4504	37-4505	37-4506	37-4507	37-4508	37-4509	37-4510	37-4512	37-4514	37-4516

Fully Threaded Tap Bolts



- Grade 5.
- Zinc plated.

Coarse Thread (USS)

DIA. THREADS	Qty. 100			Qty. 50	Qty. 25		Qty. 20
	1/4	5/16	3/8	7/16	1/2	5/8	3/4
LENGTH	20	18	16	14	13	11	10
1/2	35-0404	-	-	-	-	-	-
5/8	35-0405	-	-	-	-	-	-
3/4	35-0406	35-0506	35-0606	35-0706	-	-	-
1"	35-4408	35-4508	35-0608	35-0708	35-0808	35-1008	35-1208
1-1/4	35-4410	35-4510	35-0610	35-0710	-	35-1010	35-1210
1-1/2	35-4412	35-4512	35-0612	35-0712	35-4812	35-1012	35-1212
1-3/4	-	35-4514	35-0614	35-0714	35-4814	35-1014	35-1214
2"	35-4416	35-4516	35-0616	35-0716	35-4816	35-1016	35-1216
2-1/4	-	-	35-0618	35-0718	-	-	35-1218
2-1/2	35-4420	35-4520	35-0620	35-0720	35-4820	35-5020	35-1220
2-3/4	-	-	-	-	-	35-5022	35-5222
3"	35-4424	35-4524	35-0624	35-0724	35-4824	35-5024	35-5224
3-1/4	-	-	-	-	-	35-5026	35-5226
3-1/2	-	-	35-0628	35-0728	35-4828	35-5028	35-5228
3-3/4	-	-	-	-	-	35-5030	35-5230
4"	-	-	35-0632	35-0732	35-4832	35-5032	35-5232
Nuts	34-5004	34-5005	34-5006	34-5007	34-5008	34-5010	34-5012
LN	34-9404	34-9405	34-9406	34-9407	34-9408	34-9410	34-9412
USS FW	37-3504	37-3505	37-3506	37-3507	37-3508	37-3510	37-3512
SAE FW	37-3604	37-3605	37-3606	37-3607	37-3608	37-3610	37-3612
LW	37-4504	37-4505	37-4506	37-4507	37-4508	37-4510	37-4512



HEX HEAD CAP SCREWS

L9® FASTENING SYSTEM

L9® Hex Head Cap Screws - Coarse Thread (USS)



Coarse Thread (USS)
RoHS Compliant Zinc Yellow Trivalent Plated

DIA. THREADS	Qty. 100			Qty. 50		Qty. 25			Qty. 20		Qty. 10	
	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1"		
LENGTH	20	18	16	14	13	12	11	10	9	8		
1/2	98-0404	98-0504	98-0604									
3/4	98-0406	98-0506	98-0606	98-0706	98-0806							
1"	98-0408	98-0508	98-0608	98-0708	98-0808	98-0908	98-1008					
1-1/4	98-0410	98-0510	98-0610	98-0710	98-0810		98-1010					
1-1/2	98-0412	98-0512	98-0612	98-0712	98-0812	98-0912	98-1012	98-1212				
1-3/4	98-0414	98-0514	98-0614	98-0714	98-0814		98-1014	98-1214				
2"	98-0416	98-0516	98-0616	98-0716	98-0816	98-0916	98-1016	98-1216	98-1416	98-1616		
2-1/4			98-0618		98-0818		98-1018	98-1218				
2-1/2	98-0420	98-0520	98-0620	98-0720	98-0820	98-0920	98-1020	98-1220	98-1420	98-1620		
2-3/4							98-1022	98-1222				
3"	98-0424	98-0524	98-0624	98-0724	98-0824	98-0924	98-1024	98-1224	98-1424	98-1624		
3-1/2		98-0528	98-0628	98-0728	98-0828	98-0928	98-1028	98-1228	98-1428	98-1628		
4"	98-0432	98-0532	98-0632	98-0732	98-0832	98-0932	98-1032	98-1232	98-1432	98-1632		
4-1/2			98-0636		98-0836		98-1036	98-1236	98-1436	98-1636		
5"			98-0640	98-0740	98-0840	98-0940	98-1040	98-1240	98-1440	98-1640		
5-1/2							98-1044	98-1244	98-1444	98-1644		
6"			98-0648	98-0748	98-0848		98-1048	98-1248	98-1448	98-1648		
7"					98-0856		98-1056	98-1256	98-1456	98-1656		
8"					98-0864		98-1064	98-1264	98-1464	98-1664		
9"							98-1072	98-1272	98-1472	98-1672		
10"							98-1080	98-1280	98-1480	98-1680		
Nuts	34-9004	34-9005	34-9006	34-9007	34-9008	34-9009	34-9010	34-9012	34-9014	34-9016		
Lock Nuts	34-9204	34-9205	34-9206	34-9207	34-9208	34-9209	34-9210	34-9212	34-9214	34-9216		
USS FW	37-9054	37-9055	37-9056	37-9057	37-9058	37-9059	37-9060	37-9062	37-9064	37-9066		
SAE FW	37-9004	37-9005	37-9006	37-9007	37-9008	37-9009	37-9010	37-9012	37-9014	37-9016		

L9® Torque Values For Bolt & Nut Assembly - Not Tapped Holes All Loads Specified in LBS. - All Torque Specified in LB.-FT.

Dia.	1/4-20	5/16-18	3/8-16	7/16-14	1/2-13	9/16-12	5/8-11	3/4-10	7/8-9	1"-8
Tensile Strength	5,720	9,430	13,950	19,130	25,540	32,760	40,680	60,120	83,160	109,080
Proof Load	4,610	7,590	11,230	15,410	20,570	26,390	32,770	48,430	66,990	87,870
Clamp Load	3,450	5,700	8,450	11,550	15,450	19,800	24,550	36,350	50,300	65,900
Install Torque	11	21	33	60	95	140	185	290	505	775

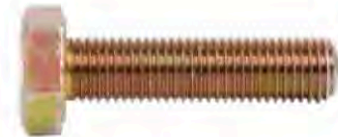
METRIC FASTENERS

HEX HEAD CAP SCREWS

10.9 Hex Head Cap Screws



- Black with oil dipped finish.



- Plating: Yellow Zinc
- Standard: DIN 960 and 961



Fine Thread Black Finish

DIA. PITCH	Qty. 25			Qty. 10		Qty. 5
	M8	M10	M12	M14	M16	M20
LENGTH	1.0	1.25	1.5	1.5	1.5	1.5
20	45-5920	45-6120	45-6320			
25	45-5925	45-6125	45-6325			
30	45-5930	45-6130	45-6330	45-6530		
35	45-5935	45-6135	45-6335	45-6535	45-6735	
40	45-5940	45-6140	45-6340	45-6540	45-6740	
45	45-5945	45-6145	45-6345	45-6545	45-6745	
50	45-5950	45-6150	45-6350	45-6550	45-6750	45-7150
55	45-5955	45-6155	45-6355	45-6555	45-6755	
60	45-5960	45-6160	45-6360	45-6560	45-6760	
65		45-6165	45-6365			
70		45-6170	45-6370	45-6570	45-6770	
80		45-6180	45-6380	45-6580	45-6780	
90		45-6190	45-6390	45-6590	45-6790	
100		45-6191	45-6391	45-6591	45-6791	
110		45-6192				
Nuts	46-3908	46-3910	46-3912	46-3914	46-3916	46-3920
FW	45-3708	45-3710	45-3712	45-3714	45-3716	45-3720
LW	45-4808	45-4810	45-4812	45-4814	45-4816	45-4820

Fine Thread Yellow Zinc Plating

DIA. PITCH	Qty. 25			Qty. 10		
	M8	M10	M12	M14	M16	
LENGTH	1.0	1.25	1.5	1.5	1.5	
20	47-5820	47-6020				
25	47-5825	47-6025	47-6225	47-6425		
30	47-5830	47-6030	47-6230	47-6430	47-6630	
35		47-6035	47-6235	47-6435	47-6635	
40	47-5840	47-6040	47-6240	47-6440	47-6640	
45			47-6245		47-6645	
50	47-5850		47-6250	47-6450	47-6650	
55	47-5855	47-6055				Qty. 5
60		47-6060		47-6460	47-6660	
65		47-6065				
70		47-6070	47-6270	47-6470	47-6670	
75		47-6075				
80			47-6280	47-6480	47-6680	
90		47-6090	47-6290			
100		47-6000	47-6200			
Nuts	46-3908	46-3910	46-3912	46-3914	46-3916	
FW	45-3708	45-3710	45-3712	45-3714	45-3716	
LW	45-4808	45-4810	45-4812	45-4814	45-4816	

8.8 Hex Head Cap Screws

- Approx. equivalent to Grade 5.
- Zinc plated.



Regular Pitch (Coarse Thread)

DIA. PITCH	Qty. 50					Qty. 25			Qty. 10		Qty. 5		Qty. 1
	M3	M4	M5	M6	M7	M8	M10	M12	M14	M16	M18	M20	M24
LENGTH	.5	.7	.8	1.0	1.0	1.25	1.5	1.75	2.0	2.0	2.5	2.5	3.0
8	45-0308	45-0408	45-0508	45-0608									
10	45-0310	45-0410	45-0510	45-0610		45-0810							
12	45-0312	45-0412	45-0512	45-0612**	45-0712	45-0812							
16	45-0316	45-0416	45-0516	45-0616**	45-0716	45-0816**	45-1016**	45-1216					
18			45-0518	45-0618		45-0818							
20	45-0320	45-0420	45-0520	45-0620**	45-0720	45-0820**	45-1020**	45-1220**	45-1420	45-1620			
22			45-0822										
25	45-0325	45-0425	45-0525	45-0625**	45-0725	45-0825**	45-1025**	45-1225**	45-1425**	45-1625**	45-2025		
30		45-0430	45-0530	45-0630**	45-0730	45-0830**	45-1030**	45-1230**	45-1430**	45-1630**	45-1830	45-2030	
35		45-0435	45-0535	45-0635**	45-0735	45-0835**	45-1035**	45-1235**	45-1435**	45-1635**	45-1835	45-2035	
40		45-0440	45-0540	45-0640**	45-0740	45-0840**	45-1040**	45-1240**	45-1440**	45-1640**	45-1840	45-2040	45-2440
45		45-0445	45-0545	45-0645	45-0745	45-0845**	45-1045**	45-1245**	45-1445**	45-1645**	45-1845	45-2045	
50		45-0450	45-0550	45-0650**	45-0750	45-0850**	45-1050**	45-1250**	45-1450**	45-1650**	45-1850	45-2050	45-2450
55				45-0655		45-0855**	45-1055**	45-1255**	45-1455**	45-1655**	45-1855	45-2055	
60			45-0560	45-0660**	45-0760	45-0860**	45-1060**	45-1260**	45-1460**	45-1660**	45-1860	45-2060	45-2460
65				45-0665**		45-0865**	45-1065**	45-1265**	45-1465**	45-1665**	45-1865	45-2065	
70			45-0570	45-0670**	45-0770	45-0870**	45-1070**	45-1270**	45-1470**	45-1670**	45-1870	45-2070	45-2470
75						45-0875	45-1075**	45-1275**		45-1675**	45-1875	45-2075	
80			45-0580	45-0680**		45-0880**	45-1080**	45-1280**	45-1480**	45-1680**	45-1880	45-2080	45-2480
90				45-0690		45-0890**	45-1090	45-1290**	45-1490**	45-1690**	45-1890	45-2090	45-2490
95							45-10905*	45-12905*					
100				45-0691		45-0891	45-1091	45-1291	45-1491**	45-1691	45-1891	45-2091	45-2491
110						45-0892	45-1092	45-1292	45-1492	45-1692	45-1892	45-2092	45-2492
120						45-0893	45-1093	45-1293	45-1493	45-1693	45-1893	45-2093	45-2493
130							45-1094	45-1294	45-1494*	45-1694	45-1894*	45-2094	45-2494
140							45-1095	45-1295	45-1495*	45-1695	45-1895*	45-2095	45-2495
150							45-1096	45-1296		45-1696	45-1896*	45-2096	45-2496
160									45-1497*	45-1697	45-1897*	45-2097	45-2497
180										45-1698	45-1899*		45-2499
200											45-1900*		
Nuts	46-3503	46-3504	46-3505	46-3506	46-3507	46-3508	46-3510	46-3512	46-3514	46-3516	46-3518	46-3520	46-3524
FW	-	45-3504	45-3505	45-3506	45-3507	45-3508	45-3510	45-3512	45-3514	45-3516	45-3518	45-3520	45-3524
LW	-	45-4504	45-4505	45-4506	45-4507	45-4508	45-4510	45-4512	45-4514	45-4516	45-4518	45-4520	45-4524

METRIC FASTENERS

HEX HEAD CAP SCREWS



8.8 Hex Head Cap Screws



- Approx. equivalent to Grade 5.
- Zinc plated.



Fine Thread

DIA. PITCH	Qty. 25			Qty. 10	
	M8	M10	M12	M14	M16
LENGTH	1.0	1.25	1.5	1.5	1.5
10	45-0910				
16	45-0916	45-1116			
20	45-0920	45-1120	45-1320		
25	45-0925	45-1125	45-1325		
30	45-0930	45-1130	45-1330	45-1530	45-1730
35	45-0935	45-1135	45-1335	45-1535	45-1735
40	45-0940	45-1140	45-1340	45-1540	45-1740
45	45-0945	45-1145	45-1345	45-1545	45-1745
50	45-0950	45-1150	45-1350	45-1550	45-1750
55	45-0955	45-1155	45-1355		45-1755
60	45-0960	45-1160	45-1360	45-1560	45-1760
65			45-1365		45-1765
70		45-1170		45-1570	45-1770
75		45-1175	45-1375		45-1775
80		45-1180	45-1380	45-1580	45-1780
90		45-1190	45-1390	45-1590	45-1790
100		45-1191	45-1391	45-1591	45-1791
110		45-1192	45-1392		
120		45-1193	45-1393		
Nuts	46-3608	46-3610	46-3612	46-3614	46-3616
Ultra LN	46-4908	46-4910	46-4912	-	-
FW	45-3508	45-3510	45-3512	45-3514	45-3516
LW	45-4508	45-4510	45-4512	45-4514	45-4516

Very Fine Thread

DIA. PITCH	Qty. 25		Qty. 10
	M10	M12	
LENGTH	1.0	1.25	
20	45-1200	-	
25	45-1201	45-1401	
30	45-1202	45-1402	
35	45-1203	45-1403	
40	45-1204	45-1404	
45	45-1205	45-1405	
50	45-1206	45-1406	
55	-	45-1407	
60	45-1208	45-1408	
70	45-1210	-	
90	-	45-1414	

JIS 8.8 Small Hex Head Cap Screws



- Class 8.8.
- Heat treated steel.
- Zinc plated.
- Fully Threaded.

Dia.	Pitch	Length	No.	Head Size	Dia.	Pitch	Length	No.	Head Size	Dia.	Pitch	Length	No.	Head Size
M8	1.25	16	45-8816	Height 5.5 MM	M10	1.25	20	45-9020	Height 7MM	M12	1.25	20	45-9220	Height 8MM
		20	45-8820				25	45-9025				25	45-9225	
		25	45-8825				30	45-9030				30	45-9230	
		30	45-8830				35	45-9035				35	45-9235	
		35	45-8835				40	45-9040				40	45-9240	
		40	45-8840	Width 12MM			45	45-9045	Width 14MM			50	45-9250	Width 17MM
		45	45-8845				50	45-9050				60	45-9260	
		50	45-8850				60	45-9060				70	45-9270	
		60	45-8860				70	45-9070						
		70	45-8870											



NUTS

HEX NUTS

Grade 8 Alloy Steel Hex Nuts



Coarse (USS)

Size	No.	Qty.	No.	Width Across Flats	Thickness
1/4-20	34-3804	100	34-38042	7/16	7/32
5/16-18	34-3805	100	34-38052	1/2	17/64
3/8-16	34-3806	100	34-38062	9/16	21/64
7/16-14	34-3807	50	34-38071	11/16	3/8
1/2-13	34-3808	50	34-38082	3/4	7/16
9/16-12	34-3809	50	34-38091	7/8	31/64
5/8-11	34-3810	50	34-38101	15/16	35/64
3/4-10	34-3812	25	34-38121	1-1/8	41/64
7/8-9	34-3814	10	34-38141	1-5/16	3/4
1-8	34-3816	10	34-38161	1-1/2	55/64
1-1/8-7	34-3818**	5	34-38181**	1-11/16	31/32
1-1/4-7	34-3820**	5	34-38201**	1-7/8	1-1/16
1-1/2-6	34-3824**	1	34-38241**	2-1/4	1-9/32

Fine (SAE)

Size	No.	Width Across Flats	Thickness
1/4-28	34-3904	7/16	7/32
5/16-24	34-3905	1/2	17/64
3/8-24	34-3906	9/16	21/64
7/16-20	34-3907	11/16	3/8
1/2-20	34-3908	3/4	7/16
9/16-18	34-3909	7/8	31/64
5/8-18	34-3910	15/16	35/64
3/4-16	34-3912	1-1/8	41/64
7/8-14	34-3914	1-5/16	3/4
1-14	34-3916	1-1/2	55/64
1-1/8-12	34-3918**	1-11/16	31/32
1-1/4-12	34-3920**	1-7/8	1-1/16
1-1/2-12	34-3924**	2-1/4	1-9/32

Approved Grade 8 Nut Identification Markings

Old Style Markings



Dot and dash located
60° apart

New Style Markings



Two circumferential
lines located 60° apart



NUTS

HEX NUTS

Grade 8 Plain Finished Alloy Steel Hex Nuts



Coarse Thread (USS) Plain Finish

Size	No.	Width Across Flats	Thickness
1/4-20	34-9804	7/16	7/32
5/16-18	34-9805	1/2	17/64
3/8-16	34-9806	9/16	21/64
7/16-14	34-9807	11/16	3/8
1/2-13	34-9808	3/4	7/16
9/16-12	34-9809	7/8	31/64
5/8-11	34-9810	15/16	35/64
3/4-10	34-9812	1-1/8	41/64
7/8-9	34-9814	1-5/16	3/4
1"-8	34-9816	1-1/2	55/64
1-1/8-7	34-3818	1-11/16	31/32
1-1/4-7	34-3820	1-7/8	1-1/16

Approved Grade 8 Nut Identification Markings

Old Style Markings



Dot and dash located
60° apart

New Style Markings



Two circumferential
lines located 60° apart



METRIC FASTENERS

HEX NUTS

Class 8 Hex Nuts For Use With Class 8.8 Cap Screws

Regular Pitch Zinc Plated			Fine Pitch Plain Finish			Very Fine Pitch Plain Finish			Height MM	Width Across Flats
Bolt Size	Pitch	No.	Pitch	No.	Qty.	Pitch	No.	Qty.		
M3	.50	46-3503							2.4	5.5
M4	.70	46-3504							3.2	7
M5	.80	46-3505							4	8
M6	1.00	46-3506							5	10
M7	1.00	46-3507							5.5	11
M8	1.25	46-3508	1.00	46-3608	25				6.5	13
M10	1.50	46-3510	1.25	46-3610	25	1.00	46-3710	25	8	17
M12	1.75	46-3512	1.50	46-3612	25	1.25	46-3712	25	10	19
M14	2.00	46-3514	1.50	46-3614	10				11	22
M16	2.00	46-3516	1.50	46-3616	10				13	24
M18	2.50	46-3518	1.50	46-3618	10				15	27
M20	2.50	46-3520	1.50	46-3620	10				16	30
M24	3.00	46-3524							19	36



JIS Small Hex Nuts

Dia.	Pitch	Dia. Across Flats	No.
M8	1.25	12 MM	46-4008
M10	1.25	14 MM	46-4010
M10	1.50	14 MM	46-4011
M12	1.25	17 MM	46-4012

JIS - Japanese Industrial Standard



- Class 8.
- Heat Treated Steel.
- Zinc Plated.



NUTS

LOCK NUTS



Grade 8 Nylon Insert Lock Nuts

- Nylon locking element will not gall or strip threads or remove plating.
- Full locking effectiveness from -65° to 250°F.
- Provides a complete 360° locking circle around threads to prevent loosening under vibration and impact.
- Locks at any position on the fastener and allows precise adjustment.
- Nylon collar seals the threads to protect locked threads against corrosion for easier removal.
- Zinc yellow plated finish.
- Identification:

Nylon Collar: Purple.

Grade identification: Double notched corners, or "6 dots".



Coarse (USS)				Fine (SAE)			
Size	No.	Width Across Flats	Thickness	Size	No.	Size	No.
1/4-20	34-8404	7/16	5/16	1/4-28	34-8504		
5/16-18	34-8405	1/2	11/32	5/16-24	34-8505		
3/8-16	34-8406	9/16	29/64	3/8-24	34-8506		
7/16-14	34-8407	5/8	29/64	7/16-20	34-8507		
1/2-13	34-8408	3/4	19/32	1/2-20	34-8508		
9/16-12	34-8409	7/8	41/64	9/16-18	34-8509		
5/8-11	34-8410	15/16	3/4	5/8-18	34-8510		
3/4-10	34-8412	1-1/16	7/8	3/4-16	34-8512		
7/8-9	34-8414	1-1/4	63/64	7/8-14	34-8514		
1-8	34-8416	1-7/16	1-3/64	1-14	34-8516		
1-1/8-7	34-8418	1-5/8	1-11/64	1-1/8-12	34-8518		
1-1/4-7	34-8420	1-13/16	1-25/64	1-1/4-12	34-8520		
1-1/2-6	34-8424	2-3/16	1-39/64	1-1/2-12	34-8524		

Grade 5 Nylon Insert Lock Nuts

- NYLON LOCKING ELEMENT - Will not gall or strip threads or remove plating.
- VIBRATION RESISTANT - Provides a complete 360° locking circle around threads to prevent loosening under vibration and impact.
- UNIVERSAL FIT - Locks at any position on the fastener and allows precise adjustment.
- PROTECTS THREADS - Nylon collar seals threads to protect locked threads against corrosion for easier removal.
- HEAVY DUTY LOCKING - Fully locking effectiveness from -65°F to +250°F.
- EASY IDENTIFICATION:

Nylon Collar - Purple

Steel Body - Clear Zinc Trivalent Plating RoHS Compliant

Grade 5 Markings - 3 dots or 1 notch on the corner



Coarse (USS)				Fine (SAE)			
Size	No.	Width Across Flats	Thickness	Size	No.	Size	No.
1/4-20	34-9404	7/16	5/16	1/4-28	34-9704		
5/16-18	34-9405	1/2	11/32	5/16-24	34-9705		
3/8-16	34-9406	9/16	29/64	3/8-24	34-9706		
7/16-14	34-9407	5/8	29/64	7/16-20	34-9707		
1/2-13	34-9408	3/4	19/32	1/2-20	34-9708		
5/8-11	34-9410	15/16	3/4	5/8-18	34-9710		
3/4-10	34-9412	1-1/16	7/8	3/4-16	34-9712		
7/8-9	34-9414	1-1/4	63/64	7/8-14	34-9714		
1-8	34-9416	1-7/16	1-3/64	1-14	34-9716		



NUTS/WASHERS

L9® FASTENING SYSTEM

Coarse (USS)			Fine (SAE)		
Size	No.	Width Across Flats	Thickness	Size	No.
1/4-20	34-9004	7/16	17/64	1/4-28	34-9104
5/16-18	34-9005	1/2	5/16	5/16-24	34-9105
3/8-16	34-9006	9/16	3/8	3/8-24	34-9106
7/16-14	34-9007	11/16	7/16	7/16-20	34-9107
1/2-13	34-9008	3/4	33/64	1/2-20	34-9108
9/16-12	34-9009	7/8	37/64	9/16-18	34-9109
5/8-11	34-9010	15/16	21/32	5/8-18	34-9110
3/4-10	34-9012	1-1/8	49/64	3/4-16	34-9112
7/8-9	34-9014	1-5/16	57/64	7/8-14	34-9114
1-8	34-9016	1-1/2	1-1/64		

L9® Hex Nuts Yellow Cadmium & Wax Finish



Coarse (USS)			Fine (SAE)		
Size	No.	Width Across Flats	Thickness	Size	No.
1/4-20	34-9204	7/16	5/16	1/4-28	34-9304
5/16-18	34-9205	1/2	11/32	5/16-24	34-9305
3/8-16	34-9206	9/16	13/32	3/8-24	34-9306
7/16-14	34-9207	11/16	7/16	7/16-20	34-9307
1/2-13	34-9208	3/4	33/64	1/2-20	34-9308
9/16-12	34-9209	7/8	37/64	9/16-18	34-9309
5/8-11	34-9210	15/16	21/32	5/8-18	34-9310
3/4-10	34-9212	1-1/8	49/64	3/4-16	34-9312
7/8-9	34-9214	1-5/16	57/64		
1-8	34-9216	1-1/2	1-1/64		

L9® Lock Nuts Yellow Cadmium & Wax Finish



Bolt Size	No.	Inner Dia.	Outer Dia.	Thickness
1/4	37-9054	9/32	3/4	1/16
5/16	37-9055	11/32	7/8	3/32
3/8	37-9056	13/32	1"	3/32
7/16	37-9057	15/32	1-1/4	7/64
1/2	37-9058	17/32	1-3/8	9/64
9/16	37-9059	19/32	1-1/2	9/64
5/8	37-9060	21/32	1-3/4	3/16
3/4	37-9062	25/32	2"	3/16
7/8	37-9064	15/16	2-1/4	3/16
1"	37-9066	1-1/16	2-1/2	3/16

L9® USS Flatwashers



Bolt Size	No.	Inner Dia.	Outer Dia.	Thickness
1/4	37-9004	9/32	5/8	1/16
5/16	37-9005	11/32	11/16	1/16
3/8	37-9006	13/32	13/16	3/32
7/16	37-9007	15/32	15/16	3/32
1/2	37-9008	17/32	1-1/16	3/32
9/16	37-9009	19/32	1-3/16	3/32
5/8	37-9010	21/32	1-5/16	11/64
3/4	37-9012	13/16	1-1/2	11/64
7/8	37-9014	15/16	1-3/4	11/64
1"	37-9016	1-1/16	2"	11/64

L9® SAE Flatwashers



NUTS

HEX NUTS



Finished Hex Nuts



- Conforms to IFI and ASME specifications.
- Full finished dimensions.
- Double chamfered for positive wrenching, up to and including 5/8".
- Finished faces for full seating.
- Zinc plated for corrosion protection.

Coarse (USS)				Fine (SAE)	
Size	No.	Width Across Flats	Thickness	Size	No.
1/4-20	34-3504	7/16	7/32	1/4-28	34-3604
5/16-18	34-3505	1/2	17/64	5/16-24	34-3605
3/8-16	34-3506	9/16	21/64	3/8-24	34-3606
7/16-14	34-3507	11/16	3/8	7/16-20	34-3607
7/16-14	34-350758**	5/8	3/8	7/16-20	34-360758**
1/2-13	34-3508	3/4	7/16	1/2-20	34-3608
9/16-12	34-3509	7/8	31/64	9/16-18	34-3609
5/8-11	34-3510	15/16	35/64	5/8-18	34-3610
3/4-10	34-3512	1-1/8	41/64	3/4-16	34-3612
7/8-9	34-3514	1-5/16	3/4	7/8-14	34-3614
1-8	34-3516	1-1/2	55/64	1-14	34-3616
1-1/8-7	34-3518*	1-11/16	31/32	1-1/8-12	34-3618*
1-1/4-7	34-3520*	1-7/8	1-1/16	1-1/4-12	34-3620*
1-1/2-6	34-3524*	2-1/4	1-9/32	1-1/2-12	34-3624*
1-3/4-5	34-3528*	2-5/8	1-1/2	1-3/4-12	34-3628*

** Old standard 5/8" across flats.

* Black and oil finish.

Machine Screw Nuts



- Chamfered.
- Zinc plated.

Size	No.	Width Across Flats	Thickness
4-40	34-7000	1/4	3/32
5-40	34-7005	5/16	7/64
6-32	34-7001	5/16	7/64
8-32	34-7002	11/32	1/8
10-24	34-7003	3/8	1/8
10-32	34-7103	3/8	1/8
12-24	34-7012	7/16	5/32
1/4-20	34-7004	7/16	3/16

USS Heavy Hex Nuts



- Zinc plated.
- Double chamfered.
- Conforms to ANSI B18.2.2.

Size	No.	Width Across Flats	Thickness
1/4-20	34-7604	1/2	15/64
5/16-18	34-7605	9/16	19/64
3/8-16	34-7606	11/16	23/64
7/16-14	34-7607	3/4	27/64
1/2-13	34-7608	7/8	31/64
9/16-12	34-7609	15/16	35/64
5/8-11	34-7610	1-1/16	39/64
3/4-10	34-7612	1-1/4	47/64
7/8-9	34-7614	1-7/16	55/64
1-8	34-7616	1-5/8	63/64

Finished Hex Nuts Galvanized



Coarse (USS)			
Size	No.	Width Across Flats	Thickness
1/4-20	34-17004	7/16	7/32
5/16-18	34-17005	1/2	17/64
3/8-16	34-17006	9/16	21/64
1/2-13	34-17008	3/4	7/16
5/8-11	34-17010	15/16	35/64
3/4-10	34-17012	1-1/8	41/64

- HOT-DIP GALVANIZED - Provides superior corrosion protection in demanding environments.
- FINISHED HEX NUTS - Finished faces for uniform workload distribution and full seating. Full finished dimensions. Double chamfered for positive wrenching.
- MEETS A563A SPECIFICATION For use with Grade 2 Hot-Dip Galvanized fasteners.
- MADE IN THE U.S.A.

Grade 5 Finished Hex Nuts



Coarse (USS)

Size	No.	Qty.	No.	Width Across Flats	Thickness
1/4-20	34-5004	100	34-50042	7/16	7/32
5/16-18	34-5005	100	34-50052	1/2	17/64
3/8-16	34-5006	100	34-50062	9/16	21/64
7/16-14	34-5007	50	34-50071	11/16	3/8
1/2-13	34-5008	50	34-50082	3/4	7/16
9/16-12	34-5009	50	34-50091	7/8	31/64
5/8-11	34-5010	25	34-50101	15/16	35/64
3/4-10	34-5012	25	34-50121	1-1/8	41/64
7/8-9	34-5014	10	34-50141	1-5/16	3/4
1-8	34-5016	10	34-50161	1-1/2	55/64
1-1/8-7	34-5018	5	34-50181	1-11/16	31/32
1-1/4-7	34-5020	5	34-50201	1-7/8	1-1/16
1-3/8-6	34-5022	5	34-50221	2-1/16	1-11/64
1-1/2-6	34-5024	5	34-50241	2-1/4	1-9/32

Fine (SAE)

Size	No.	Qty.	Width Across Flats	Thickness
1/4-28	34-5104		7/16	7/32
5/16-24	34-5105		1/2	17/64
3/8-24	34-5106		9/16	21/64
7/16-20	34-5107		11/16	3/8
1/2-20	34-5108		3/4	7/16
9/16-18	34-5109		7/8	31/64
5/8-18	34-5110		15/16	35/64
3/4-16	34-5112		1-1/8	41/64
7/8-14	34-5114		1-5/16	3/4
1-14	34-5116		1-1/2	55/64
1-1/8-12	34-5118		1-11/16	31/32
1-1/4-12	34-5120		1-7/8	1-1/16
1-3/8-12	34-5122		2-1/16	1-11/64
1-1/2-12	34-5124		2-1/4	1-9/32

Approved Grade 5 Nut Identification Markings

Old Style Markings



Dot and dash located
120° apart

New Style Markings



Two circumferential
lines located 120°
apart

Grade 5 Hex Nuts Plain Finish

Coarse (USS)

Size	No.	Width Across Flats	Thickness
1/4-20	34-9504	7/16	7/32
5/16-18	34-9505	1/2	17/64
3/8-16	34-9506	9/16	21/64
7/16-14	34-9507	11/16	3/8
1/2-13	34-9508	3/4	7/16
5/8-11	34-9510	15/16	35/64
3/4-10	34-9512	1-1/8	41/64
7/8-9	34-9514	1-5/16	3/4
1-8	34-9516	1-1/2	55/64



METRIC FASTENERS

HEX NUTS

Class 10 Hex Nuts

Bolt Size	Regular Pitch			Fine Pitch		
	Pitch	Across Flats	No.	Pitch	No.	Qty.
M6	1.00	10mm	46-3806	-	-	-
M8	1.25	13mm	46-3808	1.00	46-3908	50
M10	1.50	17mm	46-3810	1.25	46-3910	25
M10*	1.50	16mm	46-3850	-	-	-
M12	1.75	19mm	46-3812	1.50	46-3912	25
M12*	1.75	18mm	46-3852	-	-	-
M14	2.00	22mm	46-3814	1.50	46-3914	10
M16	2.00	24mm	46-3816	1.50	46-3916	10
M18	2.50	27mm	46-3818	-	-	-
M20	2.50	30mm	46-3820	-	-	-
M22	2.50	32mm	46-3822	-	-	-
M24	3.00	36mm	46-3824	-	-	-



- For use with 10.9 Cap screws.
- Zinc plated.
- Meet DIN 934-10 standards.
- Alloy steel.

Fasteners

Class 10 Nylon Insert Lock Nuts



46-5812



46-5918

Regular Pitch			Fine Pitch			Very Fine Pitch			Width Across Flats	Wrench Pad
Bolt Size	No.	Pitch	No.	Pitch	Qty.	No.	Pitch	Qty.		
M6	46-5806	1.00	-	-	-	-	-	-	10.0	4.5
M8	46-5808	1.25	46-5908	1.00	25	-	-	-	13.0	6.0
M10	46-5810	1.50	46-5910	1.25	25	46-6010	1.00	25	17.0	7.0
M12	46-5812	1.75	46-5912	1.50	10	46-6012	1.25	10	19.0	9.0
M14	46-5814	2.00	46-5914	1.50	10	-	-	-	22.0	10.0
M16	46-5816	2.00	46-5916	1.50	10	-	-	-	24.0	11.0
M18	46-5818	2.50	46-5918	1.50	5	-	-	-	27.0	14.0
M20	46-5820	2.50	46-5920	1.50	5	-	-	-	30.0	15.0
M22	46-5822	2.50	-	1.50	-	-	-	-	32.0	15.0
M24	46-5824	3.00	-	1.50	-	-	-	-	36.0	16.0

Nylon Insert Flange Lock Nuts

Bolt Size	Regular Pitch		Width Across Flats (mm)	Min. Height (mm)
	No.	Pitch		
M6	46-16006	1.0	10	4.9
M8	46-16008	1.25	13	6.4
M10	46-16010	1.5	15	8.0
M12	46-16012	1.75	18	10.4
M14	46-16014	2.0	21	12.1
M16	46-16016	2.0	24	14.1
M20	46-16020	2.5	30	16.9



46-16012



METRIC FASTENERS

HEX NUTS

Class 10 Hex Nuts
For Use With Class 10.9 Cap Screws



Bolt Size	Pitch	Regular Pitch		Fine Pitch		Qty.
		Across Flats	No.	Pitch	No.	
M6	1.00	10mm	46-3806	-	-	-
M8	1.25	13mm	46-3808	1.00	46-3908	50
M10	1.50	17mm	46-3810	1.25	46-3910	25
M10*	1.50	16mm	46-3850	-	-	-
M12	1.75	19mm	46-3812	1.50	46-3912	25
M12*	1.75	18mm	46-3852	-	-	-
M14	2.00	22mm	46-3814	1.50	46-3914	10
M16	2.00	24mm	46-3816	1.50	46-3916	10
M18	2.50	27mm	46-3818	-	-	-
M20	2.50	30mm	46-3820	1.50	46-3920	10
M22	2.50	32mm	46-3822	-	-	-
M24	3.00	36mm	46-3824	-	-	-

METRIC FASTENERS

HEX NUTS



Prevailing Torque Locknuts



Bolt Size	Pitch	No.	Height MM	Width Across Flats
M5	.80	46-4805*	5.1	8
M6	1.00	46-4806	6	10
M8	1.25	46-4808	8	13
M8	1.00	46-4908*	8	13
M10	1.50	46-4810	10	17
M10	1.25	46-4910*	10	17
M10	1.00	46-4911*	10	17
M12	1.75	46-4812	12	19
M12	1.50	46-4912*	12	19
M12	1.25	46-4913*	12	19
M14	2.00	46-4814	14	22
M16	2.00	46-4816	16	24
M18	2.50	46-4818	18	27
M20	2.50	46-4820	20	30
M22	2.50	46-4822	22	32
M24	3.00	46-4824	24	36

* Class 8 only.

- BUILT-IN LOCKING FEATURE - When torqued completely the interference fit provides full locking action with the bolt threads.
- ZINC PLATED FINISH - Provides corrosion resistance.
- CLASS 10 - For use with 10.9 cap screws (except where otherwise noted).

Class 10 Flange Nuts



- High strength Class 10 flange nuts.
- Zinc finish.

Dia.	Pitch	ZINC	No.	Hex Size
M6	1.0	46-15006		10MM
M8	1.25	46-15008		13MM
M10	1.5	46-15010		15MM
M12	1.75	46-15012		18MM
M14	2.0	46-15014		21MM
M16	2.0	46-15016		24MM
M20	2.5	46-15020		30MM

Serrated Class 10 Flange Locknuts



- High strength Class 10 flange nuts.
- Serrated flange face provides vibration resistance.
- Zinc finish.

Dia.	Pitch	No.	Hex Size
M6	1.0	46-25006	10MM
M8	1.25	46-25008	13MM
M10	1.5	46-25010	15MM
M12	1.75	46-25012	18MM
M16	2.0	46-25016	24MM

JIS Metric Class 10 Flange Nuts



- High strength Class 10 flange nuts.
- Zinc plated.
- Meets JIS B-1190 specifications.

Dia.	Pitch	No.	Hex Size
M6	1.0	45-4600	10MM
M8	1.25	45-4601	12MM
M10	1.25	45-4602	14MM

Class 10 Flange Locknuts



- High strength Class 10 flange locknuts.
- Black finish.

Dia.	Pitch	BLACK	No.	Hex Size
M6	1.0	46-5006		10MM
M8	1.25	46-5008		13MM
M10	1.5	46-5010		15MM
M12	1.75	46-5012		18MM



METRIC FASTENERS

HEX NUTS

Class 8 Hex Nuts

Regular Pitch Zinc Plated			Fine Pitch Plain Finish			Very Fine Pitch Plain Finish			Height MM	Width Across Flats
Bolt Size	Pitch	No.	Pitch	No.	Qty.	Pitch	No.	Qty.		
M3	.50	46-3503							2.4	5.5
M4	.70	46-3504							3.2	7
M5	.80	46-3505							4	8
M6	1.00	46-3506							5	10
M7	1.00	46-3507							5.5	11
M8	1.25	46-3508	1.00	46-3608	25				6.5	13
M10	1.50	46-3510	1.25	46-3610	25	1.00	46-3710	25	8	17
M12	1.75	46-3512	1.50	46-3612	25	1.25	46-3712	25	10	19
M14	2.00	46-3514	1.50	46-3614	10				11	22
M16	2.00	46-3516	1.50	46-3616	10				13	24
M18	2.50	46-3518	1.50	46-3618	10				15	27
M20	2.50	46-3520	1.50	46-3620	10				16	30
M24	3.00	46-3524							19	36



- For use with 8.8 Cap screws.
- Head treated carbon steel.



Class 8 Metric Nylon Insert Lock Nuts

Regular Pitch Class 8

Bolt Size	Pitch	Lock Ring Color	No.
M3	0.50	PURPLE or WHITE	46-14503*
M4	0.70		46-14504
M5	0.80	PURPLE	46-14505
M6	1.00		46-14506
M8	1.25		46-14508
M10	1.50		46-14510
M12	1.75	PURPLE	46-14512
M14	2.00		46-14514
M16	2.00		46-14516
M20	2.50		46-14520



*NOTE: 46-14503 is Class 6.

Nylon Insert Lock Nuts



Fine Pitch			Very Fine Pitch			Height MM	Width Across Flats
Bolt Size	Pitch	No.	Pitch	No.	Qty.		
M4	.70	46-5504				5	7
M5	.80	46-5505				5	8
M6	1.00	46-5506				6	10
M8	1.25	46-5508				8	13
M10	1.50	46-5510	1.25	46-5610	25	10	17
M12	1.75	46-5512	1.50	46-5612	10	12	19
M14	2.00	46-5514				14	22
M16	2.00	46-5516				16	24
M18	2.50	46-5518				18	27
M20	2.50	46-5520				20	30
M24	3.00	46-5524				24	36



NUTS

LOCK NUTS

Ultra - Lock Nuts

- Produced from medium carbon steel and heat treated to **meet Grade 8 performance standards** of Industrial Fastener Institute.
- Developed to meet the exacting specifications of Automotive Fastener Engineering Specialists.
- All steel grade C nut offers a proven, predictable torque-tension relationship in critical, high strength applications with Grade 8 bolts.
- Six dots at 60° intervals on the crown of the nut identify these as a grade C prevailing torque nut.
- Three point top thread deflections (at 120° intervals in the crown of the nut), downward and inward is used to produce positive repeated prevailing torque, meaning they are reusable even when power driven.
- Cadmium and wax finish.
- Immersed in industrial wax and baked dry for reduced application torque of up to 50% of standard "dry" torque values. Failure to lower torque will result in thread stripping or bolt yield.

Coarse (USS)				Fine (SAE)	
Size	No.	Width Across Flats	Thickness	Size	No.
1/4-20	34-4804	7/16	7/32	1/4-28	34-4904
5/16-18	34-4805	1/2	17/64	5/16-24	34-4905
3/8-16	34-4806	9/16	21/64	3/8-24	34-4906
7/16-14	34-4807	11/16	3/8	7/16-20	34-4907
1/2-13	34-4808	3/4	7/16	1/2-20	34-4908
9/16-12	34-4809	7/8	31/64	9/16-18	34-4909
5/8-11	34-4810	15/16	35/64	5/8-18	34-4910
3/4-10	34-4812	1-1/8	41/64	3/4-16	34-4912
7/8-9	34-4814	1-5/16	47/64	7/8-14	34-4914
1-8	34-4816	1-1/2	55/64	1-14	34-4916
1-1/8-7	34-4818*	1-11/16	61/64	1-1/8-12	34-4918*
1-1/4-7	34-4820*	1-7/8	1-1/32	1-1/4-12	34-4920*
1-1/2-6	34-4824*	2-1/4	1-1/8	1-1/2-12	34-4924*

* - Collar Style

Note: Parts through 7/8" diameter are MADE IN THE U.S.A



Ultra-Lock Tall Nuts



25% Higher
Wrenching Area

Coarse (USS)			
Size	No.	Width Across Flats	Thickness
1/4-20	34-4604	7/16	9/32
5/16-18	34-4605	1/2	21/64
3/8-16	34-4606	9/16	13/32
7/16-14	34-4607	11/16	15/32
1/2-13	34-4608	3/4	35/64
5/8-11	34-4610	15/16	23/32
3/4-10	34-4612	1-1/8	51/64

NUTS

MISCELLANEOUS NUTS



Castle Nuts



- Zinc plated.

Size	Width Across Flats	Thickness	Fine (SAE)
1/4-28	7/16	9/32	34-7504
5/16-24	1/2	21/64	34-7505
3/8-24	9/16	13/32	34-7506
7/16-20	11/16	29/64	34-7507
1/2-20	3/4	9/16	34-7508
9/16-18	7/8	39/64	34-7509
5/8-18	15/16	23/32	34-7510
3/4-16	1-1/8	13/16	34-7512
7/8-14	1-5/16	29/32	34-7514
1-14	1-1/2	1"	34-7516

Keps Nuts



- With external lockwasher.
- Zinc plated.

Coarse (USS)		Fine (SAE)	
Size	K-M No.	Size	No.
4-40	34-7200		
6-32	34-7201		
8-32	34-7202		
10-24	34-7203	10-32	34-7303
12-24	34-7212		
1/4-20	34-7204	1/4-28	34-7304
5/16-18	34-7205	5/16-24	34-7305
3/8-16	34-7206	3/8-24	34-7306

Square Nuts



- Square profile allows for a more secure grip while tightening.
- Grade 2

USS Dia.	Zinc Plated No.	Plain Finish No.	Width Across Flats	Thickness
1/4-20	34-8004	34-8204	7/16	7/32
5/16-18	34-8005	34-8205	9/16	17/64
3/8-16	34-8006	34-8206	5/8	21/64
7/16-14	34-8007	34-8207	3/4	3/8
1/2-13	34-8008	34-8208	13/16	7/16
5/8-11	34-8010	34-8210	1"	35/64
3/4-10	34-8012	34-8212	1-1/8	21/32

Weld Nuts



Tab Style



Projection Style

Tab Style

- WELD IN PLACE - Quickly install female threads in through holes.
- SELF-LOCATING PILOT - Quickly orients weld nut in a drilled hole.
- SPECIFICATIONS - C1010 High-Welding Quality, Low Carbon Steel. Plain Finish.
- MADE IN THE U.S.A.

Projection Style

- THREE PROJECTION POINTS - Convenient projections allow for fast and easy welding to a metal surface.
- COMPACT DESIGN - Smaller footprint than tab-style weld nuts. Allows for installation in tight spaces.
- WELD IN PLACE - Quickly install female threads in through holes.
- DURABLE CONSTRUCTION - C1010 Carbon Steel. Plain Finish.
- MADE IN THE U.S.A.

Size	Tab Style	Width	Thickness	Length	Pilot Hole Drill Size	Projection Style	Width	Thickness	Pilot Hole Drill Size
10-24	34-1103	0.390	0.097	0.640	1/4	34-1203	0.500	0.187	.406 (13/32)
1/4-20	34-1104	0.520	0.128	0.827	5/16	34-1204	0.501	0.187	.406 (13/32)
5/16-18	34-1105	0.655	0.145	0.999	3/8	34-1205	0.562	0.218	.469 (15/32)
3/8-16	34-1106	0.655	0.145	0.999	29/64	34-1206	0.625	0.250	.531 (17/32)
1/2-13	34-1108	0.797	0.191	1.140	39/64	34-1208	0.812	0.375	.719 (23/32)

NOTE: All measurements in inches.

METRIC FASTENERS

HEX NUTS



JIS Small Hex Nuts



- Heat treated steel.
- Class 8.
- Zinc plated.

Bolt Size	Pitch	Dia. Across Flats	No.
M8	1.25	12 MM	46-4008
M10	1.25	14 MM	46-4010
M10	1.50	14 MM	46-4011
M12	1.25	17 MM	46-4012

Hex Jam Nuts



- Class 8.
- Plated.

Bolt Size	Pitch	No.	Height	Width Across Flats
M4	.7	46-6504	2.2	7
M5	.8	46-6505	2.7	8
M6	1.00	46-6506	3.2	10
M8	1.25	46-6508	4	13
M10	1.50	46-6510	5	17
M12	1.75	46-6512	6	19
M14	2.00	46-6514	7	22
M16	2.00	46-6516	8	24
M18	2.50	46-6518	8	27
M20	2.50	46-6520	10	30
M24	3.00	46-6524	12	36

Wing Nuts



- Cold formed steel.
- Zinc plated.

Bolt Size	Regular Pitch	No.	Height MM	Width Across Flats
M6	1.00	46-6206	13.6	12.7
M8	1.25	46-6208	14.8	13.8

Weld Nuts



- WELD IN PLACE - Quickly install female threads in through holes.
- SELF-LOCATING PILOT - Quickly orients weld nut in a drilled hole.
- SPECIFICATIONS - C1010 High-Welding Quality, Low Carbon Steel, Plain Finish.
- MADE IN THE U.S.A.

Size	No.	Width	Thickness	Length	Pilot Hole Drill Size
M6X1.00	46-1106	13.0	3.2	20.5	8.0
M8X1.25	46-1108	16.0	3.6	25.0	10.0
M12X1.75	46-1112	19.0	4.8	28.5	19/32

Note: All measurements in millimeters except 19/32 drill size.

Castle Nuts



Slotted



Castle

Diameter	Regular Pitch		Fine Pitch		Style	Height (mm)	Width Across Flats
	Pitch	No.	Pitch	No.			
M6	1.00	46-16506			Slotted	7.5	10
M8	1.25	46-16508	1.00	46-16608		9.5	13
M10	1.50	46-16510	1.25	46-16610		12	17
M12	1.75	46-17512	1.50	46-18612	Castle	15	19
M16	2.00	46-17516	1.50	46-18616		19	24
M20	2.50	46-17520	1.50	46-18620		22	30

Alloy Steel Flat Washers

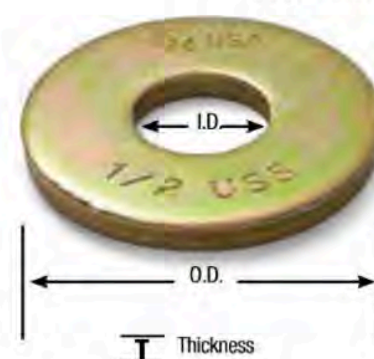
For Grade 8 Applications

The function of the washer is to provide load distribution and/or a smooth bearing surface for controlled torquing.

- Enhanced thickness pattern provides increased resistance to dishing and distortion.
- Close-fitting I.D. dimension that will provide increased load bearing capability.
- Zinc Yellow with Hexavalent Chromate plating.
- Exceeds SAE specifications.
- MADE IN THE U.S.A.

Bolt Size	No.	Qty.	No.	No.	Qty.	Inner Dia.	Outer Dia.	Nom. "T"
1/4	37-3804*	100	37-38041*	37-38042*	500	9/32	3/4	5/64
5/16	37-3805*	100	37-38051*	37-38052*	500	11/32	7/8	3/32
3/8	37-3806*	100	37-38061*			13/32	1"	3/32
7/16	37-3807*	50	37-38071*			15/32	1-1/4	3/32
1/2	37-3808*	50	37-38081*			17/32	1-3/8	1/8
9/16	37-3809*	25	37-38091*			19/32	1-1/2	1/8
5/8	37-3810*	25	37-38101*			21/32	1-3/4	5/32
3/4	37-3812*	25	37-38121*			13/16	2"	5/32
7/8	37-3814*	10	37-38141*			15/16	2-1/4	9/64
1"	37-3816*	10	37-38161*			1-3/32	2-1/2	9/64
1-1/8	37-3818**	5	37-38181**			1-1/4	2-3/4	9/64
1-1/4	37-3820**	5	37-38201**			1-3/8	3"	9/64
1-1/2	37-3824**	5	37-38241**			1-5/8	3-1/2	9/64

USS Pattern



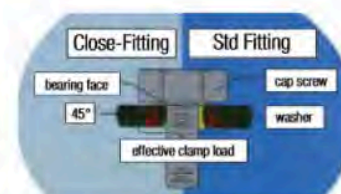
SAE Pattern



Bolt Size	No.	Qty.	No.	No.	Qty.	Inner Dia.	Outer Dia.	Nom. "T"
1/4	37-3904*	100	37-39041*	37-39042*	500	9/32	5/8	5/64
5/16	37-3905*	100	37-39051*	37-39052*	500	11/32	11/16	3/32
3/8	37-3906*	100	37-39061*			13/32	13/16	3/32
7/16	37-3907*	100	37-39071*			15/32	59/64	3/32
1/2	37-3908	50	37-39081			17/32	1-1/16	7/64
9/16	37-3909	50	37-39091			19/32	1-3/16	7/64
5/8	37-3910	50	37-39101			21/32	1-5/16	1/8
3/4	37-3912	25	37-39121			13/16	1-15/32	9/64
7/8	37-3914	25	37-39141			15/16	1-3/4	9/64
1"	37-3916	25	37-39161			1-3/32	2"	9/64
1-1/8	37-3918**	10	37-39181**			1-1/4	2-1/4	9/64
1-1/4	37-3920**	10	37-39201**			1-3/8	2-1/2	5/32
1-1/2	37-3924**	10	37-39241**			1-5/8	3"	5/32
2"	37-3932**	5	37-39321**			2-1/8	3-1/2	11/64

* Upgraded Close-Fitting Kimball Midwest Washers Benefits

- Better use of the effective clamp load - reducing the gaps between the washer and cap screw.
- Allows more uniform load dispersal - giving more metal-to-metal contact at the washer face.
- Prevents mismatching of fasteners - the parts that fit together well are the correct ones.
- Positives size identification - no confusion, washers are marked with the bolt-size and USS or SAE.



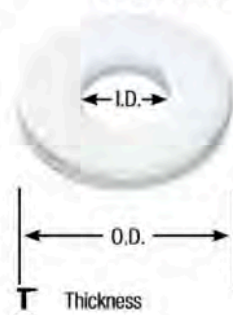
⚠ ** Items require the following warning as per the State of California.
WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov/

UPDATED 7/24

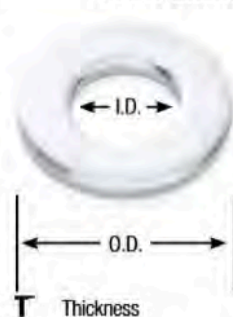
Grade 5 Applications

Bolt Size	No.	Qty. in Pkg.	No.	No.	Qty. in Pkg.	Inner Dia.	Outer Dia.	Nom. "T"	Est. Pieces/Lb.
#10 (3/16)	37-3503	100	37-35031			1/4	9/16	3/64	326
#12	37-3552	100	37-35521			9/32	5/8	1/16	222
1/4	37-3504	100	37-35041	37-35042	500	5/16	3/4	1/16	149
5/16	37-3505	100	37-35051	37-35052	500	3/8	7/8	5/64	90
3/8	37-3506	50	37-35061			7/16	1"	5/64	67
7/16	37-3507	50	37-35071			1/2	1-1/4	5/64	41
1/2	37-3508	50	37-35081			9/16	1-3/8	7/64	26
9/16	37-3509	25	37-35091			5/8	1-1/2	7/64	22
5/8	37-3510	25	37-35101			11/16	1-3/4	9/64	13
3/4	37-3512	25	37-35121			13/16	2"	5/32	9
7/8	37-3514	25	37-35141			15/16	2-1/4	11/64	6
1"	37-3516	25	37-35161			1-1/16	2-1/2	11/64	5
1-1/8	37-3518	10	37-35181			1-1/4	2-3/4	11/64	4
1-1/4	37-3520	10	37-35201			1-3/8	3"	11/64	4
1-3/8	37-3522	10				1-1/2	3-1/4	3/16	4
1-1/2	37-3524	10				1-5/8	3-1/2	3/16	2
1-3/4	37-3528	10				1-7/8	4"	3/16	2
2"	37-3532	1				2-1/8	4-1/2	3/16	1.5

USS Pattern



SAE Pattern



Bolt Size	No.	Qty. in Pkg.	No.	No.	Qty. in Pkg.	Inner Dia.	Outer Dia.	Nom. "T"	Est. Pieces/Lb.
#4	37-3600	100	37-36001			1/8	5/16	1/32	1650
#6 (1/8)	37-3601	100	37-36011			5/32	3/8	3/64	790
#8 (5/32)	37-3602	100	37-36021			3/16	7/16	3/64	585
#10 (3/16)	37-3603	100	37-36031			7/32	1/2	1/16	435
#12	37-3652	100	37-36521			1/4	9/16	3/64	326
1/4	37-3604	100	37-36041	37-36042	500	9/32	5/8	1/16	222
5/16	37-3605	100	37-36051	37-36052	500	11/32	11/16	1/16	192
3/8	37-3606	100	37-36061			13/32	13/16	1/16	140
7/16	37-3607	50	37-36071			15/32	15/16	1/16	105
1/2	37-3608	50	37-36081			17/32	1-1/16	3/32	55
9/16	37-3609	50	37-36091			19/32	1-3/16	3/32	43
5/8	37-3610	25	37-36101			21/32	1-5/16	3/32	36
3/4	37-3612	25	37-36121			13/16	1-1/2	9/64	21
7/8	37-3614	25	37-36141			15/16	1-3/4	9/64	16
1"	37-3616	25	37-36161			1-1/16	2"	9/64	12
1-1/8	37-3618	10	37-36181			1-3/16	2-1/4	9/64	8
1-1/4	37-3620	10	37-36201			1-5/16	2-1/2	5/32	6
1-1/2	37-3624	10	37-36241			1-9/16	3"	5/32	4

Bolt Size	No.	Inner Dia.	Outer Dia.
1/4	37-7504	5/16	47/64
5/16	37-7505	3/8	7/8
3/8	37-7506	7/16	1"
7/16	37-7507	1/2	1-1/4
1/2	37-7508	9/16	1-3/8
5/8	37-7510	11/16	1-3/4
3/4	37-7512	13/16	2"
7/8	37-7514	15/16	2-1/4
1"	37-7516	1-1/16	2-1/2

USS Pattern
Plain Finish



METRIC FASTENERS

WASHERS



Alloy Flat Washers

For Use With Class 10.9 Cap Screws



- Medium Carbon Steel
- Zinc Plated



Bolt Size (MM)	No.
6	45-3806
8	45-3808
10	45-3810
12	45-3812
14	45-3814
16	45-3816
18	45-3818
20	45-3820
22	45-3822
24	45-3824

Class 10 Alloy Flat Washers

Bolt Size (MM)	No.
6	45-3706
8	45-3708
10	45-3710
12	45-3712
14	45-3714
16	45-3716
18	45-3718
20	45-3720
22	45-3722
24	45-3724

Alloy Lock Washers



Class 10 Alloy Lock Washers

Bolt Size (MM)	No.
6	45-4806
8	45-4808
10	45-4810
12	45-4812
14	45-4814
16	45-4816
18	45-4818
20	45-4820
22	45-4822
24	45-4824

WASHERS

LOCK WASHERS



Alloy Steel Lock Washers

For Grade 8 Applications



Bolt Size	Width (W)	Thickness (T)	No.	No.	Qty.	No.	Qty.
1/4	.109	.062	37-4804	37-48041	200	37-48042	500
5/16	.125	.078	37-4805	37-48051	200	37-48052	500
3/8	.141	.094	37-4806	37-48061	200		
7/16	.156	.109	37-4807	37-48071	200		
1/2	.171	.125	37-4808	37-48081	200		
9/16	.188	.141	37-4809	37-48091	100		
5/8	.203	.156	37-4810	37-48101	50		
3/4	.234	.188	37-4812	37-48121	50		
7/8	.266	.219	37-4814	37-48141	50		
1"	.297	.250	37-4816	37-48161	50		
1-1/8	.328	.291	37-4818	37-48181	20		
1-1/4	.359	.312	37-4820	37-48201	20		
1-1/2	.422	.375	37-4824	37-48241	20		
2"	.487	.437	37-4832	37-48321	10		

Alloy Steel Plain Finish Lock Washers

For Grade 8 Applications



Bolt Size	No.	Width (W)	Thickness (T)
1/4	37-5804	.109	.062
5/16	37-5805	.125	.078
3/8	37-5806	.141	.094
7/16	37-5807	.156	.109
1/2	37-5808	.171	.125
9/16	37-5809	.188	.141
5/8	37-5810	.203	.156
3/4	37-5812	.234	.188
7/8	37-5814	.266	.219
1"	37-5816	.297	.250

Armor Coat™

Super Corrosion Resistant Lock Washers For Grade 8 Applications



USS Pattern

Bolt Size	No.	Width (W)	Thickness (T)
1/4	37-5904	.109	.062
5/16	37-5905	.125	.078
3/8	37-5906	.141	.094
7/16	37-5907	.156	.109
1/2	37-5908	.171	.125
5/8	37-5910	.203	.156
3/4	37-5912	.234	.188



WASHERS

LOCK WASHERS

Grade 5 Applications

- Carbon steel.
- Use with Grade 5 bolts.
- Zinc plated.



Bolt Size	Width (W)	Thickness (T)	No.	Qty.	No.	No.	Qty.
#4	.038	.025	37-4500	100			
#6	.047	.031	37-4501	100			
#8	.055	.040	37-4502	100			
#10 (3/16)	.062	.047	37-4503	100	37-45031		
#12	.070	.056	37-4552	100	37-45521		
1/4	.109	.062	37-4504	100	37-45041	37-45042	500
5/16	.125	.078	37-4505	100	37-45051	37-45052	500
3/8	.141	.094	37-4506	100	37-45061		
7/16	.156	.109	37-4507	100	37-45071		
1/2	.171	.125	37-4508	100	37-45081		
9/16	.188	.141	37-4509	50	37-45091		
5/8	.203	.156	37-4510	50	37-45101		
3/4	.234	.188	37-4512	50	37-45121		
7/8	.266	.219	37-4514	25	37-45141		
1"	.297	.250	37-4516	25	37-45161		
1-1/8	.328	.291	37-4518	10	37-45181		
1-1/4	.359	.312	37-4520	10	37-45201		
1-1/2	.422	.375	37-4524	10	37-45241		

Split Lock Washers



Bolt Size	Width	Thickness	No.
1/4	0.109	0.062	37-5504
5/16	0.125	0.078	37-5505
3/8	0.141	0.094	37-5506
7/16	0.156	0.109	37-5507
1/2	0.171	0.125	37-5508
9/16	0.188	0.141	37-5509
5/8	0.203	0.156	37-5510
3/4	0.234	0.188	37-5512
7/8	0.266	0.219	37-5514
1"	0.297	0.25	37-5516

Silicon Bronze Lock Washers



Bolt Size	Width	Thickness	No.
#4	.038	.025	37-3450
#6	.047	.031	37-3451
#8	.055	.040	37-3452
#10	.062	.047	37-3453
1/4	.109	.062	37-3454
5/16	.125	.078	37-3455
3/8	.141	.094	37-3456
1/2	.171	.125	37-3458

METRIC FASTENERS

WASHERS



Flat Washers



- Steel.
- Zinc plated.

Dimensions In MM

Bolt Size (MM)	No.	I.D.	O.D.	Height
4	45-3504	4.3	9	.8
5	45-3505	5.3	10	1
6	45-3506	6.4	12.5	1.6
7	45-3507	7.4	14	1.6
8	45-3508	8.4	17	1.6
10	45-3510	10.5	21	2.0
12	45-3512	13	24	2.5
14	45-3514	15	28	2.5
16	45-3516	17	30	3
18	45-3518	19	34	3
20	45-3520	21	37	3
24	45-3524	25	44	4

Lock Washers



- Spring steel.
- Zinc plated.

Dimensions In MM

Bolt Size (MM)	No.	Qty.	I.D.	O.D.	Height
4	45-4504		4.1	7.6	.9
5	45-4505		5.1	9.2	1.2
6	45-4506		6.1	11.8	1.6
7	45-4507		7.1	12.8	1.6
8	45-4508		8.1	14.8	2
10	45-4510		10.2	18.1	2.2
12	45-4512		12.2	21.1	2.5
14	45-4514		14.2	24.1	3
16	45-4516		16.2	27.4	3.5
18	45-4518		18.2	29.4	3.5
20	45-4520		20.2	33.6	4
24	45-4524		24.5	40	5



Fender Washers



- Zinc plated.

Bolt Size (MM)	No.	I.D.	O.D.
5	45-3101	5.5MM	20MM
	45-3102	5.5MM	25MM
6	45-3105	7MM	25MM
	45-3106	7MM	32MM
8	45-3107	7MM	38MM
	45-3108	9MM	32MM
10	45-3109	9MM	38MM
	45-3111	10.5MM	32MM
12	45-3112	10.5MM	38MM
	45-3114	10.5MM	45MM
12	45-3115	13.0MM	38MM
	45-3116	13.0MM	50MM

Heavy-Duty Fender Washers



- Resists dishing and bending.
- 1/8" thick.
- Zinc plated.

K-M No.	Bolt Size	I.D.	O.D.
10-120	1/4	9/32	1"
10-121	1/4	9/32	1-1/4
10-122	1/4	9/32	1-1/2
10-123	5/16	11/32	1-1/4
10-124	5/16	11/32	1-1/2
10-125	3/8	13/32	1-1/4
10-126	3/8	13/32	1-1/2
10-127	3/8	13/32	1-3/4
10-128	1/2	17/32	1-1/2
10-129	1/2	17/32	2"
10-318	1/2	17/32	2-1/2

Standard Fender Washers



- Zinc plated.

K-M No.	Bolt Size	I.D.	O.D.
10-315	3/16 (#10)	7/32	1/2
10-593	3/16 (#10)	7/32	3/4
10-312	3/16 (#10)	7/32	1"
10-313	3/16 (#10)	7/32	1-1/4
10-316	1/4	9/32	5/8
10-319	1/4	9/32	1"
10-325	1/4	9/32	1-1/4
10-320	1/4	9/32	1-1/2
10-563	1/4	9/32	2"
10-326	5/16	11/32	1-1/4
10-324	5/16	11/32	1-1/2
10-564	5/16	21/64	2"
10-322	3/8	13/32	1-1/4
10-323	3/8	13/32	1-1/2
10-327	3/8	27/64	1-5/8
10-594	3/8	13/32	1-3/4
10-565	3/8	25/64	2"
10-317	1/2	17/32	1-1/2
10-328	1/2	17/32	2"

WASHERS

MISCELLANEOUS WASHERS

Rubber Sealing Washers



No.	Size
37-4412	12 x 5/8
37-4414	14 x 5/8



Bevel Washers

No.	Bolt Size
37-4904	1/4
37-4905	5/16
37-4906	3/8
37-4908	1/2
37-4910	5/8
37-4912	3/4
37-4916	1"



Copper Sealing Washers

No.	I.D. (MM)	O.D. (MM)
37-4310	8	12
37-4311	8	14
37-4312	10	14
37-4313	10	16
37-4314	12	16
37-4315	12	18
37-4316	14	18
37-4317	14	20
37-4318	14	22

No.	I.D. (MM)	O.D. (MM)
37-4319	16	20
37-4320	16	22
37-4321	18	24
37-4322	20	26
37-4323	22	29
37-4324	24	30
37-4325	26	32
37-4326	28	34



Copper Washers

No.	Bolt Size	I.D.	O.D.
37-4304	1/4	17/64	7/16
37-4305	5/16	21/64	1/2
37-4306	3/8	25/64	9/16
*60-781	7/16	7/16	13/16
37-4308	1/2	17/32	11/16

* 1/16" Thick.



- FLANGE DESIGN - Allows for variances in hole sizes for more efficient assemblies.
- SPECIFICATIONS:
SAE J429 Grade 8
Minimum tensile strength 150,000 P.S.I.
Phosphate and oil finish
- MADE IN THE U.S.A.

Premium Made-In-U.S.A. Flange Bolts Grade 8 Coarse Thread (USS)

DIA THREADS	5/16	3/8	1/2	5/8
LENGTH	18	16	13	11
3/4	32-30506	32-30606	-	-
1"	32-30508	32-30608	32-30808	-
1-1/4	32-30510	32-30610	32-30810	32-31010
1-1/2	32-30512	32-30612	32-30812	32-31012
1-3/4	-	32-30614	32-30814	32-31014
2"	-	32-30616	32-30816	32-31016
2-1/4	-	32-30618	32-30818	32-31018
2-1/2	-	32-30620	32-30820	32-31020
2-3/4	-	-	32-30822	32-31022
3"	-	-	32-30824	32-31024
3-1/4	-	-	32-30826	-
3-1/2	-	-	32-30828	32-31028
4"	-	-	32-30832	31-31032
4-1/2	-	-	32-30836	32-31036
5"	-	-	32-30840	32-31040



Fine Thread (SAE)

DIA THREADS	1/2	5/8	3/4
LENGTH	20	18	16
1	32-3210	-	-
1-1/4	32-3211	-	-
1-1/2	32-3212	32-3229	-
1-3/4	32-3213	32-3230	-
2"	32-3214	32-3231	32-3248
2-1/4	-	32-3232	-
2-1/2	32-3216	32-3233	32-3250
2-3/4	-	32-3234	-
3"	32-3218	32-3235	32-3255
3-1/2	-	32-3237	-

- Medium carbon martensite steel - 150,000 P.S.I..
- Eliminates the need for washer.
- Meets SAE J429 Grade 8.
- Phosphate & oil finish.

Coarse Thread (USS)

DIA THREADS	3/8	1/2	5/8	3/4
LENGTH	16	13	11	10
1"	32-3104	32-3110	-	-
1-1/4	32-3105	32-3111	32-3128	-
1-1/2	32-3106	32-3112	32-3129	-
1-3/4	-	32-3113	32-3130	-
2"	32-3107	32-3114	32-3131	32-3148
2-1/4	-	32-3115	32-3132	32-3149
2-1/2	32-3108	32-3116	32-3133	32-3150
2-3/4	-	32-3117	32-3134	32-3151
3"	32-3109	32-3118	32-3135	32-3155
3-1/4	-	-	32-3136	-
3-1/2	-	32-3120	32-3137	32-3152
3-3/4	-	32-3121	32-3138	-
4"	-	32-3122	32-3139	32-3153
4-1/2	-	32-3123	32-3140	32-3154
5"	-	32-3124	32-3141	-
5-1/2	-	-	32-3142	-
6"	-	-	32-3143	-
Qty. 15				



USS		SAE	
Size	K-M No.	Size	No.
3/8-16	32-3100	3/8-24	32-3200
1/2-13	32-3101	1/2-20	32-3201
5/8-11	32-3102	5/8-18	32-3202
3/4-10	32-3103	3/4-16	32-3203*

*Non-domestic

Flange Lock Nuts

- Self-locking.
- Resists backing off.
- Eliminates the need for washer.
- Phosphate & oil finish.



METRIC FASTENERS

SOCKET SCREWS



Socket Head Cap Screw

- Alloy Steel
- Meets ASTM A574M and ASME B18.3.1M specifications
- Minimum tensile strength 176,946 P.S.I. (1,220 MPa)



DIA. THREADS	M4	M5	M6	M8	M10	M12	M16	M20	M24
LENGTH	.7	.8	1.0	1.25	1.50	1.75	2.0	2.5	3.0
6	46-20406								
8	46-20408	46-20508	46-20608						
10	46-20410	46-20510	46-20610						
12	46-20412	46-20512	46-20612	46-20812					
16	46-20416	46-20516	46-20616	46-20816					
20	46-20420	46-20520	46-20620	46-20820	46-21020				
25	46-20425	46-20525	46-20625	46-20825	46-21025	46-21225			
30	46-20430	46-20530	46-20630	46-20830	46-21030	46-21230	46-21630		
35	46-20435	46-20535	46-20635	46-20835	46-21035	46-21235	46-21635		
40	46-20440	46-20540	46-20640	46-20840	46-21040	46-21240	46-21640		
45	46-20445	46-20545	46-20645	46-20845	46-21045	46-21245	46-21645	46-22045	
50	46-20450	46-20550	46-20650	46-20850	46-21050	46-21250	46-21650	46-22050	46-22450
55		46-20555	46-20655	46-20855	46-21055	46-21255	46-21655	46-22055	
60		46-20560	46-20660	46-20860	46-21060	46-21260	46-21660	46-22060	46-22460
65			46-20665	46-20865	46-21065	46-21265	46-21665	46-22065	
70			46-20670	46-20870	46-21070	46-21270	46-21670	46-22070	46-22470
75			46-20675	46-20875	46-21075	46-21275	46-21675	46-22075	
80			46-20680	46-20880	46-21080	46-21280	46-21680	46-22080	46-22480
90					46-21090		46-21690	46-22090	46-22490
100							46-21691	46-22091	46-22491
110							46-21692	46-22092	46-22492
120							46-21693	46-22093	46-22493
130								46-22094	46-22494
140									46-22495
150									46-22496
160									46-22497
180									46-22498
200									46-22500
KEY TO USE	3MM	4MM	5MM	6MM	8MM	10MM	14MM	17MM	19MM

BOLTS

CARRIAGE BOLTS





Grade 5

Coarse Thread (USS)



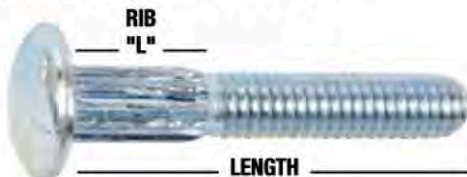
- 1035 Steel - heat treated.
- Conforms to ANSI B18.5
- Marked with 3 radial lines to identify as Grade 5.
- Fully threaded to shoulder.
- Zinc plated.

Dia.	Length	No.	Dia.	Length	No.	Qty.	Dia.	Length	No.
1/4-20	3/4	32-5406	7/16-14	1"	32-5708	5/8-11	1-1/2	1-1/2	32-6012
	1"	32-5408		1-1/4	32-5710			1-3/4	32-6014
	1-1/4	32-5410		1-1/2	32-5712			2"	32-6016
	1-1/2	32-5412		1-3/4	32-5714			2-1/4	32-6018
	1-3/4	32-5414		2"	32-5716			2-1/2	32-6020
	2"	32-5416		2-1/4	32-5718			3"	32-6024
5/16-18	2-1/2	32-5420	1/2-13	2-1/2	32-5720	3/4-10	3-1/2	3-1/2	32-6028
	3/4	32-5506		3"	32-5724			4"	32-6032
	1"	32-5508		3-1/2	32-5728			4-1/2	32-6036
	1-1/4	32-5510		4"	32-5732			5"	32-6040
	1-1/2	32-5512		1"	32-5808			2-1/2	32-6220
	1-3/4	32-5514		1-1/4	32-5810			3"	32-6224
3/8-16	2"	32-5516	1/2-13	1-1/2	32-5812	3/4-10	4"	4"	32-6232
	2-1/2	32-5520		1-3/4	32-5814			5"	32-6240
	3"	32-5524		2"	32-5816			6"	32-6248
	3/4	32-5606		2-1/4	32-5818				
	1"	32-5608		2-1/2	32-5820				
	1-1/4	32-5610		2-3/4	32-5822*				
3/8-16	1-1/2	32-5612	1/2-13	3"	32-5824	3/4-10	4"		
	1-3/4	32-5614		3-1/2	32-5828				
	2"	32-5616		4"	32-5832				
	2-1/4	32-5618		4-1/2	32-5836				
	2-1/2	32-5620		5"	32-5840				
	2-3/4	32-5622							
3/8-16	3"	32-5624	1/2-13			3/4-10	4"		
	3-1/2	32-5628							
	4"	32-5632							
	4-1/2	32-5636							





Grade 5 Rib Neck



- Ribbed neck spline locks into holes to prevent turning.
- Round dome head prevents catching on other materials.
- Flat under-head bearing surface assures even clamp load.
- Grade 5 construction - zinc plated.

Coarse Thread (USS) Without Nuts

Dia.	Length	No.	Rib Length	Dia.	Length	No.	Rib Length
1/4-20	1"	32-6408	.407	3/8-16	1"	32-6608	.407
	1-1/4	32-6410	.594		1-1/4	32-6610	.594
	1-1/2	32-6412	.594		1-1/2	32-6612	.594
	2"	32-6416	.594		2"	32-6616	.594
5/16-18	1"	32-6508	.407	3/8-16	2-1/2	32-6620	.594
	1-1/2	32-6512	.594				
	2"	32-6516	.594				

Step Bolts Coarse Thread (USS)

- Low profile head.
- Square shoulders.
- Conforms to ANSI B18.5.
- Zinc plated finish.



Dia.	Length	No.	Dia.	Length	No.	Dia.	Length	No.
1/4-20	3/4	32-2120	5/16-18	1"	32-2128	3/8-16	1-1/2	32-2135
	1"	32-2121		1-1/2	32-2130		2"	32-2136
	1-1/4	32-2122		2"	32-2131		3"	32-2138
	1-1/2	32-2123						
	2"	32-2124						

BOLTS

ELEVATOR BOLTS



Coarse Thread (USS) Without Nuts



- Fully threaded to square shoulder.
- Conforms to ANSI B18.5.
- Black with oil dipped finish.



Dia.	Length	No.	Dia.	Length	No.
1/4-20	1"	32-2140	5/16-18	1-1/2	32-2146
	1-1/4	32-2141		2"	32-2147
	1-1/2	32-2142		1"	32-2149
	2"	32-2144	3/8-16	1-1/2	32-2150
	2-1/2	32-2144A		2"	32-2151
	3"	32-2144B			



- Fully threaded to square shoulder.
- Conforms to ANSI B18.5.
- Zinc plated finish.



Dia.	Length	No.	Dia.	Length	No.
1/4-20	3/4	32-2200	5/16-18	1"	32-2207
	1"	32-2201		1-1/4	32-2230
	1-1/4	32-2202		1-1/2	32-2208
	1-1/2	32-2203		2"	32-2209
	2"	32-2204		2-1/2	32-2214
	2-1/2	32-2205	3/8-16	3"	32-2215
	3"	32-2206		1"	32-2210
				1-1/2	32-2211
				1-3/4	32-2213
				2"	32-2212

Anti-Rotational



- Zinc-plated.
- 3 dimples beneath the head prevent bolts from turning during tightening.
- Provides a more secure assembly.

Dia.	Length	No.
1/4-20	1"	32-2216
	1-1/4	32-2217
5/16-18	1-1/4	32-2218
	1-1/2	32-2219



Dia.	Length	No.	Dia.	Length	No.	Dia.	Length	No.
1/4-20 (31/32" Head)	3/4	32-2220	5/16-18 (1-3/16" Head)	1"	32-2231	3/8-16 (1-5/16" Head)	1-1/4	32-2241
	1"	32-2221		1-1/4	32-2232		1-1/2	32-2242
	1-1/4	32-2222		1-1/2	32-2233		1-3/4	32-2243
	1-1/2	32-2223		2"	32-2235		2"	32-2244
	1-3/4	32-2224		2-1/4	32-2236			
	2"	32-2225		2-1/2	32-2237			
	2-1/4	32-2226						
	2-1/2	32-2227						

SOCKET SCREWS

SOCKET HEAD CAP SCREWS



Flat Head - Plated



- Zinc Plated.
- Alloy steel - Rockwell 36-43.
- Conforms to ANSI B18.3
- Plated to ASTM B633/ASTM F1941.
- Provides increased corrosion resistance.
- Superior appearance for motorcycle, automotive and truck applications.
- Tensile Strength: 145,000 P.S.I. up through 1/2", 135,000 P.S.I. 5/8" and larger.

Coarse Thread (USS)

DIA. THREADS	#6	#8	#10	1/4	1/2
LENGTH	32	32	24	20	13
1/4	30-55113				
3/8	30-55114				
1/2	30-55115	30-55121	30-55127	30-55131	
5/8			30-55128		
3/4	30-55116	30-55122	30-55129	30-55132	30-55154
1"		30-55123	30-55130	30-55133	30-55155
1-1/4				30-55134	30-55156
1-1/2				30-55135	30-55157
1-3/4					30-55158
2"					30-55159
2-1/4					
2-1/2					30-55161
3"					30-55162
4"					
KEY TO USE	5/64	3/32	1/8	5/32	5/16

Fine Thread (SAE)

DIA. THREADS	#10
LENGTH	32
1/4	
3/8	
1/2	31-55127
5/8	31-55128
3/4	31-55129
7/8	
1"	31-55130
1-1/4	
1-1/2	
KEY TO USE	5/32

Qty. 3



SOCKET SCREWS

SOCKET HEAD CAP SCREWS

Flat Head



Coarse Thread (USS)

DIA. THREADS	#4	#5	#6	#8	#10	1/4	5/16	3/8	7/16	1/2	5/8	3/4
LENGTH	40	40	32	32	24	20	18	16	14	13	11	10
1/4	30-5105	30-5100	30-5113	30-5119	30-5125							
3/8	30-5106	30-5101	30-5114	30-5120	30-5126	30-5207	30-5212					
1/2	30-5107	30-5102	30-5115	30-5121	30-5127	30-5131	30-5138	30-5217				
5/8	30-5108	30-5200	30-5201	30-5202	30-5128	30-5208	30-5213	30-5218				
3/4	30-5109	30-5103	30-5116	30-5122	30-5129	30-5132	30-5139	30-5145	30-5706	30-5154		
1"		30-5104	30-5117	30-5123	30-5130	30-5133	30-5140	30-5146	30-5708	30-5155	30-5223	
1-1/4				30-5176	30-5203	30-5134	30-5141	30-5147	30-5710	30-5156	30-5224	30-5226
1-1/2				30-5177	30-5204	30-5135	30-5142	30-5148	30-5712	30-5157	30-5165	30-5170
1-3/4					30-5205	30-5136	30-5143	30-5149	30-5714	30-5158	30-5166	
2"					30-5206	30-5137	30-5144	30-5150	30-5716	30-5159	30-5167	30-5171
2-1/4						30-5209	30-5214	30-5151	30-5718	30-5160		
2-1/2					30-5221	30-5210	30-5215	30-5152	30-5720	30-5161	30-5168	30-5172
3"						30-5211	30-5216	30-5153	30-5724	30-5162	30-5169	30-5173
4"												30-5174
KEY TO USE	1/16	5/64	5/64	3/32	1/8	5/32	3/16	7/32	1/4	5/16	3/8	1/2

Fine Thread (SAE)

DIA. THREADS	#10	1/4	5/16	3/8	1/2
LENGTH	32	28	24	24	20
1/4	31-5125				
3/8	31-5126	31-5160			
1/2	31-5127	31-5131	31-5138		
5/8	31-5128	31-5161	31-5163	31-5144	
3/4	31-5129	31-5132	31-5139	31-5145	31-5154
1"	31-5130	31-5133	31-5140	31-5146	31-5155
1-1/4	31-5203	31-5134	31-5141	31-5147	31-5156
1-1/2	31-5204	31-5135	31-5142	31-5148	31-5157
1-3/4	31-5205				
2"	31-5206	31-5162	31-5164	31-5150	31-5159
KEY TO USE	1/8	5/32	3/16	7/32	5/16

Fasteners

SOCKET SCREWS

SOCKET SET SCREWS



Cup Point

Coarse Thread (USS)



- Cup point.
- Alloy steel - Rockwell 45-53.
- Conforms to ANSI B18.3.
- Black with oil dipped finish.

DIA. THREADS	#4	#6	#8	#10	1/4	5/16	3/8	7/16	1/2	5/8	3/4
LENGTH	40	32	32	24	20	18	16	14	13	11	10
1/16											
3/32											
1/8	30-4669										
3/16	30-4670	30-4701	30-4708	30-4715	30-4731						
1/4	30-4671	30-4702	30-4709	30-4716	30-4732	30-4749	30-4766				
5/16	30-4672		30-4710	30-4717	30-4733	30-4750	30-4760				
3/8	30-4673	30-4704	30-4711	30-4718	30-4734	30-4751	30-4767	30-4782	30-4789		
7/16					30-4693	30-4655	30-4657				
1/2	30-4674	30-4705	30-4712	30-4719	30-4735	30-4752	30-4768	30-4784	30-4790	30-4797	
5/8		30-4706	30-4713	30-4720	30-4736	30-4753	30-4769	30-4775	30-4791	30-4798	
3/4		30-4707	30-4714	30-4721	30-4737	30-4754	30-4770	30-4785	30-4792	30-4799	30-4804
1"		30-4650	30-4651	30-4722	30-4738	30-4755	30-4771	30-4786	30-4793	30-4800	30-4805
1-1/4				30-4652	30-4739	30-4756	30-4772		30-4794	30-4801	30-4808
1-1/2				30-4653	30-4740	30-4757	30-4773	30-4788	30-4795	30-4802	30-4806
1-3/4					30-4742						
2"				30-4654	30-4741	30-4656	30-4774		30-4796	30-4803	30-4807
KEY TO USE	.050	1/16	5/64	3/32	1/8	5/32	3/16	7/32	1/4	3/8	3/8

Qty. 5

Fine Thread (SAE)

DIA. THREADS	10	1/4	5/16	3/8	7/16	1/2
LENGTH	32	28	24	24	20	20
3/16	31-4723	31-4740				
1/4	31-4724	31-4741	31-4758	31-4774		
5/16	31-4725	31-4742	31-4759			
3/8	31-4726	31-4743	31-4760	31-4775	31-4790	
7/16					31-4791	
1/2	31-4727	31-4744	31-4761	31-4776	31-4792	31-4793
5/8	31-4728	31-4745	31-4762	31-4777		31-4794
3/4	31-4729	31-4746	31-4763	31-4778		31-4795
1"	31-4730	31-4747	31-4764	31-4779		31-4796
1-1/4			31-4765	31-4780		
KEY TO USE	3/32	1/8	5/32	3/16	7/32	1/4



SOCKET SCREWS

SOCKET HEAD CAP SCREWS

Knurled Point

- Knurled point - resists vibration.
- Alloy steel.
- Conforms to ANSI B18.3.
- Black with oil dipped finish.



Coarse Thread (USS)

DIA. THREADS	#6	#8	#10	1/4	5/16	3/8	1/2
LENGTH	32	32	24	20	18	16	13
1/4	30-4810	30-4823	30-4837	30-4851			
5/16				30-4852	30-4868		
3/8		30-4825	30-4839	30-4853	30-4869	30-4884	
1/2		30-4826	30-4840	30-4854	30-4870	30-4885	30-4890
3/4				30-4855	30-4871	30-4886	30-4891
1"				30-4856	30-4872	30-4887	30-4892
1-1/4				30-4857		30-4888	30-4893

Qty. 5

Fine Thread (SAE)

DIA. THREADS	#10	1/4	5/16	3/8
LENGTH	32	28	24	24
1/4	30-4895	30-4905		
5/16	30-4896	30-4907	30-4910	
3/8	30-4897	30-4906	30-4911	30-4915
1/2	30-4898	30-4908	30-4912	30-4916
3/4	30-4899		30-4913	

Half Dog Point

- Half dog point.
- Alloy steel.
- Conforms to ANSI B18.3.
- Black with oil dipped finish.



DIA. THREADS	#6	#8	#10	1/4	5/16	3/8	1/2
LENGTH	32	32	24	20	18	16	13
3/16							
1/4		30-2202	30-2302	30-2402			
5/16				30-2402A	30-2502A		
3/8	30-2103			30-2403	30-2503	30-2603	
1/2		30-2204	30-2304	30-2404	30-2504	30-2604	30-2804
5/8				30-2405			
3/4				30-2406	30-2506	30-2606	30-2806
1"				30-2408		30-2608	30-2808
1-1/4						30-2610	



CIRCUIT PROTECTION

FUSES

ATO Fuses

- Original ATO blade style fuse replaces both ATO and ATC styles.
- Clear, color coded housings give fast identification of blown elements.
- Available in standard packaging and economical MINI-BULK packaging.

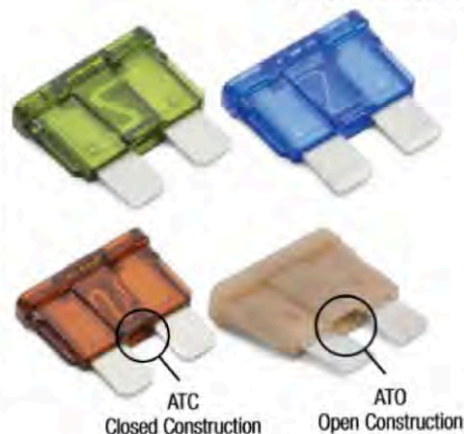
Amp	Color	1 bag of 10	2 boxes of 5 each
1	Black	28-301	-
2	Gray	28-322	-
3	Violet	28-303	28-2303
4	Pink	28-304	28-2304
5	Tan	28-305	28-2305
7.5	Brown	28-307	28-2307
10	Red	28-310	28-2310
15	Blue	28-315	28-2315
20	Yellow	28-320	28-2320
25	Natural	28-325	28-2325
30	Green	28-330	28-2330
35	Green	28-585	-
40	Orange	28-324	28-2324



ATC Fuses

- ATC STYLE FUSE - Blade style fuse interchanges with ATO style.
- CLOSED HOUSING DESIGN - Fuse elements are encased in closed housings for weather and moisture resistance.
- VEHICLE AND MARINE USE - Ideal for truck, automotive, motorcycle, RV, watercraft and more.
- COLOR CODED - Fuse housings are color coded by amperage ratings to allow the quick selection of the correct fuse.
- CLEAR FUSE HOUSINGS - Transparent housings allow fast and easy visual identification of blown elements.

Amp	1 Bag of 10	Color
3	28-3003	Violet
4	28-3004	Pink
5	28-3005	Tan
7.5	28-3007	Brown
10	28-3010	Red
15	28-3015	Blue
20	28-3020	Yellow
25	28-3025	Natural
30	28-3030	Green
40	28-3040	Orange





CIRCUIT PROTECTION

FUSES

- Replaces the commonly used fusible wire or fusible link.
- Direct replacement for original equipment Maxi® Fuse.
- Contains a completely enclosed fuse link.
- Translucent, color coded housings give fast identification of blown elements.
- Minimum Order 1 Maxi® Fuse.

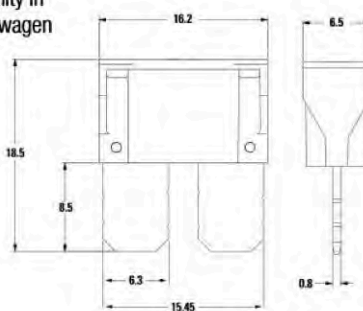
Maxi® Fuse Kit



28-388 Maxi® Fuse Kit

Contains: 1 - 28-380 (20 Amp), 2 - 28-381 (30 Amp), 3 - 28-382 (40 Amp), 1 - 28-383 (50 Amp), 3 - 28-384 (60 Amp), Packaged in Plastic Bag

- **COMPACT & HIGH AMPERAGE** - Smaller than the traditional Maxi® Fuse, which allows more circuits in a smaller fuse box.
- **MEETS OEM SPECIFICATIONS** - Provides superior reliability in OEM applications. For use on 2020 MQB Platform Volkswagen automobiles.
- **EXTENDED LIFE** - Silver plated zinc terminals help prevent corrosion to provide long service life.
- **COLOR CODED** - Provides quick and easy amperage identification.
- **SPECIFICATIONS:**
Voltage Rating: 32VDC
Interrupting Rating: 1000A @ 32VDC
Temperature Rating: -40°F to 257°F
Terminal Material: Silver Plated Zinc
Housing Material: PA66



Note: All dimensions in mm.

Maxi® Fuses



Maxi+® Fuses



AMPS	No.	Color
20	28-1990	Yellow
25	28-1991	White
30	28-1992	Light Green
35	28-1993	Green
40	28-1994	Orange
50	28-1995	Red
60	28-1996	Blue

- **HIGH AMPERAGE FUSES** - Designed to replace MAXI® and cartridge-style fuses. Patented technology provides increased time delay and low voltage drop.
- **UNIQUE LOW-PROFILE DESIGN** [K-M No. 28-2343 thru 28-2347] - Low-profile JCASE™ fuses have a lowered profile with an overall height reduction that allows for more space, and a shorter male blade terminal, in newer fuse box designs.
- **SAFE & SECURE** - The double spring-beam box terminal and unique secondary locking feature holds fuse securely in place.
- **FUSE SPECIFICATIONS** [K-M No. 28-2335 thru 28-2339] - Voltage Rating: 32 Volt AC/DC, Slo-Blo
Interchanges with Bussman FMX OEM on many domestic and Japanese models.
- **FUSE SPECIFICATIONS** [K-M No. 28-2343 thru 28-2347] - Voltage Rating: 58 Volt DC
Interrupting Rating: 1000A @ 58 VDC
Operating Temperature: -40°F to 257°F

JCase Low Profile Fuses



AMPS	Color Code	No
20A	Blue	28-2343
25A	White	28-2348
30A	Pink	28-2344
40A	Green	28-2345
50A	Red	28-2346
60A	Yellow	28-2347

JCase High Amp Fuses (Female Maxi Fuses)



AMPS	Color Code	No
20A	Blue	28-2335
30A	Pink	28-2336
40A	Green	28-2337
50A	Red	28-2338
60A	Yellow	28-2339

JCASE™ Fuse Kit

CIRCUIT PROTECTION

FUSES



MCase™ Fuses



- SUB-MINIATURE DESIGN - More compact than JCASE™ fuses. Allows more circuits in a smaller fuse box.
- SLOTTED BODY - [K-M No. 28-2601 thru 28-2605] The slotted body fuses can mate with larger male terminals or directly onto a busbar. Used in 2018+ Ford® trucks and other OEM applications
- MEETS OEM SPECIFICATIONS - High performance fuses meet exact specifications for superior reliability.
- SPECIFICATIONS:
Voltage Rating.....32VDC
Interrupting Rating.....1000A @ 32VDC
Operating Temperature Range.....-40°F to 257°F

Amperage	MCase™	MCase™ Slotted	Description
15	28-2401	28-2601	GRAY
20	28-2402	28-2602	BLUE
25	28-2403	28-2603	WHITE
30	28-2404	28-2604	PINK
40	28-2405	28-2605	GREEN

FMM Fuses



Amp	1 Bag of 5	Color
15	28-2501	GRAY
20	28-2502	BLUE
25	28-2503	WHITE
30	28-2504	PINK
40	28-2505	GREEN

- SPACE-SAVING DESIGN - Small female MAXI® cartridge fuses save space in vehicle fuse boxes. Meets the demand for smaller high current circuit protection.
- MEETS OEM SPECIFICATIONS - Provides superior reliability in OEM applications.
- SPECIFICATIONS:
Voltage Rating: 32V DC
Dimensions (mm): 10.7 wide x 9.7 deep x 15 high

CIRCUIT PROTECTION

FUSES



ATM Mini-Fuses



Amp	Color	1 bag of 10	2 boxes of 5 each
2	Gray	28-220	28-2220
3	Violet	28-221	28-2221
4	Pink	28-222	28-2222
5	Tan	28-223	28-2223
7.5	Brown	28-224	28-2224
10	Red	28-225	28-2225
15	Blue	28-226	28-2226
20	Yellow	28-227	28-2227
25	Natural	28-228	28-2228
30	Green	28-229	28-2229

- Provides the sophisticated protection required on late model vehicles.
- Allows installing more fuses in the same amount of space to protect the additional circuits, circuitry and on-board electronics found in new vehicles.
- Silver plated terminals provide superior electrical contact.
- Transparent, color coded housings give fast identification of blown elements.

Low Profile Mini Fuses



Amp	Color	No.
2	Gray	28-3202
3	Violet	28-3203
4	Pink	28-3204
5	Tan	28-3205
7.5	Brown	28-3207
10	Red	28-3210
15	Blue	28-3215
20	Yellow	28-3220
25	Natural	28-3225
30	Green	28-3230

- NEW DESIGN AUTOMOTIVE FUSES - Meets the demand for an ever increasing number of isolated, fused circuits in today's sophisticated automotive circuitry and on-board electronics.
- ULTRA-COMPACT FUSE DESIGN - Half the size of the original Mini Fuse to allow more fuses in each vehicle to handle all the circuit demands.
- FULL PERFORMANCE & CAPABILITY - Low profile mini fuses have the same fast acting performance characteristics as the standard ATO and ATM Mini Fuses. Rated up to 32VDC.
- 2006 APPLICATIONS - Late model GM Trucks & SUV's, Honda Odyssey, Toyota/Scion, Nissan/Infiniti vehicles and more.



CIRCUIT PROTECTION

FUSES



- SUB-MINIATURE DESIGN - 5.0mm center line spacing allows for a 38% reduction in spacing per fuse compared to ATM mini fuses. Allows more circuits in a smaller footprint.
- MEETS OEM SPECIFICATIONS - High performance fuses meet exacting specifications for superior reliability.
- OEM APPLICATIONS - 2013 and newer domestic and imported vehicles.
- SPECIFICATIONS: - Voltage Rating: 32 VDC
Interrupting Ratings: 1000A @ 32 VDC
Operating Temperature Range: -40°F to +257°F
Terminals: Silver plated zinc alloy

Amp	1 Bag of 10	Color
5	28-2905	Tan
7.5	28-2907	Brown
10	28-2910	Red
15	28-2915	Blue
20	28-2920	Yellow
25	28-2925	Natural
30	28-2930	Green

Micro 2 Fuses



- SUB-MINIATURE DESIGN: 38% more compact than ATM mini fuses. Allows more circuits in a smaller fuse box.
- DUAL CIRCUIT PROTECTION - One fuse can protect 2 separate circuits to further reduce fuse box size.
- MEETS OEM SPECIFICATIONS - High performance fuses meet exacting specifications for superior reliability.
- APPLICATIONS - 2014 and newer domestic and imported vehicles.
- SPECIFICATIONS: - Voltage Rating: 32 VDC
Interrupting Ratings: 1000A @ 32 VDC
Operating Temperature Range: -40°F to +257°F
Terminals: Silver plated zinc alloy

Amp	1 Bag of 10	Color
5	28-3905	Tan
7.5	28-3907	Brown
10	28-3910	Red
15	28-3915	Blue

Micro 3 Fuses



- RELIABLE PROTECTION - These rugged and reliable fuses offer high amperage protection in a compact size (7/8" x 3-1/6") while protecting heavy gauge wire and other electrical components from thermal damage caused by current overloads.
- FAST & EASY INSTALLATION - The fuse's bolt down design allows for easy installation and replacement.
- ECONOMICAL - ANN and ANL limiter fuses are an affordable alternative to Class T fuses in a non-code installation.
- FUSE SPECIFICATIONS - **ANN Fuses:** Rated up to 80 volts DC and 125 volts AC with a maximum arc interrupt rating of 2,700 amps DC and 6,000 amps AC. Very fast acting for high speed responsiveness to short-circuit currents.
ANL Fuses: Rated up to 80 volts DC and 32 volts AC with a maximum arc interrupt rating of 2,700 amps DC and 6,000 amps AC. Slow blow to accommodate high currents battery protection; designed to open non-destructively to protect the battery bank, components, and wiring.
- APPLICATIONS - Applications include protection for charging systems in battery operated forklifts, truck winches, boat anchor winches, pallet jacks and much more.
- UL RECOGNIZED

ANN & ANL Fuses



ANN	ANL	Amperage
28-1350	28-1338	60A
28-1351	28-1339	80A
28-1352	28-1340	100A
28-1353		125A
28-1354	28-1341	150A
28-1355	28-1342	175A
28-1356	28-1343	200A
28-1357	28-1344	250A
28-1358	28-1345	300A
28-1359	28-1346	325A
	28-1347	350A
28-1394	28-1348	400A
28-1395	28-1349	500A
28-1396		600A



WIRE MANAGEMENT

CABLE TIES

White & Black Nylon Cable Ties



- Quick pick-up - ties do not lie flat.
- Self-orienting for fast insertion.
- Grip-tips aid pulling ties.

- **NYLON 6/6 CONSTRUCTION** - Gives lightweight, high strength and has a wide temperature range.
- **ONE PIECE MOLDED DESIGN** - Provides maximum durability.
- **BENT-TIP TAPERED TAIL** - Gives easy insertion and fast bundling.
- **UNIFORM SERRATIONS** - Provide easy "pull-through" to the wire bundle.
- **SMOOTH ROUNDED SIDES** - Allow ties to slip easily around and under cables and harnesses.
- **SPECIFICATIONS:** U.L. recognized
Operating Temperature Range: -40° to 185°F
- **DURABLE CONSTRUCTION** - Available in natural white and U.V. stabilized black for long life exposed to weather and sunlight.
- **MADE IN THE U.S.A.**

White	Black	Wire Bundle Range	Min. Tensile Strength (Lbs.)	Approx. Width	Approx. Length
-	26-678J				
26-670	26-678	1/16 to 3/4	18	3/32	4"
26-6701	26-6781				
26-671	26-756				
26-6711	-	1/16 to 1-1/4	18	3/32	5-3/4
26-763	26-764	1/16 to 2"	18	3/32	8"
-	26-680J				
26-672	26-680	1/16 to 1-1/4	30	9/64	6"
26-6721	26-6801				
26-673	26-757	1/16 to 3"	30	9/64	11-1/4
-	26-681J				
26-674	26-681	1/16 to 1-3/4	50	3/16	7"
26-6741	26-6811				
26-67410	26-68110				
-	26-684J				
26-679	26-684	1/16 to 3"	50	3/16	11-1/4
26-6791	26-6841				
-	26-683J				
26-675	26-683	1/16 to 4"	50	3/16	14"
26-6750	26-6830				
26-6751	26-6831				
26-578	26-579				8"
26-5780	26-5790	3/16 to 2"	120	5/16	8-3/4
26-669	26-758	3/16 to 3"	120	5/16	11-7/8
-	26-682J				
26-676	26-682	3/16 to 4"	120	5/16	15-1/4
26-6761	26-6821				
26-608	26-609	3/16 to 7"	120	5/16	24"
26-618	26-619	5/16 to 7"	120	5/16	30"
26-677	26-574	5/16 to 9"	175	11/32	32"
26-689	26-575	5/16 to 13"	175	11/32	42"

WIRE MANAGEMENT

CABLE TIES



- HIGH VISIBILITY CABLE TIES - Bright colors provide easy identification and color coding.
- COLOR CODING - Ideal for color coding electrical wiring and cable, hydraulic lines, tubing and pipe.
- HEAVY-DUTY SECURING [26-1371 thru 26-13820] - Use for large cable or hose management and support, packaging and other industrial applications requiring high strength.
- HIGH STRENGTH NYLON 6/6 CONSTRUCTION
- MADE IN THE U.S.A.



Color-Coded Cable Ties

Brown	Red	Orange	Yellow	Green	Blue	Purple	Gray	Pink	Burgundy	Bundle Dia.	Min. Tensile Strength (Lbs.)	Approx. Width	Approx. Length
26-645	26-646	26-647	26-648	26-649	26-650	26-651	26-652	26-665	26-658	1/16 to 3/4	18	3/32	4"
26-6450	26-6460	26-6470	26-6480	26-6490	26-6500	26-6510	26-6520	26-6650	26-6580				
-	-	26-700	26-699	26-701	26-702	-	-	26-698	-	1/16 to 1-3/4	50	3/16	7"
26-1070	26-1071	26-1072	26-1073	26-1074	26-1075	26-1076	26-1077	-	-				
26-1078	26-1079	26-1080	26-1081	26-1082	26-1083	26-1084	26-1085	-	-	1/16 to 3"	50	3/16	11"
-	26-1371	26-1372	26-1373	26-1374	26-1375	26-1376	26-1377	-	-				
-	26-13710	26-13720	26-13730	26-13740	26-13750	26-13760	26-13770	-	-	3/16 to 4"	120	5/16	14-13/16



Fluorescent Color-Coded Cable Ties

Fluorescent Pink	Fluorescent Yellow	Fluorescent Orange	Fluorescent Green	Fluorescent Blue	Bundle Dia.	Min. Tensile Strength (Lbs.)	Approx. Width	Approx. Length
26-653	26-655	26-654	26-656	26-664	1/16 to 3/4	18	3/32	4"
26-6530	26-6550	26-6540	26-6560	26-6640				
26-6980	26-6990	26-7000	26-7010	26-7020	1/16 to 1-3/4	50	3/16	7"
26-1379	-	26-1381	26-1378	-				
26-13790	-	26-13810	26-13780	26-13820	3/16 to 4"	120	5/16	14-13/16

Gladhands



- Aluminum construction
- Conforms to SAE J318.
- Fits 1/2" air hose fittings.

No.	Application	Seal Type
60-225	Universal	Compression
60-226	Service(blue)	Compression
60-227	Emergency(red)	Compression
60-273*	Service(blue)	Blue Polyurethane
60-274*	Emergency(red)	Red Polyurethane
60-276	Service	Blue Polyurethane
60-277	Emergency	Red Polyurethane

* - With painted body

Polyurethane Gladhand Seals



No.	Color
60-228	Black
60-229	Blue
60-230	Red

- Polyurethane gladhand seals will never dry out, rot, crack, or tear.
- Completely resistant to road salt, acids, oil, ozone, and other damaging contaminants.
- 10 to 20 times the life of rubber seals.
- Color coded (Black, Red, and Blue) seals reduce the possibility of hook-up error.
- Assures compliance to D.O.T. specifications for air brake system leakage at the gladhand.

Rubber Gladhand Seals

- Neoprene rubber.
- Interchangeable with any ordinary seal.

Illustration	No.	Seal Type
	60-231	Flat
	60-232	Standard
	60-237	Filter Screen
	60-247	Protect-O*

* To be used with filtered units only.

The Basic Types Of Fittings

Pipe



SAE 45° Flare



Compression



Selfalign



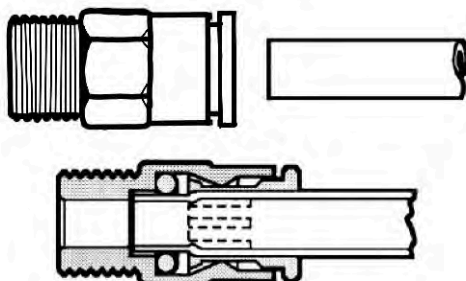
Air Brake Push-In



Air Brake Compression



DOT Push-To-Connect Fittings



- **QUICK CONNECT** - Simply push tubing in; no tools or loose parts to handle in tight places.
- **FULL-FLOW DESIGN** - Provides up to 60% more flow area than conventional fittings with internal tube supports.
- **BRASS CONSTRUCTION** - Elbows and tees are forged brass.
- **PRE-APPLIED SEALANT** - Pipe sealant on all male pipe threads.
- **SPECIFICATIONS:**
Fitting Body - Brass
Seals - Buna-N
Working Pressure - Vacuum to 250 P.S.I.
Working Temperature - -20°F to 200°F
Applicable Standard - FMVSS-106

UNION



Tube Size	Length	No.
1/8	1.23	1862x2 ¹
5/32	1.38	1862x25
3/16	1.78	1862x3
1/4	1.78	1862x4
3/8 x 1/4	1.85	1862x6x4
3/8	1.78	1862x6
1/2	1.95	1862x8
5/8	2.04	1862x10
3/4	2.20	1862x12

UNION TEE



Tube Size	Length	No.
1/8	1.46	1864x2 ¹
5/32	1.50	1864x25 ¹
3/16	1.66	1864x3 ¹
1/4	2.04	1864x4
3/8	2.16	1864x6
1/2	2.52	1864x8
5/8	2.59	1864x10
3/4	2.88	1864x12

UNION ELBOW



Tube Size	Length	No.
1/4	1.04	1865x4
3/8	1.10	1865x6
1/2	1.16	1865x8

45° SWIVEL MALE ELBOW

* - not a swivel



Tube Size	Pipe Thread	No.
1/4	1/8	1880x4
1/4	1/4	1880x4x4
3/8	1/8	1880x6x2
3/8	1/4	1880x6
3/8	3/8	1880x6x6
3/8	1/2	1880x6x8
1/2	1/4	1880x8x4
1/2	3/8	1880x8
1/2	1/2	1880x8x8
5/8	3/8	1880x10x6S
5/8	3/8	1880x10x6*
5/8	1/2	1880x10
3/4	1/2	1880x12*
3/4	3/4	1880x12x12*
3/4	3/4	1880x1212S

FEMALE CONNECTOR



Tube Size	Pipe Thread	Hex	No.
1/4	1/8	9/16	1866x4
1/4	1/4	3/4	1866x4x4
3/8	1/8	11/16	1866x6x2
3/8	1/4	3/4	1866x6
3/8	3/8	7/8	1866x6x6
1/2	3/8	1-1/8	1866x8
1/2	1/2	1-1/8	1866x8x8

FITTINGS

AIR BRAKE

DOT Push-To-Connect Fittings



FEMALE ELBOW



Tube Size	Pipe Thread	No.
1/4	1/8	1870x4
1/4	1/4	1870x4x4
3/8	1/4	1870x6
3/8	3/8	1870x6x6
1/2	3/8	1870x8
1/2	1/2	1870x8x8

FEMALE ELBOW SWIVEL



Tube Size	Pipe Thread	No.
1/4	1/8	1870x4S
1/4	1/4	1870x4x4S
3/8	1/4	1870x6S

MALE ELBOW SWIVEL

* - not a swivel



Tube Size	Pipe Thread	Hex	No.
1/8	1/8	5/16	1869x2 ¹
5/32	1/16	5/16	1869x25x1*
5/32	1/8	3/8	1869x25*
5/32	1/8	7/16	1869x25S
5/32	1/4	7/16	1869x25x4
3/16	1/8	3/8	1869x3*
1/4	1/8	7/16	1869x4
1/4	1/4	9/16	1869x4x4
1/4	3/8	11/16	1869x4x6
3/8	1/8	9/16	1869x6x2
3/8	1/4	9/16	1869x6
3/8	3/8	11/16	1869x6x6
3/8	1/2	11/16	1869x6x8
1/2	1/4	11/16	1869x8x4
1/2	3/8	11/16	1869x8
1/2	1/2	7/8	1869x8x8
5/8	3/8	11/16	1869x10x6
5/8	1/2	7/8	1869x10
3/4	1/2	1-1/16	1869x12
3/4	3/4	1-1/16	1869x12x12

MALE CONNECTOR



Tube Size	Pipe Thread	Hex
1/8	10-32	3/8
1/8	1/16	3/8
1/8	1/8	7/16
5/32	1/16	3/8
5/32	1/8	7/16
3/16	1/8	7/16
1/4	1/16	7/16
1/4	1/8	7/16
1/4	1/4	9/16
1/4	3/8	11/16
3/8	1/8	11/16
3/8	1/4	11/16
3/8	3/8	11/16
3/8	1/2	7/8
1/2	1/4	13/16
1/2	3/8	13/16
1/2	1/2	7/8
5/8	3/8	15/16
5/8	1/2	15/16
3/4	1/2	1-1/16
3/4	3/4	1-1/16

Nylon Tubing

UNION

(Ref. SAE No. 100101BA)



Tube O.D.	No.
1/4	1462x4
3/8	1462x6
1/2	1462x8
5/8	1462x10
3/4	1462x12

BULKHEAD UNION



Tube O.D.	No.
3/16	1474x3
1/4	1474x4
3/8	1474x6
1/2	1474x8

45° MALE ELBOW

(Ref. SAE No. 100302BA)



Tube O.D.	Male Pipe Thread	No.
1/4	1/8	1480x4
1/4	1/4	1480x4x4
3/8	1/8	1480x6x2
3/8	1/4	1480x6
3/8	3/8	1480x6x6
3/8	1/2	1480x6x8
1/2	1/4	1480x8x4
1/2	3/8	1480x8
1/2	1/2	1480x8x8
5/8	3/8	1480x10x6
5/8	1/2	1480x10

90° FEMALE ELBOW

(Ref. SAE No. 100203BA)



Tube O.D.	Female Pipe Thread	No.
3/16	1/8	1470x3
1/4	1/8	1470x4
1/4	1/4	1470x4x4
3/8	1/4	1470x6
3/8	3/8	1470x6x6
1/2	3/8	1470x8
5/8	1/2	1470x10

MALE BRANCH TEE

(Ref. SAE No. 100425BA)



Tube O.D.	Male Pipe Thread	No.
1/4	1/8	1472x4
1/4	1/4	1472x4x4x4
3/8	1/8	1472x6x6x2
3/8	1/4	1472x6
3/8	3/8	1472x6x6x6
1/2x3/8	3/8	1472x8x6x6
1/2	1/4	1472x8x8x4
1/2	1/2	1472x8x8x8
1/2	3/8	1472x8

UNION TEE

(Ref. SAE No. 100401BA)



Tube O.D.	No.
1/4	1464x4
3/8x3/8x1/4	1464x6x6x4
3/8	1464x6
1/2x1/2x3/8	1464x8x8x6
1/2	1464x8
5/8	1464x10

90° MALE ELBOW

(Ref. SAE No. 100202BA)

*Long leg elbow.



Tube O.D.	Male Pipe Thread	No.
3/16	1/8	1469x3
3/16	1/4	1469x3x4
1/4	1/8	1469x4
1/4	1/4	1469x4x4
1/4	3/8	1469x4x6
3/8	1/8	1469x6x2
3/8	1/4	1469x6
3/8	1/4	1469x6L*
3/8	3/8	1469x6x6
3/8	1/2	1469x6x8
1/2	1/4	1469x8x4
1/2	3/8	1469x8
1/2	3/8	1469x8L*
1/2	1/2	1469x8x8
5/8	3/8	1469x10x6
5/8	1/2	1469x10
5/8	3/4	1469x10x12
3/4	1/2	1469x12
3/4	3/4	1469x12x12

UNION ELBOW

(Ref. SAE No. 100201BA)



Tube O.D.	No.
1/4	1465x4
3/8	1465x6
1/2	1465x8
5/8	1465x10

MALE RUN TEE

(Ref. SAE No. 100424BA)



Tube O.D.	Male Pipe Thread	No.
1/4	1/8	1471x4
1/4	1/4	1471x4x4x4
3/8x1/4	1/4	1471x6x4x4
3/8	1/4	1471x6
3/8	3/8	1471x6x6x6
1/2	3/8	1471x8

ANCHOR FITTING FOR TUBING & SLIDER HOSES



Tube O.D.	Female Pipe Thread	No.
3/8	3/8	90-766
1/2	3/8	90-768

FEMALE BRANCH TEE



Tube O.D.	Female Pipe Thread	No.
3/8	1/4	1477x6

FITTINGS

AIR BRAKE

Nylon Tubing

SLEEVE

(Ref. SAE No. 100115)



Tube O.D.	No.
3/16	1460x3
1/4	1460x4
3/8	1460x6
1/2	1460x8
5/8	1460x10
3/4	1460x12

NUT

(Ref. SAE No. 100110)



Tube O.D.	No.
3/16	1461x3
1/4	1461x4
3/8	1461x6
1/2	1461x8
5/8	1461x10
3/4	1461x12

FEMALE CONNECTOR

(Ref. SAE No. 100103BA)



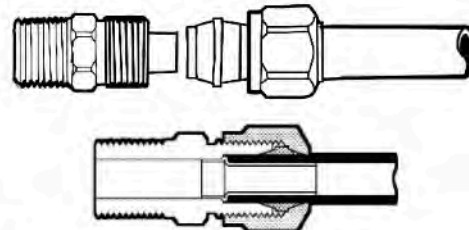
Tube O.D.	Female Pipe Thread	No.
1/4	1/8	1466x4
1/4	1/4	1466x4x4
3/8	1/8	1466x6x2
3/8	1/4	1466x6
3/8	3/8	1466x6x6
1/2	3/8	1466x8
1/2	1/2	1466x8x8

MALE CONNECTOR

(Ref. SAE No. 100102BA)



Tube O.D.	Male Pipe Thread	No.
3/16	1/16	1468x3x1
3/16	1/8	1468x3
3/16	1/4	1468x3x4
1/4	1/16	1468x4x1
1/4	1/8	1468x4
1/4	1/4	1468x4x4
1/4	3/8	1468x4x6
3/8	1/8	1468x6x2
3/8	1/4	1468x6
3/8	3/8	1468x6x6
3/8	1/2	1468x6x8
1/2	1/4	1468x8x4
1/2	3/8	1468x8
1/2	1/2	1468x8x8
1/2	3/4	1468x8x12
5/8	3/8	1468x10x6
5/8	1/2	1468x10
5/8	3/4	1468x10x12
3/4	1/2	1468x12
3/4	3/4	1468x12x12



Assembly Instructions:

1. Slide nut and then sleeve on tubing. Threaded end of nut must face out.
2. Insert tubing into fitting. Be sure tubing is bottomed on fitting shoulder.
3. Thread nut onto fitting body until it is hand tight.
4. From that point, tighten with a wrench the number of turns indicated below.

Tube O.D.	Tighten Nut to:	Additional Turns From Hand Tight
1/4	85 to 115 in. lbs.	3
3/8	12 to 17 ft. lbs.	4
1/2	25 to 33 ft. lbs.	4
5/8	26 to 35 ft. lbs.	3.5 (3-1/2)
3/4	38 to 50 ft. lbs.	3.5 (3-1/2)

Tube O.D.	1/4	3/8	1/2	5/8	3/4
Thread Size	7/16-24	17/32-24	11/16-20	13/16-18	1-18

INSERT

* Not as illustrated.



Tube O.D.	No.
3/16	1484x3*
1/4	1484x4
5/16	1484x5
3/8	1484x6
1/2	1484x8
5/8	1484x10
3/4	1484x12

63NTA STAINLESS STEEL INSERTS



Tube O.D.	No.
1/4	63NTA-4
3/8	63NTA-6
1/2	63NTA-8
5/8	63NTA-10
3/4	63NTA-12



UNION



Tube Size	No.
5/32	P1862x25
3/16	P1862x3
1/4	P1862x4
3/8	P1862x6
1/2	P1862x8
5/8	P1862x10
3/4	P1862x12

UNION TEE



Tube Size	No.
1/4	P1864x4
1/4 x 1/4 x 3/8	P1864x4x46
1/4 x 3/8 x 1/4	P1864x4x64
3/8 x 3/8 x 1/4	P1864x6x64
3/8	P1864x6
1/2	P1864x8
5/8	P1864x10

UNION ELBOW



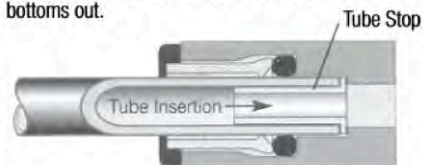
Tube Size	No.
1/4	P1865x4
3/8	P1865x6
1/2	P1865x8

FITTINGS

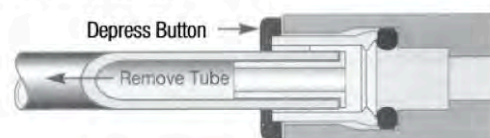
AIR BRAKE

DOT Push-To-Connect

Connection - Simply push the tubing in until it bottoms out.



Disconnection - Depress the release button, then pull the tube out.



FEMALE CONNECTOR



Tube Size	Pipe Thread	Hex	No.
1/4	1/8	13mm	P1866x4
1/4	1/4	16mm	P1866x4x4
3/8	1/4	16mm	P1866x6
3/8	3/8	22mm	P1866x6x6

MALE CONNECTOR



Tube Size	Pipe Thread	Hex	No.
5/32	1/8	11mm	P1868x25
3/16	1/8	7/16	P1868x3
1/4	1/8	11mm	P1868x4
1/4	1/4	14mm	P1868x4x4
1/4	3/8	18mm	P1868x4x6
3/8	1/8	16mm	P1868x6x2
3/8	1/4	16mm	P1868x6
3/8	3/8	18mm	P1868x6x6
3/8	1/2	22mm	P1868x6x8
1/2	1/4	22mm	P1868x8x4
1/2	3/8	22mm	P1868x8
1/2	1/2	22mm	P1868x8x8
5/8	3/8	1"	P1868x10x6

FITTINGS

AIR BRAKE



Parker® DOT Push-To-Connect

MALE RUN TEE SWIVEL



Tube Size	Pipe Thread	No.
1/4	1/8	P1871x4
1/4	1/4	P1871x4x4
3/8	1/4	P1871x6
3/8	3/8	P1871x6x6
1/2	3/8	P1871x8
1/2	1/2	P1871x8x8
5/8	1/2	P1871x10

MALE BRANCH TEE SWIVEL



Tube Size	Pipe Thread	No.
3/16	1/8	P1872x3
1/4	1/8	P1872x4
1/4	1/4	P1872x4x4
3/8	1/4	P1872x6
3/8	3/8	P1872x6x6
1/2	1/4	P1872x8x4
1/2	3/8	P1872x8
1/2	1/2	P1872x8x8
5/8	1/2	P1872x10

BULKHEAD UNION



Tube O.D.	No.
1/4	P1874x4*
3/8	P1874x6*
1/2	P1874x8

"Y" UNION



Tube Size	No.
1/4	P1840x4
3/8	P1840x6
1/2	P1840x8

* Composite body

45° SWIVEL MALE ELBOW



Tube Size	Pipe Thread	Hex	No.
1/4	1/8	9/16	P1880x4x2
1/4	1/4	9/16	P1880x4x4
1/4	3/8	9/16	P1880x4x6
3/8	1/8	3/4	P1880x6x2
3/8	1/4	3/4	P1880x6x4
3/8	3/8	3/4	P1880x6x6
3/8	1/2	7/8	P1880x6x8
1/2	1/4	15/16	P1880x8x4
1/2	3/8	15/16	P1880x8x6
1/2	1/2	15/16	P1880x8x8
5/8	3/8	1-1/16	P1880x10x6
5/8	1/2	1-1/16	P1880x10x8
3/4	1/2	1-3/16	P1880x12x8
3/4	3/4	1-3/16	P1880x12

MALE ELBOW SWIVEL



Tube Size	Pipe Thread	Hex	No.
5/32	1/8	11mm	P1869x25**
3/16	1/8	11mm	P1869x3**
1/4	1/8	11mm	P1869x4
1/4	1/4	14mm	P1869x4x4
1/4	3/8	18mm	P1869x4x6
3/8	1/4	17mm	P1869x6
3/8	3/8	18mm	P1869x6x6
3/8	1/2	22mm	P1869x6x8
1/2	1/4	7/8	P1869x8x4
1/2	3/8	7/8	P1869x8
1/2	1/2	1"	P1869x8x8
5/8	3/8	1-1/16	P1869x10x6
5/8	1/2	1-1/16	P1869x10
3/4	1/2	1-1/16	P1869x12
3/4	3/4	1-3/16	P1869x1212

"DOT" Push-To-Connect Metric

MALE CONNECTOR WITH METRIC THREADS







Tube Size	Male Metric Thread	Hex	No.
1/4	M12x1.5	11/16	P1867x4x12
1/4	M16x1.5	7/8	P1867x4x16
3/8	M12x1.5	3/4	P1867x6x12
3/8	M16x1.5	7/8	P1867x6x16
3/8	M22x1.5	1-1/16	P1867x6x22
1/2	M12x1.5	7/8	P1867x8x12
1/2	M16x1.5	7/8	P1867x8x16
1/2	M22x1.5	1-1/16	P1867x8x22

MALE ELBOW WITH METRIC THREADS



Tube Size	Male Metric Thread	Hex	No.
1/4	M12x1.5	17mm	P1870x4x12
1/4	M16x1.5	24mm	P1870x4x16
1/4	M22x1.5	30mm	P1870x4x22
3/8	M12x1.5	17mm	P1870x6x12
3/8	M16x1.5	24mm	P1870x6x16
1/2	M12x1.5	17mm	P1870x8x12
1/2	M16x1.5	24mm	P1870x8x16
1/2	M22x1.5	30mm	P1870x8x22

DOT Standpipe Fittings

Illustration	No.	Tube Size	Standpipe Size
	STANDPIPE REDUCER P1837x46SP	1/4	3/8
	P1837x64SP	3/8	1/4
	STANDPIPE ELBOW P1869x4SP	1/4	1/4
	P1869x46SP	1/4	3/8
	P1869x6SP	3/8	3/8
	P1869x64SP	3/8	1/4
	P1869x68SP	3/8	1/2
	P1869x84SP	1/2	1/4
	P1869x86SP	1/2	3/8
	P1869x8SP	1/2	1/2
	P1869108SP	5/8	1/2
	P1869x10SP	5/8	5/8
	STANDPIPE MALE RUN TEE P1871x4SP	1/4	1/4
	P1871x46SP	1/4	3/8
	P1871x6SP	3/8	3/8
	P1871646SP	3/8 x 1/4	3/8
	STANDPIPE MALE BRANCH TEE P1872x4SP	1/4	1/4
	P1872x46SP	1/4	3/8
	P1872x64SP	3/8	1/4
	P1872x6SP	3/8	3/8

FITTINGS

AIR BRAKE



Composite DOT Push-To-Connect Fittings

MALE ELBOW SWIVEL



Tube Size	Pipe Thread	Hex	No.
1/4	1/8	5/8	C1869x4
1/4	1/4	5/8	C1869x4x4
1/4	3/8	3/4	C1869x4x6
3/8	1/8	3/4	C1869x6x2
3/8	1/4	3/4	C1869x6
3/8	3/8	3/4	C1869x6x6
3/8	1/2	7/8	C1869x6x8
1/2	1/4	7/8	C1869x8x4
1/2	3/8	7/8	C1869x8
1/2	1/2	7/8	C1869x8x8
5/8	3/8	15/16	C1869x10x6*
5/8	1/2	15/16	C1869x10*
3/4	1/2	1-1/8	C1869x12*
3/4	3/4	1-1/8	C1869x1212*

45° SWIVEL MALE ELBOW



Tube Size	Pipe Thread	Hex	No.
1/4	1/8	5/8	C1880x4
1/4	1/4	5/8	C1880x4x4
1/4	3/8	3/4	C1880x4x6
3/8	1/4	3/4	C1880x6
3/8	3/8	3/4	C1880x6x6
3/8	1/2	7/8	C1880x6x8
1/2	3/8	7/8	C1880x8
1/2	1/2	7/8	C1880x8x8
5/8	3/8	15/16	C1880x10x6*
5/8	1/2	15/16	C1880x10*
3/4	1/2	1-3/16	C1880x12*

MALE RUN TEE SWIVEL



Tube Size	Pipe Thread	Hex	No.
1/4	1/8	5/8	C1871x4
1/4	1/4	5/8	C1871x4x4
1/4 x 3/8	1/4	3/4	C1871x4x64
1/4	3/8	3/4	C1871x4x6
3/8	1/4	3/4	C1871x6
3/8 x 1/4	1/4	3/4	C1871x6x44
3/8 x 1/4	3/8	3/4	C1871x6x46
3/8	3/8	3/4	C1871x6x6
1/2	3/8	7/8	C1871x8*
1/2 x 3/8	3/8	15/16	C1871x8x66*
1/2 x 1/4	1/2	15/16	C1871x8x48*
1/2 x 3/8	1/2	7/8	C1871x8x68*
1/2	1/2	7/8	C1871x8x8*

MALE BRANCH TEE SWIVEL



Tube Size	Pipe Thread	Hex	No.
1/4	1/8	5/8	C1872x4
1/4	1/4	5/8	C1872x4x4
1/4	3/8	3/4	C1872x4x6
3/8	1/4	3/4	C1872x6
3/8	3/8	3/4	C1872x6x6
3/8	1/2	7/8	C1872x6x8
1/2	3/8	7/8	C1872x8
1/2	1/2	7/8	C1872x8x8

FEMALE ELBOW



Tube Size	Pipe Thread	Hex	No.
1/4	1/8	9/16	C1870x4
1/4	1/4	11/16	C1870x4x4
3/8	1/8	11/16	C1870x6x2
3/8	1/4	11/16	C1870x6
3/8	3/8	7/8	C1870x6x6
3/8	1/2	15/16	C1870x6x8
1/2	1/4	11/16	C1870x8x4
1/2	3/8	7/8	C1870x8
1/2	1/2	15/16	C1870x8x8
5/8	1/2	15/16	C1870x10

BULKHEAD UNION



Tube Size	Thread Size	No.
1/4	1/2-20	C1874x4
3/8	3/4-16	C1874x6
1/2	15/16-16	C1874x8

STANDPIPE REDUCER



Tube Size	Standpipe Size	No.
1/4	3/8	C1837x46SP
3/8	1/4	C1837x64SP
3/8	1/2	C1837x68SP

STANDPIPE ELBOW



Tube Size	Standpipe Size	No.
1/4	1/4	C1869x4SP

FEMALE BRANCH TEE



Tube Size	Pipe Thread	No.
1/4	1/8	C1877x4
1/4	1/4	C1877x4x4
3/8	1/4	C1877x6
1/2	3/8	C1877x8
5/8	1/4	C1877x10x4



FITTINGS

AIR BRAKE

Composite DOT Push-To-Connect Fittings



- **SUPERIOR VALUE** - A cost-effective solution for most DOT applications.
- **FULL-FLOW DESIGN** - Provides up to 60% more flow area than conventional fittings with internal tube supports.
- **COMPOSITE CONSTRUCTION** - Threaded bases and tubing connections are brass. Composite bodies are glass-filled nylon.
- **HIGH STRENGTH AND LIGHTWEIGHT** - Up to 50% lighter than all metal DOT fittings and tough enough to meet DOT requirements.
- **PRE-APPLIED SEALANT** - ST-3 thread sealant on all male pipe threads.
- **SPECIFICATIONS:**
Seals: Buna-N
Working Pressure: Vacuum - 250 P.S.I.
Working Temperature: -40°F to 200°F
Applicable Standard: FMVSS-106

UNION



Tube Size	No.
1/4	C1862x4
3/8	C1862x6
1/2	C1862x8
5/8	C1862x10*
3/4	C1862x12*

UNION TEE



Tube Size	No.
1/4	C1864x4
3/8	C1864x6
1/2	C1864x8
5/8	C1864x10*

UNION ELBOW



Tube Size	No.
1/4	C1865x4
3/8	C1865x6
1/2	C1865x8

* Full composite

FEMALE CONNECTOR



Tube Size	Pipe Thread	Hex	No.
1/4	1/8	9/16	C1866x4
1/4	1/4	11/16	C1866x4x4
1/4	3/8	7/8	C1866x4x6
3/8	1/8	11/16	C1866x6x2
3/8	1/4	11/16	C1866x6
3/8	3/8	7/8	C1866x6x6
3/8	1/2	15/16	C1866x6x8
1/2	1/4	7/8	C1866x8x4
1/2	3/8	7/8	C1866x8
1/2	1/2	15/16	C1866x8x8
5/8	1/2	1"	C1866x10

MALE CONNECTOR



1868



K1868

Tube Size	Pipe Thread	Hex	No.
1/8	10-32	3/8	C1868x2A ¹
1/8	1/16	3/8	C1868x2x1 ¹
1/8	1/8	7/16	C1868x2 ¹
5/32	1/16	3/8	C1868x25x1
5/32	1/8	7/16	C1868x25
3/16	1/8	7/16	C1868x3
1/4	1/16	7/16	C1868x4x1
1/4	1/8	1/2	C1868x4
1/4	1/4	9/16	C1868x4x4
1/4	3/8	11/16	C1868x4x6
3/8	1/8	11/16	C1868x6x2
3/8	1/4	11/16	C1868x6
3/8	3/8	11/16	C1868x6x6
3/8	1/2	7/8	C1868x6x8
1/2	1/4	7/8	C1868x8x4
1/2	3/8	7/8	C1868x8
1/2	1/2	7/8	C1868x8x8
5/8	3/8	1"	C1868x10x6
5/8	1/2	1"	C1868x10
3/4	3/8	1-3/16	C1868x12x6
3/4	1/2	1-3/16	C1868x12
3/4	3/4	1-3/16	C1868x1212

FITTINGS

INSTANT

Composite
Push-To-Connect Fittings



SWIVEL MALE ELBOW



Tube O.D.	Male Pipe Thread	No.
1/8	10-32*	1169x2A
1/8	1/16	1169x2x1
1/8	1/8	1169x2
1/8	1/4	1169x2x4
5/32	10-32*	1169x25A
5/32	1/8	1169x25
5/32	1/4	1169x25x4
1/4	10-32*	1169x4A
1/4	1/8	C1169x4
1/4	1/4	C1169x4x4
1/4	3/8	C1169x4x6
5/16	1/8	C1169x5
5/16	1/4	C1169x5x4
5/16	3/8	C1169x5x6
3/8	1/8	C1169x6x2
3/8	1/4	C1169x6
3/8	3/8	C1169x6x6
3/8	1/2	C1169x6x8
1/2	1/4	C1169x8x4
1/2	3/8	C1169x8
1/2	1/2	C1169x8x8

*10-32 UNF Threads are supplied with O-Ring seal.

"Y" - TUBE TO TUBE



Tube O.D.	No.
1/8	C1107x2
5/32	C1107x25
1/4	C1107x4
5/16	C1107x5
3/8	C1107x6

"Y" - TUBE TO THREAD



Tube O.D.	Male Pipe Thread	No.
5/32	1/8	C1108x25
1/4	1/8	C1108x4
1/4	1/4	C1108x4x4
3/8	1/4	C1108x6
3/8	3/8	C1108x6x6

UNION TEE



Tube O.D.	No.
1/8	C1164x2
5/32	C1164x25
1/4	C1164x4
5/16	C1164x5
3/8	C1164x6
1/2	C1164x8

MALE 45° ELBOW



* 10-32 UNF Threads are supplied with O-Ring seal.

Tube O.D.	Male Pipe Thread	No.
5/32	10-32*	C1145x25A
5/32	1/8	C1145x25
5/32	1/4	C1145x25x4
1/4	10-32*	C1145x4A
1/4	1/8	C1145x4
1/4	1/4	C1145x4x4
1/4	3/8	C1145x4x6
5/16	1/8	C1145x5
5/16	1/4	C1145x5x4
5/16	3/8	C1145x5x6
5/16	1/2	C1145x5x8
3/8	1/8	C1145x6x2
3/8	1/4	C1145x6
3/8	3/8	C1145x6x6
3/8	1/2	C1145x6x8
1/2	1/4	C1145x8x4
1/2	3/8	C1145x8
1/2	1/2	C1145x8x8

MALE RUN TEE SWIVEL



*10-32 UNF Threads are supplied with O-Ring seal.

Tube O.D.	Male Pipe Thread	No.
1/8	10-32*	C1171x2A
1/8	1/16	C1171x2x1
1/8	1/8	C1171x2
5/32	1/8	C1171x25
1/4	1/8	C1171x4
1/4	1/4	C1171x4x4
1/4	3/8	C1171x4x6
5/16	1/8	C1171x5
5/16	1/4	C1171x5x4
3/8	1/4	C1171x6
3/8	3/8	C1171x6x6
1/2	3/8	C1171x8

MALE BRANCH TEE SWIVEL



*10-32 UNF Threads are supplied with O-Ring seal.

Tube O.D.	Male Pipe Thread	No.
1/8	10-32*	C1172x2A
1/8	1/16	C1172x2x1
1/8	1/8	C1172x2
5/32	1/8	C1172x25
1/4	1/8	C1172x4
1/4	1/4	C1172x4x4
1/4	3/8	C1172x4x6
5/16	1/8	C1172x5
5/16	1/4	C1172x5x4
3/8	1/8	C1172x6x2
3/8	1/4	C1172x6
3/8	3/8	C1172x6x6
1/2	3/8	C1172x8
1/2	1/2	C1172x8x8



- **SUPERIOR VALUE** - A cost effective solution for instant tubing connections.
- **TYPICAL APPLICATIONS** - Compressed air, pneumatic instrumentation, inert gas.
- **USED WITH:** PU340 Polyurethane tubing; PT230 and TP160 Nylon tubing; PT240 Polyethylene tubing.

Specifications

Body Polybutylene Terephthalate resin
 Threads Nickel plated brass
 Gripping Ring Stainless steel
 Seals Buna-N
 Release Ring Acetal plastic
 Working Pressure 150 P.S.I.
 Vacuum Rating 29.5" Hg
 Temp Range 32°F to 140°F

CAP



Tube O.D.

Tube O.D.	K-M No.
5/32	C1130x25
1/4	C1130x4
5/16	C1130x5
3/8	C1130x6
1/2	C1130x8

UNION



Tube O.D.

No.

Tube O.D.	No.
1/8	C1162x2
5/32x1/8	C1162x25x2
5/32	C1162x25
1/4x1/8	C1162x4x2
1/4x5/32	C1162x4x25
1/4	C1162x4
5/16x5/32	C1162x5x25
5/16x1/4	C1162x5x4
5/16	C1162x5
3/8x1/4	C1162x6x4
3/8x5/16	C1162x6x5
3/8	C1162x6
1/2x3/8	C1162x8x6
1/2	C1162x8

BULKHEAD UNION



Tube O.D.

K-M No.

Tube O.D.	K-M No.
5/32	C1174x25
1/4	C1174x4
5/16	C1174x5
3/8	C1174x6
1/2	C1174x8

MALE CONNECTOR



Tube O.D. Male Pipe Thread K-M No.

Tube O.D.	Male Pipe Thread	K-M No.
1/8	10-32*	C1168x2A
1/8	1/16	C1168x2x1
1/8	1/8	C1168x2
1/8	1/4	C1168x2x4
5/32	10-32*	C1168x25A
5/32	1/8	C1168x25
5/32	1/4	C1168x25x4
1/4	10-32*	C1168x4A
1/4	1/8	C1168x4
1/4	1/4	C1168x4x4
1/4	3/8	C1168x4x6
5/16	1/8	C1168x5
5/16	1/4	C1168x5x4
5/16	3/8	C1168x5x6
3/8	1/8	C1168x6x2
3/8	1/4	C1168x6
3/8	3/8	C1168x6x6
3/8	1/2	C1168x6x8
1/2	1/4	C1168x8x4
1/2	3/8	C1168x8
1/2	1/2	C1168x8x8

*10-32 UNF Threads are supplied with O-Ring seal.

FEMALE CONNECTOR



Tube O.D. Female Pipe Thread K-M No.

Tube O.D.	Female Pipe Thread	K-M No.
1/8	1/8	C1166x2
5/32	1/8	C1166x25
1/4	1/8	C1166x4
1/4	1/4	C1166x4x4
5/16	1/8	C1166x5
5/16	1/4	C1166x5x4
3/8	1/8	C1166x6x2
3/8	1/4	C1166x6
3/8	3/8	C1166x6x6

UNION ELBOW



Tube O.D. K-M No.

Tube O.D.	K-M No.
1/8	- C1165x2
5/32	- C1165x25
1/4	- C1165x4
5/16	- C1165x5
3/8	- C1165x6
1/2	- C1165x8

FITTINGS

INSTANT

Composite



Thread Face
Seal
Universal Pipe
Thread

PLUG



Tube O.D. (mm)	No.
4	M1129x4
5	M1129x5
6	M1129x6
8	M1129x8
10	M1129x10
12	M1129x12

UNION TEE



Tube O.D. (mm)	No.
4	CM1164x4
6	CM1164x6
8	CM1164x8
10	CM1164x10

MALE BRANCH TEE SWIVEL



Tube O.D. (mm)	Male Pipe Thread	No.
4	1/8	CM1172x4x2
4	1/4	CM1172x4x4
6	1/8	CM1172x6x2
6	1/4	CM1172x6x4
8	1/8	CM1172x8x2
8	1/4	CM1172x8x4
8	3/8	CM1172x8x6
10	1/4	CM1172x104
10	3/8	CM1172x106
10	1/2	CM1172x108

UNION



Tube O.D. (mm)	No.
4	CM1162x4
6	CM1162x6
8	CM1162x8
10	CM1162x10

UNION ELBOW



Tube O.D. (mm)	No.
4	CM1165x4
6	CM1165x6
8	CM1165x8

MALE SWIVEL ELBOW



Tube O.D. (mm)	Male Pipe Thread	No.
6	1/8	CM1169x6x2
6	1/4	CM1169x6x4
8	1/8	CM1169x8x2
8	1/4	CM1169x8x4
8	3/8	CM1169x8x6
10	1/4	CM1169x104
10	3/8	CM1169x106
10	1/2	CM1169x108

"Y" - TUBE TO TUBE



Tube O.D. (mm)	No.
4	CM1107x4
6	CM1107x6
10	CM1107x10

NOTE: These fittings are not designed to DOT standards and should not be used for air brake applications.

Compression

FEMALE CONNECTOR (Ref. SAE No. 060103BA)



Tube O.D.	Female Pipe Thread	No.
1/8	1/8	66x2
3/16	1/8	66x3
1/4	1/8	66x4
1/4	1/4	66x4x4
5/16	1/8	66x5
5/16	1/4	66x5x4
3/8	1/8	66x6x2
3/8	1/4	66x6
1/2	3/8	66x8

BULKHEAD UNION



Tube O.D.	No.
1/4	74x4
3/8	74x6

MALE ELBOW (Ref. SAE No. 060202BA)



Tube O.D.	Male Pipe Thread	No.
1/8	1/16	69x2x1
1/8	1/8	69x2
3/16	1/8	69x3
3/16	1/4	69x3x4
1/4	1/8	69x4
1/4	1/4	69x4x4
5/16	1/8	69x5
5/16	1/4	69x5x4
3/8	1/8	69x6x2
3/8	1/4	69x6
3/8	3/8	69x6x6
3/8	1/2	69x6x8
1/2	1/4	69x8x4
1/2	3/8	69x8
1/2	1/2	69x8x8
5/8	1/2	69x10
3/4	1/2	69x12
3/4	3/4	69x12x12

UNION ELBOW (Ref. SAE No. 060201BA)



Tube O.D.	No.
1/8	65x2
3/16	65x3
1/4	65x4
5/16	65x5
3/8	65x6
1/2	65x8

FEMALE ELBOW (Ref. SAE No. 060203BA)



Tube O.D.	Female Pipe Thread	No.
1/4	1/8	70x4
3/8	1/4	70x6

UNION TEE (Ref. SAE No. 060401BA)



Tube O.D.	No.
1/8	64x2
3/16	64x3
1/4	64x4
5/16	64x5
3/8	64x6
1/2	64x8

MALE RUN TEE (Ref. SAE No. 060424BA)



Tube O.D.	Male Pipe Thread	No.
3/16	1/8	71x3
1/4	1/8	71x4
1/4	1/4	71x4x4x4
3/8	1/4	71x6
1/2	3/8	71x8

MALE BRANCH TEE (Ref. SAE No. 060425BA)



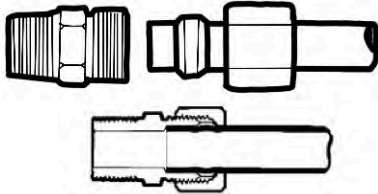
Tube O.D.	Male Pipe Thread	No.
1/4	1/8	72x4
1/4	1/4	72x4x4x4
5/16	1/8	72x5
3/8	1/4	72x6
1/2	3/8	72x8

FITTINGS

BRASS



Compression



Tube O.D.	1/8	3/16	1/4	5/16	3/8
Thread	5/16-24	3/8-24	7/16-24	1/2-24	9/16-24
Tube O.D.	7/16	1/2	5/8	3/4	1
Thread	5/8-24	11/16-20	13/16-18	1-18	1-1/4-18

COMPRESSION SLEEVE (Ref. SAE No. 060115)



Tube O.D.	No.
1/8	60x2
3/16	60x3
1/4	60x4
5/16	60x5
3/8	60x6
7/16	60x7
1/2	60x8
5/8	60x10
3/4	60x12

NUT (Ref. SAE No. 060110)



Tube O.D.	No.
1/8	61x2
3/16	61x3
1/4	61x4
5/16	61x5
3/8	61x6
7/16	61x7
1/2	61x8
5/8	61x10
3/4	61x12

LONG NUT



Tube O.D.	No.
3/16	1611x3
1/4	1611x4
3/8	1611x6
5/8	1611x10

UNION (Ref. SAE No. 060101BA)



Tube O.D.	No.
1/8	62x2
3/16	62x3
1/4	62x4
5/16	62x5
3/8	62x6
3/8x1/4	62x6x4
7/16	62x7
1/2	62x8
1/2x3/8	62x8x6
5/8	62x10
3/4	62x12

MALE CONNECTOR (Ref. SAE No. 060102BA)



Tube O.D.	Male Pipe Thread	No.
1/8	1/16	68x2x1
1/8	1/8	68x2
3/16	1/8	68x3
1/4	1/8	68x4
1/4	1/4	68x4x4
1/4	3/8	68x4x6
5/16	1/8	68x5
5/16	1/4	68x5x4
3/8	1/8	68x6x2
3/8	1/4	68x6
3/8	3/8	68x6x6
3/8	1/2	68x6x8
1/2	1/4	68x8x4
1/2	3/8	68x8
1/2	1/2	68x8x8
5/8	1/2	68x10
3/4	1/2	68x12
3/4	3/4	68x12x12

FITTINGS

BRASS



Low Pressure Hose Ends

MALE PIPE (PTF SHORT)



Hose I.D.	Pipe Size	No.
1/8	1/8	10502B-102
3/16	1/8	10503B-102
3/16	1/4	10503B-104
1/4	1/8	10504B-102
1/4	1/4	10504B-104
1/4	3/8	10504B-106
5/16	1/8	10505B-102
5/16	1/4	10505B-104
3/8	1/8	10506B-102
3/8	1/4	10506B-104
3/8	3/8	10506B-106
3/8	1/2	10506B-108
1/2	1/4	10508B-104
1/2	3/8	10508B-106
1/2	1/2	10508B-108
1/2	3/4	10508B-112
5/8	3/8	54-881
5/8	1/2	54-883
5/8	3/4	10510B-112
3/4	3/8	54-885
3/4	1/2	54-886
3/4	3/4	10512B-112
1"	1/2	54-888
1"	3/4	54-889
1"	1"	54-890

FEMALE PIPE (NPTF)



Hose I.D.	Pipe Size	No.
1/8	1/8	10502B-202
3/16	1/8	10503B-202
1/4	1/8	10504B-202
1/4	1/4	10504B-204
5/16	1/8	10505B-202
5/16	1/4	10505B-204
3/8	1/8	10506B-202
3/8	1/4	10506B-204
3/8	3/8	10506B-206
1/2	1/4	10508B-204
1/2	3/8	10508B-206
1/2	1/2	10508B-208

MALE SWIVEL BARB FITTINGS



Hose I.D.	Pipe Size	No.
1/4	1/4	54-734
3/8	1/4	54-735
3/8	3/8	54-736

IN-LINE SWIVEL ADAPTOR



Male Pipe Thread	Female Pipe Thread	No.
1/4	1/4	54-737
3/8	3/8	54-738

MALE PIPE 90° ELBOW



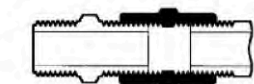
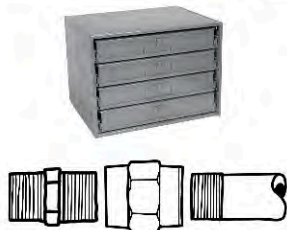
Hose I.D.	Pipe Size	No.
1/4	1/8	10504B-C02
1/4	1/4	10504B-C04
1/4	3/8	10504B-C06
5/16	1/8	10505B-C02
5/16	1/4	10505B-C04
5/16	3/8	10505B-C06
3/8	1/8	10506B-C02
3/8	1/4	10506B-C04
3/8	3/8	10506B-C06
3/8	1/2	10506B-C08
1/2	1/4	10508B-C04
1/2	3/8	10508B-C06
1/2	1/2	10508B-C08
3/4	3/4	10512B-C12

UNION



Hose I.D.	No.
3/16	10503BY03
1/4	10504BY04
5/16	10505BY05
3/8	10506BY06
1/2	54-953
5/8	54-954
3/4	54-955
1"	54-952

Pipe



Pipe Size	1/16	1/8	1/4	3/8	1/2	3/4
Thread Size	1/16-27	1/8-27	1/4-18	3/8-18	1/2-14	3/4-14

PIPE CAP



Female Pipe Thread	No.
1/8	3129x2
1/4	3129x4
3/8	3129x6
1/2	3129x8
3/4	3129x12

SLOTTED PLUG

*PTF Short Thread



Male Pipe Thread	No.
1/8	3150x2*
1/4	3150x4*
3/8	3150x6*

SQUARE HEAD PLUG

*PTF Short Thread



Male Pipe Thread	No.
1/8	3151x2*
1/4	3151x4*
3/8	3151x6*
1/2	3151x8*
3/4	3151x12*

HEX HEAD PLUG

*PTF Short Thread
** PTF Special Thread



Male Pipe Thread	No.
1/8	3152x2*
1/4	3152x4*
3/8	3152x6*
1/2	3152x8*
3/4	3152x12**
1"	3152x16**

HEX SOCKET PLUG

(Ref. SAE No. 130109P)
*PTF Short Thread



Male Pipe Thread	No.
1/16	5/32 3155x1
1/8	3/16 3155x2
1/4	1/4 3155x4*
3/8	5/16 3155x6*
1/2	3/8 3155x8*
3/4	9/16 3155x12*

ADAPTER

(Ref. SAE No. 130109)



Female Pipe Thread	Male Pipe Thread	No.
1/8	1/8	3200x2
1/4	1/8	3200x4x2
1/4	1/4	3200x4
3/8	1/4	3200x6x4
3/8	3/8	3200x6
1/2	1/4	3200x8x4
1/2	3/8	3200x8x6
1/2	1/2	3200x8
3/4	3/8	3200x12x6
3/4	1/2	3200x12x8

PIPE LOCKNUT



Female Pipe Thread	No.
1/8	3100x2
1/4	3100x4
3/8	3100x6
1/2	3100x8
3/4	3100x12

BUSHING

(Ref. SAE No. 130140)

*PTF Short Thread



Male Pipe Thread	Female Pipe Thread	No.
1/4	1/8	3220x4x2*
3/8	1/8	3220x6x2*
3/8	1/4	3220x6x4*
1/2	1/8	3220x8x2*
1/2	1/4	3220x8x4*
1/2	3/8	3220x8x6*
3/4	1/8	3220x12x2*
3/4	1/4	3220x12x4*
3/4	3/8	3220x12x6*
3/4	1/2	3220x12x8*

FULL LENGTH PATTERN BUSHING

(Allows greater thread engagement)



Male Pipe Thread	Female Pipe Thread	No.	Length
1/4	1/8	3222x4x2	.75
3/8	1/8	3222x6x2	.75
3/8	1/4	3222x6x4	.75
1/2	1/8	3222x8x2	1.00
1/2	1/4	3222x8x4	1.00
1/2	3/8	3222x8x6	1.00
3/4	1/8	3222x12x2	1.00
3/4	1/4	3222x12x4	1.00
3/4	3/8	3222x12x6	1.00
3/4	1/2	3222x12x8	1.00

UNION



Female Pipe Thread	No.
1/8	3250x2*
1/4	3250x4*
3/8	3250x6
1/2	3250x8

COUPLING

(Ref. SAE No. 130138)



Female Pipe Thread	No.
1/16	3300x1
1/8	3300x2
1/4	3300x4
3/8	3300x6
1/2	3300x8
3/4	3300x12

REDUCING COUPLING

(Ref. SAE No. 130138)



Female Pipe Thread	Female Pipe Thread	No.
1/4	1/8	3300x4x2
3/8	1/8	3300x6x2
3/8	1/4	3300x6x4
1/2	1/4	3300x8x4
1/2	3/8	3300x8x6
3/4	3/8	3300x12x6
3/4	1/2	3300x12x8

FITTINGS

BRASS



Pipe

LONG NIPPLE



NOTE: All Nipples 3-1/2" and longer are red brass.

Male Pipe Thread	Length	No.
1/8	1-1/2	3327x2
1/4	1-1/2	3327x4
3/8	1-1/2	3327x6
1/2	1-1/2	3327x8
3/4	1-1/2	3327x12
1/8	2	3328x2
1/4	2	3328x4
3/8	2	3328x6
1/2	2	3328x8
3/4	2	3328x12
1/8	2-1/2	3329x2
1/4	2-1/2	3329x4
3/8	2-1/2	3329x6
1/2	2-1/2	3329x8
3/4	2-1/2	3329x12
1/8	3	3330x2
1/4	3	3330x4
3/8	3	3330x6
1/2	3	3330x8
3/4	3	3330x12
1/8	3-1/2	3331x2
1/4	3-1/2	3331x4
3/8	3-1/2	3331x6
1/2	3-1/2	3331x8
3/4	3-1/2	3331x12
1/8	4	3332x2
1/4	4	3332x4
3/8	4	3332x6
1/2	4	3332x8
3/4	4	3332x12
1/8	4-1/2	3333x2
1/4	4-1/2	3333x4
3/8	4-1/2	3333x6
1/2	4-1/2	3333x8
3/4	4-1/2	3333x12
1/8	5	3334x2
1/4	5	3334x4
3/8	5	3334x6
1/2	5	3334x8
3/4	5	3334x12
1/8	5-1/2	3335x2
1/4	5-1/2	3335x4
3/8	5-1/2	3335x6
1/2	5-1/2	3335x8
3/4	5-1/2	3335x12
1/8	6	3336x2
1/4	6	3336x4
3/8	6	3336x6
1/2	6	3336x8
3/4	6	3336x12

HEX NIPPLE

(Ref. SAE No. 130137)



Male Pipe Thread	Male Pipe Thread	No.
1/8	1/16	3325x2x1
1/8	1/8	3325x2
1/4	1/8	3325x4x2
1/4	1/4	3325x4
3/8	1/8	3325x6x2
3/8	1/4	3325x6x4
3/8	3/8	3325x6
1/2	3/8	3325x8x6
1/2	1/2	3325x8
3/4	3/4	3325x12

CLOSE NIPPLE



Male Pipe Thread	Length	No.
1/8	3/4	3326x2
1/4	7/8	3326x4
3/8	1"	3326x6
1/2	1-1/8	3326x8
3/4	1-3/8	3326x12

45° STREET ELBOW

(Ref. SAE No. 130339)



Female Pipe Thread	Male Pipe Thread	No.
1/8	1/8	3350x2
1/4	1/4	3350x4
3/8	3/8	3350x6
1/2	1/2	3350x8
3/4	3/4	3350x12

STREET ELBOW

(Ref. SAE No. 130239)

*PTF Short Thread

** PTF Special Short Thread



Female Pipe Thread	Male Pipe Thread	No.
1/8	1/8	3400x2
1/8*	1/8**	3400x2W
1/4	1/8	3400x4x2
1/4	1/4	3400x4
1/4*	1/4**	3400x4W
3/8	3/8	3400x6
3/8*	3/8**	3400x6W
1/2	1/2	3400x8
3/4	3/4	3400x12

ELBOW

(Ref. SAE No. 130238)



Female Pipe Thread	No.
1/8	3500x2
1/4	3500x4
3/8	3500x6
1/2	3500x8
3/4	3500x12

MALE BRANCH TEE

(Ref. SAE No. 130425)



Female Pipe Thread	Male Pipe Thread	No.
1/8	1/8	3600x2
1/4	1/4	3600x4
3/8	3/8	3600x6
1/2	1/2	3600x8
3/4	3/4	3600x12

TEE

(Ref. SAE No. 130438)



Female Pipe Thread	No.
1/8	3700x2
1/4	3700x4
3/8	3700x6
1/2	3700x8
3/4	3700x12

STREET TEE

(Ref. SAE No. 130424)



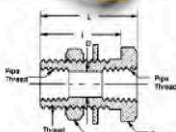
Female Pipe Thread	Male Pipe Thread	No.	Length
1/8	1/8	3750x2	-
1/8	1/16	3750x2x1	1.20
1/4	1/4	3750x4	-
1/4	1/8	3750x4x2	1.54
3/8	3/8	3750x6	-
3/8	1/4	3750x6x4	-
1/2	1/2	3750x8	-
3/4	3/4	3750x12	-

CROSS



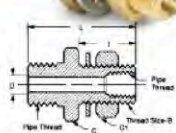
Female Pipe Thread	No.
1/8	3950x2
1/4	3950x4
3/8	3950x6
1/2	3950x8
3/4	3950x12

BULKHEAD COUPLING



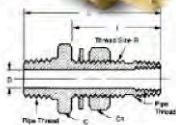
Female Pipe Thread	No.	Thread Size B	I	L
1/8	90-752	5/8-18	1.50	
1/4	90-755	3/4-16	1.25	1.50
1/4	90-754	3/4-16	0.69	0.94
3/8	90-756	1-14	1.06	1.31
1/2	90-758	1-1/8-14	1.50	

BULKHEAD COUPLING



Male Pipe Thread	Female Pipe Thread	No.	Thread Size B	I	L
1/2	1/4	1340	3/4-16	1.13	2.16
1/2	1/4	1341	3/4-16	1.53	2.53

BULKHEAD COUPLING



Male Pipe Thread	Female Pipe Thread	No.	Thread Size B	I	L
1/2	1/4	1342	1-14	1.88	2.94
1/2	1/4	1343	1-14	2.88	3.94

NOTE: Bulkheads are also available in steel. See page 56-5.

ADAPTER

(Ref. SAE No. 130109)



Female Pipe Thread	Male Pipe Thread	No.	Length
1/2	1/8	3200x8x2	0.75
3/4	1/4	3200x12x4	0.75

REDUCING COUPLING

(Ref. SAE No. 130138)



Female Pipe Thread	Female Pipe Thread	No.	Length
3/8	1/4	3300x6x4	0.75
3/4	1/4	3300x12x4	0.75

HEX NIPPLE

(Ref. SAE No. 130137)



Male Pipe Thread	Male Pipe Thread	No.	Length
1/2	1/18	3325x8x2	0.75
3/4	1/8	3325x12x2	0.75
3/4	3/8	3325x12x6	0.75

STREET ELBOW

(Ref. SAE No. 130239)



Female Pipe Thread	Male Pipe Thread	No.	Length
1/16	1/16	3400x1	0.82
1/8	1/16	3400x2x1	0.64
3/8	1/8	3400x6x2	1.08
3/8	1/4	3400x6x4	1.08
1/2	1/4	3400x8x4	1.40
1/2	3/8	3400x8x6	1.40

ELBOW

(Ref. SAE No. 130238)



Female Pipe Thread	Female Pipe Thread	No.	Length
1/16	1/16	3500x1	0.75
1/8	1/16	3500x2x1	0.84
1/4	1/8	3500x4x2	1.12
3/8	1/8	3500x6x2	1.25
3/8	1/4	3500x6x4	1.25
1/2	1/4	3500x8x4	1.58
1/2	3/8	3500x8x6	1.58
3/4	1/4	3500x12x4	1.75
3/4	3/8	3500x12x6	1.75
3/4	1/2	3500x12x8	1.75

MALE BRANCH TEE

(Ref. SAE No. 130425)



Female Pipe Thread	Male Pipe Thread	No.	Length
1/8	1/16	3600x2x1	1.00
1/4	1/8	3600x4x2	1.56
3/8	1/4	3600x6x4	1.68
1/2	3/8	3600x8x6	2.16
3/4	1/2	3600x12x8	2.32

STREET TEE

(Ref. SAE No. 130424)



Female Pipe Thread	Male Pipe Thread	No.	Length
1/8	1/16	3750x2x1	1.20
1/4	1/8	3750x4x2	1.54



FITTINGS

AIR BRAKE

338 'B' Hose Ends

MALE CONNECTOR



Hose I.D.	Male Pipe Size	No.
3/8	1/4	33806B-Y24
3/8	3/8	33806B-Y26
3/8	1/2	33806B-Y28
1/2	3/8	33808B-Y26
1/2	1/2	33808B-Y28

MALE CONNECTOR WITH SPRING GUARD



Hose I.D.	Male Pipe Size	No.
3/8	1/4	33806B-Y34
3/8	3/8	33806B-Y36
3/8	1/2	33806B-Y38
1/2	3/8	33808B-Y36
1/2	1/2	33808B-Y38

HOSE MENDER



Hose I.D.	Male Pipe Size	No.
3/8		33806B-Y06
1/2		33808B-Y08

FEMALE CONNECTOR (Steel Nut)



Hose I.D.	ABS Thread	No.
3/8	3/4-20	33806B-Y76
1/2	7/8-20	33808B-Y78

FEMALE CONNECTOR WITH ADAPTER (Steel Nut)



Hose I.D.	ABS Swivel Thread	Pipe Size	No.
3/8	3/4-20	1/4	33806B-Y84
3/8	3/4-20	3/8	33806B-Y86
1/2	7/8-20	3/8	33808B-Y86

ADAPTER

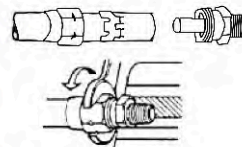


ABS Thread Size	Male Pipe Thread	No.
3/8	1/4	1390x6
3/8	3/8	1390x6x6
3/8	1/2	1390x6x8
1/2	3/8	1390x8
1/2	1/2	1390x8x8

SPRING GUARDS



Hose I.D.	No.
3/8	33806-C
1/2	33808-C



INSERT



Hose I.D.	Male Pipe Size	No.
3/8	1/4	1391x6
3/8	3/8	1391x6x6
3/8	1/2	1391x6x8
1/2	3/8	1391x8
1/2	1/2	1391x8x8

SLEEVE



Hose I.D.	No.
3/8	33806-A
1/2	33808-A

NUT



Hose I.D.	No.
3/8	33806-B
1/2	33808-B

NUT FOR SPRING GUARD



Hose I.D.	No.
3/8	33806-D
1/2	33808-D

FITTINGS

BRASS



Inverted Flare

Typical Application: Hydraulic brake, power steering, fuel lines, transmission cooler lines, LP and natural gas.

Pressure Range: Up to 2000 P.S.I. depending on tube size.

Vibration Rating: Excellent resistance.

Sealing Method: 2-Piece Flare.

Temperature Range: -65°F to +250°F range at maximum operating pressure.

Material: CA360 Brass

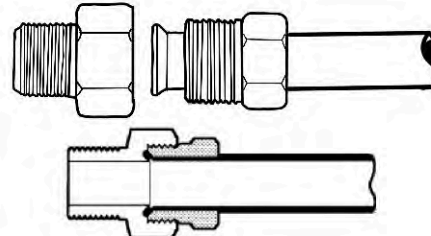
Used With: Copper, brass, aluminum and steel hydraulic tubing that can be flared.

MALE CONNECTOR

(Ref. SAE No. 040102)



Tube O.D.	Male Pipe Thread	No.
1/8	1/8	202x2
3/16	1/8	202x3
1/4	1/8	202x4
1/4	1/4	202x4x4
5/16	1/8	202x5
5/16	1/4	202x5x4
3/8	1/8	202x6x2
3/8	1/4	202x6
3/8	3/8	202x6x6
1/2	1/4	202x8x4
1/2	3/8	202x8
3/4	3/4	202x12



FEMALE CONNECTOR

(Ref. SAE No. 040103)



Tube O.D.	Female Pipe Thread	No.
3/16	1/8	252x3
5/16	1/8	252x5

Tube O.D.	1/8	3/16	1/4	5/16	3/8	7/16
Thread Size	5/16-28	3/8-24	7/16-24	1/2-20	5/8-18	11/16-18
Tube O.D.	1/2	5/8	3/4	7/8	1	
Thread Size	3/4-18	7/8-18	1-1/16-16	1-3/16-16	1-5/16-16	

45° MALE ELBOW

(Ref. SAE No. 040302)



Tube O.D.	Male Pipe Thread	No.
3/16	1/8	352x3
1/4	1/8	352x4
5/16	1/8	352x5
5/16	1/4	352x5x4
3/8	1/4	352x6

TUBE NUT

(Ref. SAE No. 040110)



Tube O.D.	No. Steel	No. Brass
1/8	105x2	
3/16	105x3	100x3
1/4	105x4	100x4
5/16	105x5	100x5
3/8	105x6	100x6
1/2	105x8	

UNION TEE

(Ref. SAE No. 040401)



Tube O.D.	No.
3/16	702x3

LONG TUBE NUT

(Steel)



Tube O.D.	No. Brass
3/16	7896x3
1/4	7896x4

PLUG

(Steel)
(Ref. SAE No. 040109)



Tube O.D.	No.
3/16	131x3
1/4	131x4
5/16	131x5
3/8	131x6

UNION

(Ref. SAE No. 040101)



Tube O.D.	No. Brass
1/8	302x2
3/16	302x3
1/4	302x4
5/16	302x5
3/8	302x6
1/2	302x8

MALE ELBOW

(Ref. SAE No. 040202)



Tube O.D.	Male Pipe Thread	No.
3/16	1/8	402x3
1/4	1/8	402x4
1/4	1/4	402x4x4
5/16	1/8	402x5
5/16	1/4	402x5x4
3/8	1/8	402x6x2
3/8	1/4	402x6
3/8	3/8	402x6x6
1/2	3/8	402x8
1/2	1/2	402x8x8

FEMALE BRANCH TEE

(Ref. SAE No. 040427)



Tube O.D.	Female Pipe Thread	No. Brass
3/16	1/8	652x3

SAE 45° Flare

UNION ELBOW

(Ref. SAE No. 010201)



Tube O.D.	No.
1/4	55x4
5/16	55x5
3/8	55x6
1/2	55x8
5/8	55x10

MALE ELBOW

(Ref. SAE No. 010202)



Tube O.D.	Male Pipe Thread	No.
1/8	1/8	49x2
3/16	1/8	49x3
1/4	1/8	49x4
1/4	1/4	49x4x4
1/4	3/8	49x4x6
5/16	1/8	49x5
5/16	1/4	49x5x4
5/16	3/8	49x5x6
3/8	1/8	49x6x2
3/8	1/4	49x6
3/8	3/8	49x6x6
3/8	1/2	49x6x8
1/2	1/4	49x8x4
1/2	3/8	49x8
1/2	1/2	49x8x8
5/8	3/8	49x10x6
5/8	1/2	49x10
5/8	3/4	49x10x12
3/4	1/2	49x12
3/4	3/4	49x12x12

FEMALE ELBOW

(Ref. SAE No. 010203)



Tube O.D.	Female Pipe Thread	No.
1/4	1/8	50x4
1/4	1/4	50x4x4

90° ELBOW 45° FEMALE SWIVEL TO SAE 45°

(Steel)



Tube O.D.	No.
1/2	9151x8x8

UNION TEE

(Ref. SAE No. 010401)



Tube O.D.	No.
1/4	44x4
5/16	44x5
3/8	44x6
1/2	44x8
5/8	44x10

MALE RUN TEE

(Ref. SAE No. 010424)



Tube O.D.	Male Pipe Thread	No.
1/4	1/8	51x4

MALE BRANCH TEE

(Ref. SAE No. 010425)



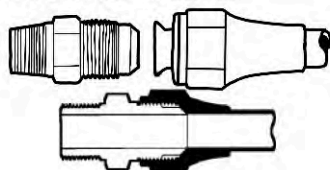
Tube O.D.	Male Pipe Thread	No.
1/4	1/8	45x4
1/4	1/4	45x4x4x4
3/8	1/4	45x6

FITTINGS

BRASS



SAE 45° Flare



Tube Size	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4
Thread Size	5/16-24	3/8-24	7/16-20	1/2-20	5/8-18	11/16-16	3/4-16	7/8-14	1-1/16-14



CAP



Tube O.D.	Thread Size	No.
3/16	3/8-24	90-703
1/4	7/16-20	90-704
5/16	1/2-20	90-705
3/8	5/8-18	90-706
1/2	3/4-16	90-708
5/8	7/8-14	90-710
3/4	1-1/16-14	90-712

PLUG



Tube O.D.	Thread Size	No.
3/16	3/8-24	90-803
1/4	7/16-20	90-804
5/16	1/2-20	90-805
3/8	5/8-18	90-806
1/2	3/4-16	90-808
5/8	7/8-14	90-810
3/4	1-1/16-14	90-812

NUT

(Ref. SAE No. 010110)



Tube O.D.	No.
1/8	1110x2
3/16	1110x3
1/4	1110x4
5/16	1110x5
3/8	1110x6
1/2	1110x8
5/8	1110x10

LONG NUT

(Ref. SAE No. 010111)



Tube O.D.	No.
3/16	41x3
1/4	41x4
5/16	41x5
3/8	41x6
1/2	41x8
5/8	41x10

UNION

(Ref. SAE No. 010101)



Tube O.D.	No.
3/16	42x3
1/4	42x4
5/16	42x5
3/8	42x6
3/8x1/4	42x6x4
1/2	42x8
1/2x3/8	42x8x6
5/8	42x10
3/4	42x12

MALE CONNECTOR

(Ref. SAE No. 010102)



Tube O.D.	Male Pipe Thread	No.
1/8	1/8	48x2
3/16	1/8	48x3
1/4	1/8	48x4
1/4	1/4	48x4x4
1/4	3/8	48x4x6
5/16	1/8	48x5
5/16	1/4	48x5x4
5/16	3/8	48x5x6
3/8	1/8	48x6x2
3/8	1/4	48x6
3/8	3/8	48x6x6
3/8	1/2	48x6x8
1/2	1/4	48x8x4
1/2	3/8	48x8
1/2	1/2	48x8x8
1/2	3/4	48x8x12
5/8	3/8	48x10x6
5/8	1/2	48x10
5/8	3/4	48x10x12
3/4	1/2	48x12
3/4	3/4	48x12x12

FEMALE CONNECTOR

(Ref. SAE No. 010103)



Tube O.D.	Female Pipe Thread	No.
3/16	1/8	46x3
1/4	1/8	46x4
1/4	1/4	46x4x4
5/16	1/8	46x5
5/16	1/4	46x5x4
3/8	1/4	46x6
3/8	3/8	46x6x6
1/2	3/8	46x8
1/2	1/2	46x8x8
5/8	1/2	46x10

45° MALE ELBOW

(Ref. SAE No. 010302)



Tube O.D.	Male Pipe Thread	No.
1/4	1/8	54x4
1/4	1/4	54x4x4
5/16	1/8	54x5
5/16	1/4	54x5x4
3/8	1/4	54x6
3/8	3/8	54x6x6
1/2	3/8	54x8
1/2	1/2	54x8x8
5/8	1/2	54x10

FITTINGS

STEEL



SAE 37° (JIC) Flare Fittings

90° MALE PIPE TO JIC SWIVEL



Tube O.D.	Male Pipe Thread	No.
1/4	1/8	S5406x4
1/4	1/4	S5406x4x4
3/8	1/4	S5406x6
3/8	3/8	S5406x6x6
3/8	1/2	S5406x6x8
1/2	3/8	S5406x8
1/2	1/2	S5406x8x8
5/8	1/2	S5406x10
3/4	3/4	S5406x12
7/8	3/4	S5406x14
1"	1"	S5406x16

STRAIGHT THREAD O-RING 90° ELBOW (Ref. SAE No. 070220)



Tube O.D.	Port Size	No.
3/16	3/16	S5515x3*
1/4	1/4	S5515x4
1/4	5/16	S5515x4x5
1/4	3/8	S5515x4x6
5/16	1/4	S5515x5x4
5/16	5/16	S5515x5
5/16	3/8	S5515x5x6
3/8	1/4	S5515x6x4
3/8	5/16	S5515x6x5
3/8	3/8	S5515x6
3/8	1/2	S5515x6x8
3/8	5/8	S5515x6x10
1/2	3/8	S5515x8x6
1/2	1/2	S5515x8
1/2	5/8	S5515x8x10
1/2	3/4	S5515x8x12
5/8	1/2	S5515x10x8
5/8	5/8	S5515x10
5/8	3/4	S5515x10x12
3/4	1/2	S5515x12x8
3/4	5/8	S5515x12x10
3/4	3/4	S5515x12
3/4	1"	S5515x12x16
3/4	1-1/4	S5515x12x20
1"	3/4	S5515x16x12
1"	1"	S5515x16
1"	1-1/4	S5515x16x20
1-1/4	1"	S5515x20x16
1-1/4	1-1/4	S5515x20
1-1/2	1-1/4	S5515x24x20
1-1/2	1-1/2	S5515x24

* Forged - MS51527

UNION TEE

(Ref. SAE No. 070401)



* Forged - MS51510

Tube O.D.	No.
3/16	S5705x3*
1/4	S5705x4
5/16	S5705x5
3/8	S5705x6
1/2	S5705x8
5/8	S5705x10
3/4	S5705x12
1"	S5705x16
1-1/4	S5705x20

MALE RUN TEE

(Ref. SAE No. 070401)



Tube O.D.	Male Pipe Thread	No.
1/4	1/4	S5755x4x4
3/8	1/4	S5755x6
1/2	3/8	S5755x8
1/2	1/2	S5755x8x8
5/8	1/2	S5755x10

SWIVEL NUT RUN TEE

(Ref. SAE No. 070432)



Tube O.D.	No.
1/4	S5706x4
5/16	S5706x5
3/8	S5706x6
1/2	S5706x8
5/8	S5706x10
3/4	S5706x12
1"	S5706x16
1-1/4	S5706x20
1-1/2	S5706x24

STRAIGHT THREAD O-RING RUN TEE

(Ref. SAE No. 070428)



Tube O.D.	Port Size	No.
1/4	1/4	S5716x4
3/8	3/8	S5716x6
1/2	1/2	S5716x8
5/8	5/8	S5716x10
3/4	3/4	S5716x12
1"	1"	S5716x16
1-1/4	1-1/4	S5716x20
1-1/2	1-1/2	S5716x24

MALE BRANCH TEE

(Ref. SAE No. 070425)



Tube O.D.	Male Pipe Thread	No.
1/4	1/8	S5605x4
1/4	1/4	S5605x4x4
3/8	1/4	S5605x6
3/8	3/8	S5605x6x6
1/2	3/8	S5605x8
1/2	1/2	S5605x8x8
5/8	5/8	S5605x10
3/4	3/4	S5605x12
1"	1"	S5605x16

SWIVEL NUT BRANCH TEE

(Ref. SAE No. 070433)



Tube O.D.	No.
1/4	S5707x4
3/8	S5707x6
1/2	S5707x8
5/8	S5707x10
3/4	S5707x12
1"	S5707x16
1-1/4	S5707x20
1-1/2	S5707x24

BULKHEAD BRANCH TEE

(Ref. SAE No. 070959)



Tube O.D.	No.
3/8	S5725x6
1/2	S5725x8

STRAIGHT THREAD O-RING BRANCH TEE

(Ref. SAE No. 070959)



Tube O.D.	Port Size	No.
1/4	1/4	S5715x4
3/8	3/8	S5715x6
1/2	1/2	S5715x8

SAE 37° (JIC) Flare Fittings

BULKHEAD UNION ELBOW
(Ref. SAE No. 070701)



Tube O.D.	No.
3/8	S5525x6

90° MALE ELBOW LONG
(Ref. SAE No. 071502)



Tube O.D.	Male Pipe Thread	No.
1/4	1/8	S5425x4
1/4	1/4	S5425x4x4
3/8	1/4	S5425x6
1/2	3/8	S5425x8
5/8	1/2	S5425x10
3/4	3/4	S5425x12
1"	1"	S5425x16

90° MALE ELBOW EXTRA LONG
(Ref. SAE No. 071602)



Tube O.D.	Male Pipe Thread	No.
1/4	1/8	S5435x4
3/8	1/4	S5435x6

90° FEMALE ELBOW
(Ref. SAE No. 070203)



Tube O.D.	Female Pipe Thread	No.
1/4	1/8	S5455x4
1/4	1/4	S5455x4x4
3/8	1/8	S5455x6x2
3/8	1/4	S5455x6
3/8	3/8	S5455x6x6
1/2	1/2	S5455x8x8
3/4	3/4	S5455x12
1"	1"	S5455x16
1-1/4	1-1/4	S5455x20
1-1/2	1-1/2	S5455x24

SWIVEL NUT 90° ELBOW
(Ref. SAE No. 070221)



Tube O.D.	No.
1/4	S5506x4
5/16	S5506x5
3/8	S5506x6
1/2	S5506x8
5/8	S5506x10
3/4	S5506x12
1"	S5506x16
1-1/4	S5506x20
1-1/2	S5506x24

STRAIGHT THREAD O-RING 45° ELBOW
(Ref. SAE No. 070320)



Tube O.D.	Port Size	No.
1/4	1/4	S5365x4
5/16	5/16	S5365x5
3/8	3/8	S5365x6
1/2	1/2	S5365x8
1/2	5/8	S5365x8x10
5/8	5/8	S5365x10
3/4	5/8	S5365x1210
3/4	3/4	S5365x12
1"	1"	S5365x16

90° UNION ELBOW
(Ref. SAE No. 070201)



Tube O.D.	No.
1/4	S5505x4
5/16	S5505x5
3/8	S5505x6
1/2	S5505x8
5/8	S5505x10
3/4	S5505x12
1"	S5505x16

90° MALE ELBOW
(Ref. SAE No. 070202)



Tube O.D.	Male Pipe Thread	No.
1/8	1/8	S5405x2
3/16	1/8	S5405x3
1/4	1/8	S5405x4
1/4	1/4	S5405x4x4
1/4	3/8	S5405x4x6
1/4	1/2	S5405x4x8
5/16	1/8	S5405x5
5/16	1/4	S5405x5x4
3/8	1/8	S5405x6x2
3/8	1/4	S5405x6
3/8	3/8	S5405x6x6
3/8	1/2	S5405x6x8
1/2	1/4	S5405x8x4
1/2	3/8	S5405x8
1/2	1/2	S5405x8x8
1/2	3/4	S5405x8x12
5/8	3/8	S5405x10x6
5/8	1/2	S5405x10
5/8	3/4	S5405x1012
3/4	1/2	S5405x12x8
3/4	3/4	S5405x12
3/4	1"	S5405x1216
7/8	3/4	S5405x14
1"	3/4	S5405x1612
1"	1"	S5405x16
1"	1-1/4	S5405x1620
1"	1-1/2	S5405x1624
1-1/4	1"	S5405x2016
1-1/4	1-1/4	S5405x20
1-1/2	1-1/4	S5405x2420
1-1/2	1-1/2	S5405x24

FITTINGS

STEEL



SAE 37° (JIC) Flare Fittings

37° FEMALE SWIVEL TO MALE O-RING



Tube O.D.	Port Size	No.
1/4	1/4	S5216x4x4
3/8	3/8	S5216x6x6
3/8	1/2	S5216x6x8
1/2	1/2	S5216x8x8
5/8	5/8	S5216x1010
3/4	3/4	S5216x1212
1"	1"	S5216x1616

STRAIGHT THREAD O-RING CONNECTOR (Ref. SAE No. 070120) MS51525



Tube O.D.	Port Size	No.
1/8	1/8	S5315x2
3/16	3/16	S5315x3
1/4	1/4	S5315x4
1/4	5/16	S5315x4x5
1/4	3/8	S5315x4x6
1/4	1/2	S5315x4x8
5/16	1/4	S5315x5x4
5/16	5/16	S5315x5
5/16	3/8	S5315x5x6
3/8	1/4	S5315x6x4
3/8	5/16	S5315x6x5
3/8	3/8	S5315x6
3/8	1/2	S5315x6x8
3/8	5/8	S5315x6x10
3/8	3/4	S5315x6x12
1/2	3/8	S5315x8x6
1/2	1/2	S5315x8
1/2	5/8	S5315x8x10
1/2	3/4	S5315x8x12
1/2	1"	S5315x8x16
5/8	1/2	S5315x10x8
5/8	5/8	S5315x10
5/8	3/4	S5315x1012
3/4	1/2	S5315x12x8
3/4	5/8	S5315x1210
3/4	3/4	S5315x12
3/4	7/8	S5315x1214
3/4	1"	S5315x1216
3/4	1-1/4	S5315x1220
7/8	7/8	S5315x14
1"	3/4	S5315x1612
1"	1"	S5315x16
1"	1-1/4	S5315x1620
1-1/4	1"	S5315x2016
1-1/4	1-1/4	S5315x20
1-1/2	1-1/4	S5315x2420
1-1/2	1-1/2	S5315x24

MALE JIC 37° SAE TO FEMALE FOR-SEAL®



Female Tube O.D.	Male 37° Tube Size	No.
1/4	1/4	4213x4
3/8	3/8	4213x6
1/2	1/2	4213x8
5/8	5/8	4213x10
3/4	3/4	4213x12
1"	1"	4213x16

FEMALE CONNECTOR (Ref. SAE No. 070103) MS51503



Tube O.D.	Female Pipe Thread	No.
1/8	1/8	S5255x2
1/4	1/8	S5255x4
1/4	1/4	S5255x4x4
5/16	1/8	S5255x5
5/16	1/4	S5255x5x4
3/8	1/4	S5255x6
3/8	3/8	S5255x6x6
1/2	3/8	S5255x8
1/2	1/2	S5255x8x8
5/8	1/2	S5255x10
3/4	1/2	S5255x12x8
3/4	3/4	S5255x12
1"	1"	S5255x16
1-1/4	1-1/4	S5255x20
1-1/2	1-1/2	S5255x24

FEMALE 37° JIC SWIVEL TO FEMALE PIPE



Tube O.D.	Pipe Size	No.
1/4	1/4	S5256X4X4
3/8	3/8	S5256X6X6
1/2	1/2	S5256X8X8
3/4	3/4	S5256X12
1"	1"	S5256X16

45° MALE ELBOW (Ref. SAE No. 070302)



Tube O.D.	Male Pipe Thread	No.
1/8	1/8	S5355x2
3/16	1/8	S5355x3
1/4	1/8	S5355x4
1/4	1/4	S5355x4x4
1/4	3/8	S5355x4x6
5/16	1/8	S5355x5
5/16	1/4	S5355x5x4
3/8	1/8	S5355x6x2
3/8	1/4	S5355x6
3/8	3/8	S5355x6x6
3/8	1/2	S5355x6x8
1/2	1/4	S5355x8x4
1/2	3/8	S5355x8
1/2	1/2	S5355x8x8
5/8	3/8	S5355x10x6
5/8	1/2	S5355x10
3/4	1/2	S5355x12x8
3/4	3/4	S5355x12
7/8	3/4	S5355x14
1"	1"	S5355x16
1-1/4	1"	S5355x2016
1-1/4	1-1/4	S5355x20
1-1/2	1-1/2	S5355x24

SWIVEL NUT 45° ELBOW (Ref. SAE No. 070321)



Tube O.D.	No.
1/4	S5356x4
5/16	S5356x5
3/8	S5356x6
1/2	S5356x8
5/8	S5356x10
3/4	S5356x12
1"	S5356x16
1-1/4	S5356x20

JIC SWIVEL UNION



Tube O.D.	No.
1/4	9101x4x4
3/8	9101x6x6
1/2	9101x8x8
5/8	9101x10x10
3/4	9101x12x12
1"	9101x16x16
1-1/4	9101x20x20
1-1/2	9101x24x24

SMALL HEX UNION

(Ref. SAE No. 070101)
MS51501



Tube O.D.	Tube O.D.	No.
3/16	3/16	S5305x3
1/4	1/4	S5305x4
5/16	5/16	S5305x5
3/8	1/4	S5305x6x4
3/8	5/16	S5305x6x5
3/8	3/8	S5305x6
1/2	1/4	S5305x8x4
1/2	3/8	S5305x8x6
1/2	1/2	S5305x8
5/8	1/2	S5305x10x8
5/8	5/8	S5305x10
3/4	1/2	S5305x12x8
3/4	5/8	S5305x12x10
3/4	3/4	S5305x12
7/8	7/8	S5305x14
1"	3/4	S5305x16x12
1"	1"	S5305x16
1-1/4	1-1/4	S5305x20
1-1/2	1-1/2	S5305x24
2"	2"	S5305x32

LARGE HEX UNION

(Ref. SAE No. 070119)
MS51519



Tube O.D.	Tube O.D.	No.
1/4	1/4	S5306x4
3/8	3/8	S5306x6
1/2	1/2	S5306x8
5/8	5/8	S5306x10
3/4	3/4	S5306x12

BULKHEAD UNION

(Ref. SAE No. 070601)
MS51520



Tube O.D.	No.
3/16	S5325x3
1/4	S5325x4
5/16	S5325x5
3/8	S5325x6
1/2	S5325x8
5/8	S5325x10
3/4	S5325x12
7/8	S5325x14
1"	S5325x16

BULKHEAD UNION ASSEMBLIES



Tube O.D.	No.
1/4	S5700x4
3/8	S5700x6
1/2	S5700x8
5/8	S5700x10
3/4	S5700x12
1"	S5700x16

NOTE: Assembly includes fitting and nut.

SAE 37° (JIC) Flare Fittings

MALE SAE 37° JIC TO FEMALE PIPE 45° ELBOW



Tube O.D.	Female Pipe Thread	No.
1/4	1/4	S5357x4x4
3/8	3/8	S5357x6x6
1/2	1/2	S5357x8x8
3/4	3/4	S5357x12x12
1"	1"	S5357x16x16

MALE CONNECTOR

(Ref. SAE No. 070102)



Tube O.D.	Male Pipe Thread	No.
1/8	1/8	S5205x2
3/16	1/8	S5205x3
1/4	1/8	S5205x4
1/4	1/4	S5205x4x4
1/4	3/8	S5205x4x6
1/4	1/2	S5205x4x8
5/16	1/8	S5205x5
5/16	1/4	S5205x5x4
5/16	3/8	S5205x5x6
3/8	1/8	S5205x6x2
3/8	1/4	S5205x6
3/8	3/8	S5205x6x6
3/8	1/2	S5205x6x8
3/8	3/4	S5205x6x12
1/2	1/4	S5205x8x4
1/2	3/8	S5205x8
1/2	1/2	S5205x8x8
1/2	3/4	S5205x8x12
5/8	3/8	S5205x10x6
5/8	1/2	S5205x10
5/8	3/4	S5205x10x12
3/4	1/2	S5205x12x8
3/4	3/4	S5205x12
3/4	1"	S5205x12x16
7/8	3/4	S5205x14
1"	3/4	S5205x16x12
1"	1"	S5205x16
1"	1-1/4	S5205x16x20
1-1/4	1"	S5205x20x16
1-1/4	1-1/4	S5205x20
1-1/2	1-1/4	S5205x24x20
1-1/2	1-1/2	S5205x24
2"	2"	S5205x32

FEMALE SWIVEL UNION



Tube O.D.	Tube O.D.	No.
1/4	1/4	9705x4
3/8	3/8	9705x6
1/2	1/2	9705x8
3/4	3/4	9705x12
1"	1"	9705x16

FITTINGS

STEEL



SAE 37° (JIC) Flare Fittings

SLEEVE 3 PIECE

(Ref. SAE No. 070115)
MS51533



Tube O.D.	No.
1/4	S5165x4
3/8	S5165x6
1/2	S5165x8
3/4	S5165x12
1"	S5165x16

NUT 3 PIECE

(Ref. SAE No. 070110)
MS51531



Tube O.D.	No.
1/8	S5105x2
3/16	S5105x3
1/4	S5105x4
5/16	S5105x5
3/8	S5105x6
1/2	S5105x8
5/8	S5105x10
3/4	S5105x12
7/8	S5105x14
1"	S5105x16
1-1/4	S5105x20

BULKHEAD NUT

(Ref. SAE No. 070118)
MS51860



Tube O.D.	No.
1/4	S5924x4
3/8	S5924x6
1/2	S5924x8
5/8	S5924x10
3/4	S5924x12
1"	S5924x16
1-1/4	S5924x20

CAP

(Ref. SAE No. 070112)
MS51532



Tube O.D.	No.
1/8	S5129x2
3/16	S5129x3
1/4	S5129x4
5/16	S5129x5
3/8	S5129x6
1/2	S5129x8
5/8	S5129x10
3/4	S5129x12
7/8	S5129x14
1"	S5129x16
1-1/4	S5129x20
1-1/2	S5129x24
2"	S5129x32

PLUG

(Ref. SAE No. 070109)
MS51518



Tube O.D.	No.
3/16	S5229x3
1/4	S5229x4
5/16	S5229x5
3/8	S5229x6
1/2	S5229x8
5/8	S5229x10
3/4	S5229x12
7/8	S5229x14
1"	S5229x16
1-1/4	S5229x20
1-1/2	S5229x24
2"	S5229x32

Typical Application: Hydraulic, instrumentation and chemical processing systems.

Pressure: Up to 10,000 P.S.I. depending on tube and fitting size.

Vibration Rating: Good resistance. Vibration resistance decreases with increase in tube size. Use two piece design when greater vibration resistance is required.

Temperature Range: -65°F to +400°F.

Material: Carbon Steel - AISI/SAE 12L14.

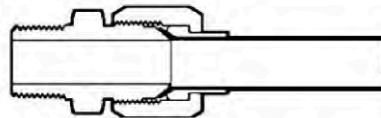
Plating: Zinc, yellow dichromate finish.

Used With: Copper, brass, steel, aluminum and other tubing that can be flared.

Advantages: Zinc plate. Choice of 2 or 3 piece design.

Broad selection of styles and sizes. Interchangeable with all sources.

Conformance: Meets ASA, ASME, SAE and MS specifications and standards.



Tube O.D.	1/8	3/16	1/4	5/16	3/8	1/2	5/8
Thread	5/16-24	3/8-24	7/16-20	1/2-20	9/16-18	3/4-16	7/8-14
Tube O.D.	3/4	7/8	1"	1-1/4	1-1/2	2"	
Thread	1 1/16-12	1 3/16-12	1 5/16-12	1 5/8-12	1 7/8-12	2 1/2-12	



REDUCER

(Ref. SAE No. 070123)
MS51534



Tube Reduction		No.	No.
		Two Piece	One Piece
3/8	1/4	S5015x6x4	S5016x6x4
1/2	1/4	S5015x8x4	S5016x8x4
1/2	3/8	S5015x8x6	S5016x8x6
5/8	1/4	-	S5016x10x4
5/8	3/8	-	S5016x10x6
5/8	1/2	-	S5016x10x8
3/4	1/4	S5015x12x4	S5016x12x4
3/4	3/8	S5015x12x6	S5016x12x6
3/4	1/2	S5015x12x8	S5016x12x8
3/4	5/8	-	S5016x12x10
1"	5/8	S5015x16x10	S5016x16x10
1"	3/4	S5015x16x12	S5016x16x12
1-1/4	3/4	S5015x20x12	S5016x20x12
1-1/4	1"	S5015x20x16	S5016x20x16



FITTINGS

STEEL

90° ELBOW 45° FEMALE SWIVEL TO SAE 45° (STEEL)



Tube O.D.	45° Flare Thread	No.
1/2	3/4-16	9151x8x8

MALE STRAIGHT THREAD TO FEMALE PIPE SWIVEL 90° ELBOW (Ref. SAE No. 140257)



Straight Thread	NPSM Swivel Nut	No.
7/16-20	1/4-18	9515x4x4
7/16-20	3/8-18	9515x4x6
9/16-18	1/4-18	9515x6x4
9/16-18	3/8-18	9515x6x6
9/16-18	1/2-14	9515x6x8
3/4-16	3/8-18	9515x8x6
3/4-16	1/2-14	9515x8x8
3/4-16	3/4-14	9515x8x12
7/8-14	1/2-14	9515x10x8
7/8-14	3/4-14	9515x10x12
1 1/16-12	3/4-14	9515x12x12
1 5/16-12	3/4-14	9515x16x12
1 5/16-12	1-11 1/2	9515x16x16
1 5/16-12	1 1/4-11 1/2	9515x16x20
1 5/8-12	3/4-14	9515x20x12
1 5/8-12	1 1/4-11 1/2	9515x20x20

FEMALE PIPE SWIVEL TEE



NPSM Swivel	No.
3/8-18	9705x6x6x6
1/2-14	9705x8x8x8
3/4-16	9705x12x12

FEMALE PIPE SWIVEL TO MALE PIPE 90° ELBOW (Ref. SAE No. 140320)



NPSM Swivel Nut	Male Pipe Thread	No.
1/8-27	1/8-27	9405x2x2
1/8-27	1/4-18	9405x2x4
1/4-18	1/8-27	9405x4x2
1/4-18	1/4-18	9405x4x4
1/4-18	3/8-18	9405x4x6
1/4-18	1/2-14	9405x4x8
3/8-18	1/4-18	9405x6x4
3/8-18	3/8-18	9405x6x6
3/8-18	1/2-14	9405x6x8
1/2-14	3/8-18	9405x8x6
1/2-14	1/2-14	9405x8x8
1/2-14	3/4-14	9405x8x12
3/4-14	1/2-14	9405x12x8
3/4-14	3/4-14	9405x12x12
3/4-14	1-11 1/2	9405x12x16
1-11 1/2	3/4-14	9405x16x12
1-11 1/2	1-11 1/2	9405x16x16
1 1/4-11 1/2	1 1/4-11 1/2	9405x20x20
1 1/2-11 1/2	1 1/2-11 1/2	9405x24x24

Swivel Adapters

FEMALE PIPE SWIVEL TO FEMALE PIPE 90° ELBOW (Ref. SAE No. 140231)



NPSM Swivel Nut	Female Pipe Thread	No.
1/8-27	1/8-27	9455x2x2
1/4-18	1/4-18	9455x4x4
3/8-18	3/8-18	9455x6x6
3/8-18	1/2-14	9455x6x8
1/2-14	1/2-14	9455x8x8
3/4-14	3/4-14	9455x12x12
1-11 1/2	1-11 1/2	9455x16x16

45° SWIVEL ELBOW FEMALE PIPE SWIVEL TO FEMALE PIPE (Ref. SAE No. 140331)



NPSM Swivel Nut	Female Pipe Thread	No.
1/8-27	1/8-27	9385x2x2
1/4-18	1/4-18	9385x4x4
3/8-18	3/8-18	9385x6x6
1/2-14	1/2-14	9385x8x8

FEMALE PIPE SWIVEL TO FEMALE PIPE BRANCH TEE



NPSM Swivel Nut	Female Pipe Thread	No.
3/8-18	3/8-18	9456x6x6x6
1/2-14	1/2-14	9456x8x8x8
3/4-14	3/4-14	9456x12x12

FITTINGS

STEEL



Pipe Swivel Adapters

Typical Application: Pressure hydraulic systems.
Pressure: Up to 10,000 P.S.I. depending on size.
Sealing Method: Metal to metal, 30° cone - NPSM
 (National Pipe Straight Mechanical) on swivel end.
Material: Carbon steel - AISI/SAE 12L14.
Plating: Zinc.

FEMALE PIPE SWIVEL TO MALE PIPE (Ref. SAE No. 140130)



NPSM Swivel Nut	Male Pipe Thread	No.
1/8-27	1/8-27	9205x2x2
1/8-27	1/4-18	9205x2x4
1/4-18	1/8-27	9205x4x2
1/4-18	1/4-18	9205x4x4
1/4-18	3/8-18	9205x4x6
3/8-18	1/4-18	9205x6x4
3/8-18	3/8-18	9205x6x6
3/8-18	1/2-14	9205x6x8
1/2-14	3/8-18	9205x8x6
1/2-14	1/2-14	9205x8x8
1/2-14	3/4-14	9205x8x12
3/4-14	1/2-14	9205x12x8
3/4-14	3/4-14	9205x12x12
3/4-14	1-11½	9205x12x16
1-11½	3/4-14	9205x16x12
1-11½	1-11½	9205x16x16
1¼-11½	1¼-11½	9205x20x20
1½-11½	1½-11½	9205x24x24

FEMALE 37° (JIC) SWIVEL TO MALE PIPE ADAPTER



Tube O.D.	Male Pipe Thread	No.
1/4	1/4	9100x4x4
5/16	1/4	9100x5x4
3/8	1/4	9100x6x4
3/8	3/8	9100x6x6
1/2	3/8	9100x8x6
1/2	1/2	9100x8x8
5/8	3/8	9100x10x6
5/8	1/2	9100x10x8
3/4	1/2	9100x12x8
3/4	3/4	9100x12x12
1"	3/4	9100x16x12
1"	1"	9100x16x16
1-1/4	1-1/4	9100x20x20

FEMALE PIPE SWIVEL TO FEMALE PIPE (Ref. SAE No. 140131)



NPSM Swivel Nut	Female Pipe Thread	No.
1/8-27	1/8-27	9255x2x2
1/4-18	1/4-18	9255x4x4
3/8-18	3/8-18	9255x6x6
1/2-14	1/2-14	9255x8x8
3/4-14	3/4-14	9255x12x12
1-11½	1-11½	9255x16x16
1¼-11½	1¼-11½	9255x20x20

MALE STRAIGHT THREAD O-RING TO FEMALE PIPE SWIVEL (Ref. SAE No. 140157)



Straight Thread	NPSM Swivel Nut	No.
7/16-20	1/4-18	9315x4x4
7/16-20	3/8-18	9315x4x6
1/2-20	1/4-18	9315x5x4
9/16-18	1/4-18	9315x6x4
9/16-18	3/8-18	9315x6x6
9/16-18	1/2-14	9315x6x8
3/4-16	1/4-18	9315x8x4
3/4-16	3/8-18	9315x8x6
3/4-16	1/2-14	9315x8x8
3/4-16	3/4-14	9315x8x12
7/8-14	3/8-18	9315x10x6
7/8-14	1/2-14	9315x10x8
7/8-14	3/4-14	9315x10x12
1 1/16-12	1/2-14	9315x12x8
1 1/16-12	3/4-14	9315x12x12
1 5/16-12	3/4-14	9315x16x12
1 5/16-12	1-11½	9315x16x16
1 5/16-12	1¼-11½	9315x16x20

FEMALE PIPE SWIVEL TO MALE PIPE 45° ELBOW (Ref. SAE No. 140330)



NPSM Swivel Nut	Male Pipe Thread	No.
1/8-27	1/8-27	9355x2x2
1/4-18	1/4-18	9355x4x4
3/8-18	3/8-18	9355x6x6
3/8-18	1/2-14	9355x6x8
1/2-14	3/8-18	9355x8x6
1/2-14	1/2-14	9355x8x8
1/2-14	3/4-14	9355x8x12
3/4-14	1/2-14	9355x12x8
3/4-14	3/4-14	9355x12x12
3/4-14	1-11½	9355x12x16
1-11½	1-11½	9355x16x16
1¼-11½	1¼-11½	9355x20x20

MALE STRAIGHT THREAD TO FEMALE PIPE SWIVEL 45° ELBOW (Ref. SAE No. 140357)



Straight Thread	NPSM Swivel Nut	No.
7/16-20	1/4-18	9365x4x4
9/16-18	3/8-18	9365x6x6
9/16-18	1/2-14	9365x6x8
3/4-16	1/2-14	9365x8x8
7/8-14	1/2-14	9365x10x8
1 1/16-12	3/4-14	9365x12x12



FITTINGS

STEEL

90° MALE ELBOW



Male Pipe Thread	Male Pipe Thread	No.
1/4	1/4	3529x4
3/8	3/8	3529x6
1/2	1/2	3529x8
3/4	3/4	3529x12

TEE

(Ref. SAE No. 140438)



Female Pipe Thread	No.
1/8	3709x2
1/4	3709x4
3/8	3709x6
1/2	3709x8
3/4	3709x12
1"	3709x16
1-1/4	3709x20
1-1/2	3709x24
2"	3709x32

CROSS



Female Pipe Thread	No.
1/8	3959x2
1/4	3959x4
3/8	3959x6
1/2	3959x8
3/4	3959x12
1	3959x16
1-1/4	3959x20
1-1/2	3959x24

Pipe

MALE BRANCH TEE

(Ref. SAE No. 140425)



Male Pipe Thread	Female Pipe Thread	No.
1/8	1/8	3609x2
1/4	1/4	3609x4
3/8	3/8	3609x6
1/2	1/2	3609x8
3/4	3/4	3609x12
1"	1"	3609x16
1-1/4	1-1/4	3609x20
1-1/2	1-1/2	3609x24

MALE RUN TEE

(Ref. SAE No. 140424)



Male Pipe Thread	Female Pipe Thread	No.
1/8	1/8	3759x2
1/4	1/4	3759x4
3/8	3/8	3759x6
1/2	1/2	3759x8
3/4	3/4	3759x12
1"	1"	3759x16
1-1/4	1-1/4	3759x20
1-1/2	1-1/2	3759x24

BULKHEAD COUPLING (Steel)



Female Pipe Thread	No.	Thread Size B	I	L
1/4	W05465	3/4-16	1.25	1.50
1/4	W21204	3/4-16	0.69	0.94
3/8	W17709	1-14	1.06	1.31

BULKHEAD COUPLING (Steel)

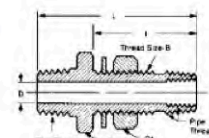
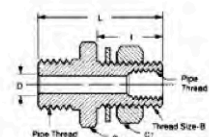
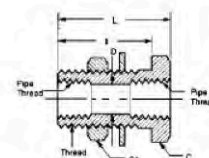


Male Pipe Thread	Female Pipe Thread	No.	Thread Size B	I	L
1/2	1/4	W05498	3/4-16	1.13	2.16
1/2	1/4	W05499	3/4-16	1.53	2.53

BULKHEAD COUPLING (Steel)



Male Pipe Thread	Female Pipe Thread	No.	Thread Size B	I	L
1/2	1/4	W05730	1-14	1.88	2.94



NOTE: Bulkheads are also available in brass. See page 55-5.

FITTINGS

STEEL



Pipe

FEMALE STRAIGHT THREAD O-RING TO MALE PIPE ADAPTER



Female Port Size	Male Pipe Thread	No.
3/8	3/8	3239x6x6
3/8	1/2	3239x6x8
1/2	3/8	3239x8x6
1/2	1/2	3239x8x8
5/8	1/2	3239x10x8

COUPLING

(Ref. SAE No. 140138)



Female Pipe Thread	Female Pipe Thread	No.
1/8	1/8	3309x2
1/4	1/8	3309x4x2
1/4	1/4	3309x4
3/8	1/4	3309x6x4
3/8	3/8	3309x6
1/2	1/4	3309x8x4
1/2	3/8	3309x8x6
1/2	1/2	3309x8
3/4	1/2	3309x12x8
3/4	3/4	3309x12
1"	1"	3309x16
1-1/4	1-1/4	3309x20
1-1/2	1-1/2	3309x24
2"	2"	3309x32

HEX NIPPLE

(Ref. SAE No. 140137)



Male Pipe Thread	Male Pipe Thread	No.
1/8	1/8	3069x2
1/4	1/8	3069x4x2
1/4	1/4	3069x4
3/8	1/8	3069x6x2
3/8	1/4	3069x6x4
3/8	3/8	3069x6
1/2	1/4	3069x8x4
1/2	3/8	3069x8x6
1/2	1/2	3069x8
3/4	1/2	3069x12x8
3/4	3/4	3069x12
1"	3/4	3069x16x12
1"	1"	3069x16
1-1/4	1-1/4	3069x20
1-1/2	1-1/2	3069x24

MALE STRAIGHT THREAD O-RING TO MALE PIPE ADAPTER



Male Port Size	Male Pipe Size	No.
1/4	1/8	3249x4x2
3/8	1/4	3249x6x4
3/8	3/8	3249x6x6
1/2	3/8	3249x8x6
1/2	1/2	3249x8x8
5/8	1/2	3249x10x8
3/4	3/4	3249x12x12
1"	1"	3249x16x16

45° ELBOW

(Ref. SAE No. 140338)



* Forged.

Female Pipe Thread	No.
1/4	3559x4
3/8	3559x6
1/2	3559x8
3/4	3559x12*

45° STREET ELBOW

(Ref. SAE No. 140339)



* Forged.

90° ELBOW

(Ref. SAE No. 140238)



Male Pipe Thread	Female Pipe Thread	No.
1/8	1/8	3359x2*
1/4	1/4	3359x4
3/8	3/8	3359x6
1/2	1/2	3359x8
3/4	3/4	3359x12
1"	1"	3359x16
1-1/4	1-1/4	3359x20
1-1/2	1-1/2	3359x24
2"	2"	3359x32

90° STREET ELBOW

(Ref. SAE No. 140239)



Male Pipe Thread	Female Pipe Thread	No.
1/8	1/8	3409x2
1/8	1/4	3409x2x4
1/4	1/8	3409x4x2
1/4	1/4	3409x4
3/8	3/8	3409x6
1/2	3/8	3409x8x6
1/2	1/2	3409x8
1/2	3/4	3409x8x12
3/4	3/4	3409x12
3/4	1"	3409x12x16
1"	1"	3409x16
1-1/4	1-1/4	3409x20
1-1/2	1-1/2	3409x24
2"	2"	3409x32

90° STRAIGHT THREAD O-RING MALE ELBOW



Male Port Size	Female Pipe Thread	No.
1/4	1/8	3459x4
5/16	1/8	3459x5
5/8	1/2	3459x10

90° STRAIGHT THREAD O-RING MALE ELBOW TO MALE PIPE



Male Port Size	Male Pipe Thread	No.
1/4	1/8	3569x4
3/8	1/4	3569x6
1/2	3/8	3569x8
1/2	1/2	3569x8x8
5/8	1/2	3569x10
3/4	3/4	3569x12



FITTINGS

STEEL

Typical Application: Grease, instrumentation and most hydraulic systems.

Pressure: Up to 3000 P.S.I. depending on pipe size.

Vibration Rating: Fair resistance.

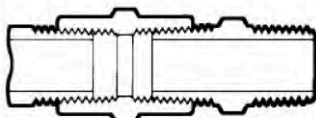
Temperature Range: -65°F to +400°F.

Material: Carbon Steel - AISI/SAE 12L14

Used With: Brass, bronze and iron pipe.

Advantages: Dryseal pipe threads (NPTF), zinc plate, compact size, broad selection of styles and sizes.

Conformance: Meets SAE specifications.



Pipe Size	1/16	1/8	1/4	3/8	1/2	3/4	1"	1-1/4	1-1/2	2"
Thread Size	1/16-27	1/8-27	1/4-18	3/8-18	1/2-14	3/4-14	1-11 1/2	1 1/4-11 1/2	1 1/2-11 1/2	2-11 1/2



HEX SOCKET PLUG



Male Pipe Thread	No.
1/16	3169x1
1/8	3169x2
1/4	3169x4

SQUARE HEAD PLUG



Male Pipe Thread	No.
1/8	3179x2
1/4	3179x4
3/8	3179x6
1/2	3179x8
3/4	3179x12
1"	3179x16

HEX HEAD PLUG



Male Pipe Thread	No.
1/8	3159x2
1/4	3159x4
3/8	3159x6
1/2	3159x8
3/4	3159x12
1"	3159x16
1-1/4	3159x20
1-1/2	3159x24
2"	3159x32

HEX PIPE CAP



Male Pipe Thread	No.
1/4	3279x4
3/8	3279x6
1/2	3279x8
3/4	3279x12
1	3279x16

BUSHING

(Ref. SAE No. 140140)



Male Pipe Thread	Female Pipe Thread	No.
1/4	1/8	3109x4x2
3/8	1/8	3109x6x2
3/8	1/4	3109x6x4
1/2	1/8	3109x8x2
1/2	1/4	3109x8x4
1/2	3/8	3109x8x6
3/4	1/4	3109x12x4
3/4	3/8	3109x12x6
3/4	1/2	3109x12x8
1"	3/8	3109x16x6
1"	1/2	3109x16x8
1"	3/4	3109x16x12
1-1/4	1/2	3109x20x8
1-1/4	3/4	3109x20x12
1-1/4	1"	3109x20x16
1-1/2	3/4	3109x24x12
1-1/2	1"	3109x24x16
1-1/2	1-1/4	3109x24x20
2"	1-1/4	3109x32x20
2"	1-1/2	3109x32x24

STRAIGHT THREAD O-RING TO FEMALE PIPE ADAPTER



Male Port Size	Female Pipe Thread	No.
1/4	1/8	3269x4x2
1/4	1/4	3269x4x4
5/16	1/8	3269x5x2
3/8	1/4	3269x6x4
3/8	3/8	3269x6x6
3/8	1/2	3269x6x8
1/2	1/4	3269x8x4
1/2	3/8	3269x8x6
1/2	1/2	3269x8x8
5/8	1/4	3269x10x4
5/8	3/8	3269x10x6
5/8	1/2	3269x10x8
5/8	3/4	3269x10x12
3/4	1/2	3269x12x8
3/4	3/4	3269x12x12
7/8	3/4	3269x14x12
1"	1/2	3269x16x8
1"	3/4	3269x16x12
1"	1"	3269x16x16
1-1/4	1"	3269x20x16
1-1/4	1-1/4	3269x20x20

ADAPTER

(Ref. SAE No. 140139)



Female Pipe Thread	Male Pipe Thread	No.
1/4	1/8	3209x4x2
3/8	1/4	3209x6x4
1/2	1/8	3209x8x2
1/2	1/4	3209x8x4
1/2	3/8	3209x8x6
3/4	1/4	3209x12x4
3/4	1/2	3209x12x8
1"	1/2	3209x16x8
1"	3/4	3209x16x12

FITTINGS

STEEL



Straight Thread O-Ring Fittings

STRAIGHT THREAD O-RING HEX SOCKET PLUG



NOTE:
Parts furnished with zinc plating.

STRAIGHT THREAD O-RING HEX HEAD PLUG



NOTE:
Parts furnished with zinc plating.

MALE STRAIGHT THREAD/ FEMALE STRAIGHT THREAD O-RING BOSS



Port Size	No.
1/8	7238x2
3/16	7238x3
1/4	7238x4
5/16	7238x5
3/8	7238x6
1/2	7238x8
5/8	7238x10

Port Size	No.
1/8	7237x2
3/16	7237x3
1/4	7237x4
5/16	7237x5
3/8	7237x6
1/2	7237x8
5/8	7237x10
3/4	7237x12
1"	7237x16
1-1/4	7237x20
1-1/2	7237x24

Male Port Size	Female Port Size	No.
1/4	3/8	7033x4x6
3/8	1/4	7033x6x4
1/2	3/8	7033x8x6
1/2	5/8	7033x8x10
5/8	1/2	7033x10x8
5/8	3/4	7033x10x12
3/4	1/2	7033x12x8
3/4	5/8	7033x12x10
3/4	1	7033x12x16
7/8	3/4	7033x14x12
1	1/2	7033x16x8
1	3/4	7033x16x12
1	1-1/4	7033x16x20
1-1/4	3/4	7033x20x12
1-1/4	1	7033x20x16
1-1/2	1-1/4	7033x24x20

O-RING / O-RING FEMALE UNION



Male Port Size	Female Port Size	No.
1/2	1/2	3259x8

MALE STRAIGHT THREAD O-RING TO MALE PIPE ADAPTER



Male Port Size	Male Pipe Size	No.
1/4	1/8	3249x4x2
3/8	1/4	3249x6x4
3/8	3/8	3249x6x6
1/2	3/8	3249x8x6
1/2	1/2	3249x8x8
5/8	1/2	3249x10x8
3/4	3/4	3249x12x12
1"	1"	3249x16x16

STRAIGHT THREAD O-RING TO FEMALE PIPE ADAPTER



Male Port Size	Female Pipe Thread	No.
1/4	1/8	C3269x4x2
1/4	1/4	C3269x4x4
5/16	1/8	C3269x5x2
3/8	1/4	C3269x6x4
3/8	3/8	C3269x6x6
3/8	1/2	C3269x6x8
1/2	1/4	C3269x8x4
1/2	3/8	C3269x8x6
1/2	1/2	C3269x8x8
5/8	1/4	C3269x10x4
5/8	3/8	C3269x10x6
5/8	1/2	C3269x10x8
5/8	3/4	C3269x10x12
3/4	1/2	C3269x12x8
3/4	3/4	C3269x12x12
7/8	3/4	C3269x14x12
1"	1/2	C3269x16x8
1"	3/4	C3269x16x12
1"	1"	C3269x16x16
1-1/4	1"	C3269x20x16
1-1/4	1-1/4	C3269x20x20

FOR-SEAL TO STRAIGHT THREAD O-RING CONNECTOR



Tube O.D.	Port Size	No.
1/4	1/4	4315x4
1/4	3/8	4315x4x6
3/8	1/4	4315x6x4
3/8	3/8	4315x6
3/8	1/2	4315x6x8
1/2	3/8	4315x8x6
1/2	1/2	4315x8
1/2	5/8	4315x8x10
1/2	3/4	4315x8x12
5/8	5/8	4315x10
3/4	3/4	4315x12
3/4	1"	4315x12x16
1"	1"	4315x16
1"	1-1/4	4315x16x20

STRAIGHT THREAD O-RING (Boss) 90 Durometer



Tube O.D.	No. Buna	Qty.	No. Viton
1/8	7629x2	25	7729x2
3/16	7629x3	25	7729x3
1/4	7629x4	25	7729x4
5/16	7629x5	25	7729x5
3/8	7629x6	25	7729x6
7/16	7629x7	25	7729x7
1/2	7629x8	25	7729x8
5/8	7629x10	10	7729x10
3/4	7629x12	10	7729x12
7/8	7629x14	10	7729x14
1"	7629x16	10	7729x16
1-1/4	7629x20	10	7729x20
1-1/2	7629x24	5	7729x24
2"	7629x32	5	7729x32

FITTINGS

STEEL



O-Ring Face Seal

O-RING FACE SEAL 90° MALE ELBOW



Tube O.D.	Male Pipe Thread	No.
1/4	1/8	4405x4
1/4	1/4	4405x4x4
1/4	3/8	4405x4x6
3/8	1/4	4405x6
3/8	3/8	4405x6x6
3/8	1/2	4405x6x8
1/2	3/8	4405x8
1/2	1/2	4405x8x8
5/8	1/2	4405x10
5/8	3/4	4405x10x12
3/4	1/2	4405x12x8
3/4	3/4	4405x12
3/4	1"	4405x12x16
1"	1"	4405x16
1"	1-1/4	4405x16x20

FEMALE PIPE THREAD SWIVEL TO O-RING FACE SEAL



Tube Size	Female Pipe Thread	No.
1/4	1/4	4256x4x4
3/8	1/4	4256x6
1/2	1/4	4256x8x4

PIPE THREAD SWIVEL TO O-RING FACE SEAL



Tube O.D.	Male Pipe Thread	No.
1/4	1/8	4100x4
1/4	1/4	4100x4x4
3/8	1/4	4100x6
3/8	3/8	4100x6x6
1/2	3/8	4100x8
1/2	1/2	4100x8x8
5/8	1/2	4100x10
3/4	3/4	4100x12
1"	1"	4100x16

TUBE END EXTENDER/EXPANDER



Female Tube O.D.	Male Tube O.D.	No.
1/4	1/4	4209x4
3/8	1/4	4209x6x4
3/8	3/8	4209x6
1/2	3/8	4209x8x6
1/2	1/2	4209x8
5/8	1/2	4209x10x8
3/4	5/8	4209x12x10
1"	3/4	4209x16x12

O-RING FACE SEAL TUBE END REDUCER



Female Tube O.D.	Male Tube O.D.	No.
3/8	1/4	4033x6x4*
1/2	1/4	4033x8x4
1/2	3/8	4033x8x6
5/8	1/4	4033x10x4
5/8	3/8	4033x10x6
5/8	1/2	4033x10x8
3/4	1/4	4033x12x4
3/4	1/2	4033x12x8
3/4	5/8	4033x12x10
1"	1/2	4033x16x8
1"	5/8	4033x16x10
1"	3/4	4033x16x12

*2 piece assembly

O-RING UNION TEE (Ref. SAE No. 520401)



Port Size	No.
1/4	4705x4
3/8	4705x6
1/2	4705x8
5/8	4705x10
3/4	4705x12
1"	4705x16

O-RING SWIVEL NUT RUN TEE (Ref. SAE No. 520432)



Tube O.D.	No.
1/4	4706x4
3/8	4706x6
1/2	4706x8
5/8	4706x10
3/4	4706x12
1"	4706x16

STRAIGHT THREAD RUN TEE (Ref. SAE No. 520428)



Tube Size	Port Size	No.
1/4	1/4	4716x4
3/8	3/8	4716x6
1/2	1/2	4716x8
5/8	5/8	4716x10
3/4	3/4	4716x12
1"	1"	4716x16

SWIVEL BRANCH TEE (Ref. SAE No. 520433)



Tube O.D.	No.
1/4	4707x4
3/8	4707x6
1/2	4707x8
5/8	4707x10
3/4	4707x12
1"	4707x16

O-Ring Face Seal

STRAIGHT THREAD O-RING CONNECTOR 45° ELBOW (Ref. SAE No. 520320)



Tube O.D.	Port Size	No.
1/4	1/4	4365x4
3/8	3/8	4365x6
1/2	1/2	4365x8
5/8	5/8	4365x10
3/4	3/4	4365x12
1"	1"	4365x16

45° SWIVEL ELBOW



Tube O.D.	No.
1/4	4356x4x4
3/8	4356x6x6
1/2	4356x8x8
5/8	4356x10x10
3/4	4356x12x12
1"	4356x16x16

UNION 90° ELBOW (Ref. SAE No. 520201)



Tube O.D.	No.
1/4	4505x4
3/8	4505x6
1/2	4505x8
5/8	4505x10
3/4	4505x12
1"	4505x16

STRAIGHT THREAD O-RING 90° ELBOW (Ref. SAE No. 520220)



Tube O.D.	Port Size	No.
1/4	1/4	4515x4
1/4	3/8	4515x4x6
1/4	1/2	4515x4x8
3/8	1/4	4515x6x4
3/8	3/8	4515x6
3/8	1/2	4515x6x8
3/8	5/8	4515x6x10
3/8	3/4	4515x6x12
1/2	3/8	4515x8x6
1/2	1/2	4515x8
1/2	5/8	4515x8x10
1/2	3/4	4515x8x12
5/8	5/8	4515x10
3/4	1/2	4515x12x8
3/4	5/8	4515x12x10
3/4	3/4	4515x12
3/4	1"	4515x12x16
1"	1"	4515x16

MALE JIC 37° SAE TO FEMALE O-RING FACE SEAL



Female Tube O.D.	Male 37° Tube Size	No.
1/4	1/4	4213x4
3/8	3/8	4213x6
1/2	1/2	4213x8
5/8	5/8	4213x10
3/4	3/4	4213x12
1"	1"	4213x16

STRAIGHT THREAD O-RING BRANCH TEE (Ref. SAE No. 520429)



Tube O.D.	Port Size	No.
1/4	1/4	4715x4
1/4	3/8	4715x4x6
3/8	3/8	4715x6
1/2	1/2	4715x8
1/2	3/4	4715x8x12
5/8	5/8	4715x10
3/4	3/4	4715x12
1"	1"	4715x16

BULKHEAD UNION (Ref. SAE No. 520601)



Tube O.D.	No.
3/8	4325x6
1/2	4325x8

O-RING 90° ELBOW SWIVEL ADAPTER (Ref. SAE No. 520221)



Tube O.D.	No.
1/4	4506x4
3/8	4506x6
1/2	4506x8
5/8	4506x10
3/4	4506x12
1"	4506x16

STRAIGHT THREAD O-RING 90° SWIVEL ELBOW (Ref. SAE No. 520281)



Tube O.D.	Port Size	No.
1/4	1/4	4535x4
3/8	3/8	4535x6
1/2	1/2	4535x8
1"	1"	4535x16

FITTINGS

STEEL



O-Ring Face Seal

Typical Application: High pressure hydraulic, pneumatic and chemical processing.

Pressure: Up to 6000 P.S.I. (1-1/4 and 1-1/2 maximum 4000 P.S.I.).

Sealing Method: O-ring.

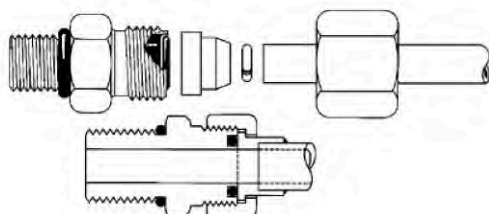
Vibration Rating: Excellent resistance.

Material: Carbon Steel - 12L14.

Used With: Steel tubing (tubing for brazing must be non-coated).

Advantages: Tubing is brazed for permanent leakproof connection.

Conformance: Meets SAE J1453.



BULKHEAD NUT
(Ref. SAE No. 520118)



Tube O.D.	No.
3/8	4924x6
1/2	4924x8

CAP
(Ref. SAE No. 520112)



Tube O.D.	No.
1/4	4129x4
3/8	4129x6
1/2	4129x8
5/8	4129x10
3/4	4129x12
1"	4129x16
1-1/4	4129x20
1-1/2	4129x24

PLUG
(Ref. SAE No. 520109)



Tube O.D.	No.
1/4	4229x4
3/8	4229x6
1/2	4229x8
5/8	4229x10
3/4	4229x12
1"	4229x16
1-1/4	4229x20
1-1/2	4229x24

Tube O.D.	1/4	3/8	1/2	5/8	3/4	1	1-1/4	1-1/2
For-Seal® Thread	9/16-18	11/16-16	13/16-16	1-14	1 3/16-12	1 7/16-12	1 11/16-12	2-12
Max. P.S.I.	6000	6000	6000	6000	6000	6000	4000	4000
Adjustable Fittings P.S.I.	6000	6000	6000	6000	6000	5000	4000	3000

UNION
(Ref. SAE No. 520101)



Tube O.D.	Tube O.D.	No.
1/4	1/4	4305x4
3/8	1/4	4305x6x4
3/8	3/8	4305x6
1/2	3/8	4305x8x6
1/2	1/2	4305x8
5/8	1/2	4305x10x8
5/8	5/8	4305x10
3/4	5/8	4305x12x10
3/4	3/4	4305x12
1"	3/4	4305x16x12
1"	1"	4305x16

STRAIGHT THREAD O-RING CONNECTOR
(Ref. SAE No. 520120)



Tube O.D.	Port Size	No.
1/4	1/4	4315x4
1/4	3/8	4315x4x6
3/8	1/4	4315x6x4
3/8	3/8	4315x6
3/8	1/2	4315x6x8
1/2	3/8	4315x8x6
1/2	1/2	4315x8
1/2	5/8	4315x8x10
1/2	3/4	4315x8x12
5/8	5/8	4315x10
3/4	3/4	4315x12
3/4	1"	4315x12x16
1"	1"	4315x16
1"	1-1/4	4315x16x20

MALE CONNECTOR



Tube O.D.	Male Pipe Thread	No.
1/4	1/8	4205x4
1/4	1/4	4205x4x4
1/4	3/8	4205x4x6
3/8	1/4	4205x6
3/8	3/8	4205x6x6
3/8	1/2	4205x6x8
1/2	3/8	4205x8
1/2	1/2	4205x8x8
1/2	3/4	4205x8x12
5/8	1/2	4205x10
5/8	3/4	4205x10x12
3/4	1/2	4205x12x8
3/4	3/4	4205x12
3/4	1"	4205x12x16
1"	3/4	4205x16x12
1"	1"	4205x16

FITTINGS

STEEL



BSP

MALE BSPP HEX NIPPLE



Male BSPP Thread	No.
1/4-19	MB3069x4
3/8-19	MB3069x6
1/2-14	MB3069x8
3/4-14	MB3069x12
1-11	MB3069x16

MALE NPT TO FEMALE BSP* SOLID



Male NPT	BSP Thread	No.
1/4	1/4-19	MB3079x4x4
3/8	3/8-19	MB3079x6x6
1/2	1/2-14	MB3079x8x8
3/4	3/4-14	MB30791212
1"	1-11	MB30791616

BSP* COUPLER



BSP Thread	No.
1/4-19	MB3309x4
3/8-19	MB3309x6
1/2-14	MB3309x8
3/4-14	MB3309x12
1-11	MB3309x16

FEMALE 37° JIC SWIVEL TO MALE BSPT



Tube O.D.	BSPT Thread	No.
1/4	1/4-19	M9800x4x4
3/8	1/4-19	M9800x6x4
1/2	3/8-19	M9800x8x6
1/2	1/2-14	M9800x8x8
3/4	3/4-14	M9800x1212
1"	1-11	M9800x1616

MALE BSPT TO MALE SAE 37° JIC



JIC Tube O.D.	BSPT Pipe Size	No.
1/4	1/4	MC5205x4x4
5/16	1/4	MC5205x5x4
3/8	1/4	MC5205x6x4
3/8	3/8	MC5205x6x6
1/2	3/8	MC5205x8x6
1/2	1/2	MC5205x8x8
5/8	1/2	MC5205x108
5/8	3/4	MC52051012
3/4	3/4	MC52051212
1"	1"	MC52051616

*BSP seals with both BSPP and BSPT

BRITISH RETAINING RING



Tube O.D.	No.	Ring I.D.	Ring O.D.
1/8	MB7630x2	.45	.60
1/4	MB7630x4	.63	.81
3/8	MB7630x6	.77	.93
1/2	MB7630x8	.91	1.12
3/4	MB7630x12	1.12	1.37
1"	MB7630x16	1.44	1.74

MALE BSPP TO FEMALE BSPP SWIVEL



Male BSPP Thread	Female BSPP Thread	No.
1/4-19	1/4-19	MB9205x4x4
3/8-19	3/8-19	MB9205x6x6
1/2-14	1/2-14	MB9205x8x8
3/4-14	3/4-14	MB92051212
1-11	1-11	MB92051616

MALE 37° JIC TO FEMALE BSP* SOLID



Tube O.D.	BSP Thread	No.
1/4	1/4-19	MB5255x4x4
3/8	3/8-19	MB5255x6x6
1/2	1/2-14	MB5255x8x8
3/4	3/4-14	MB52551212
1"	1-11	MB52551616

MALE BSPT TO MALE SAE 37° JIC 90° ELBOW



JIC Tube O.D.	BSPT Thread	No.
1/4	1/4-19	MC5405x4x4
3/8	1/4-19	MC5405x6x4
3/8	3/8-19	MC5405x6x6
1/2	3/8-19	MC5405x8x6
1/2	1/2-14	MC5405x8x8
5/8	3/4-14	MC54051012
3/4	3/4-14	MC54051212
1"	1-11	MC54051616

MALE BSPT TO FEMALE PIPE THREAD SOLID



Male BSPT Thread	Female Pipe Thread	No.
1/4	1/4	MB3210x4x4
3/8	3/8	MB3210x6x6
1/2	1/2	MB3210x8x8
3/4	3/4	MB32101212
1"	1	MB32101616

MALE BSPT TO MALE NPT



Male Pipe Thread	BSPT Thread	No.
1/4	1/4-19	MB3070x4x4
3/8	3/8-19	MB3070x6x6
1/2	1/2-14	MB3070x8x8
3/4	3/4-14	MB30701212
1"	1-11	MB30701616

BRITISH O-RING



Material: Buna-N 90 Durometer
Temp. Range: -40°F to +250°F

Tube O.D.	No.	I.D.
1/8	MB7629x2	.239
1/4	MB7629x4	.424
3/8	MB7629x6	.549
1/2	MB7629x8	.695
3/4	MB7629x12	.924
1"	MB7629x16	1.171

BONDED SEALING WASHER BSPP



Tube O.D.	No.
1/8	MB7631x2
1/4	MB7631x4
3/8	MB7631x6
1/2	MB7631x8
3/4	MB7631x12
1"	MB7631x16

BSP

COUNTERSUNK PLUG BSPT THREAD



BSPT Pipe Size	Thread	No.
1/8	1/8-28	MB3169x2
1/4	1/4-19	MB3169x4
3/8	3/8-19	MB3169x6
1/2	1/2-14	MB3169x8
3/4	3/4-14	MB3169x12
1"	1-11	MB3169x16

HEX SEALED PLUG BSPP THREAD



BSPP Pipe Size	Thread	No.
1/8	1/8-28	MB7238x2
1/4	1/4-19	MB7238x4
3/8	3/8-19	MB7238x6
1/2	1/2-14	MB7238x8
3/4	3/4-14	MB7238x12
1"	1-11	MB7238x16

HEX SEALED PLUG METRIC THREAD



Metric Thread	No.
M10 x 1.0	M7238x10
M12 x 1.5	M7238x12
M14 x 1.5	M7238x14
M16 x 1.5	M7238x16
M18 x 1.5	M7238x18
M20 x 1.5	M7238x20
M22 x 1.5	M7238x22
M24 x 1.5	M7238x24
M26 x 1.5	M7238x26

BSPP SWIVEL CAP



BSPP Pipe Size	Thread	No.
1/8	1/8-28	MB5029x2
1/4	1/4-19	MB5029x4
3/8	3/8-19	MB5029x6
1/2	1/2-14	MB5029x8
3/4	3/4-14	MB5029x12
1"	1-11	MB5029x16

HEX HEAD PIPE PLUG



BSPP Pipe Size	Thread	No.
1/8	1/8-28	MB7237x2
1/4	1/4-19	MB7237x4
3/8	3/8-19	MB7237x6
1/2	1/2-14	MB7237x8
3/4	3/4-14	MB7237x12
1"	1-11	MB7237x16

JIS CAP 30° SEAT BSPP THREAD



BSPP Pipe Size	Thread	No.
1/4	1/4-19	MB5129x4
3/8	3/8-19	MB5129x6
1/2	1/2-14	MB5129x8
3/4	3/4-14	MB5129x12

JIS PLUG 30° SEAT BSPP THREAD



BSPP Pipe Size	Thread	No.
1/4	1/4-19	MB5229x4
3/8	3/8-19	MB5229x6
1/2	1/2-14	MB5229x8
3/4	3/4-14	MB5229x12

KOMATSU CAP 30° SEAT METRIC THREAD



Female Thread	No.
M14 x 1.5	MC5129x14
M18 x 1.5	MC5129x18
M22 x 1.5	MC5129x22
M24 x 1.5	MC5129x24

KOMATSU PLUG 30° SEAT METRIC THREAD



Male Thread	No.
M14 x 1.5	MC5229x14
M18 x 1.5	MC5229x18
M22 x 1.5	MC5229x22
M24 x 1.5	MC5229x24

FITTINGS

STEEL



BSP

Pipe Size	1/8	1/4	3/8	1/2	5/8	3/4	1"	1-1/4
Thread Size	1/8-28	1/4-19	3/8-19	1/2-14	5/8-14	3/4-14	1-11	1-1/4-11

MALE BSPP TO MALE SAE 37° JIC



JIC Tube O.D.	BSPP Pipe Size	No.
1/4	1/8	MB5315x4x2
1/4	1/4	MB5315x4x4
1/4	3/8	MB5315x4x6
1/4	1/2	MB5315x4x8
5/16	1/4	MB5315x5x4
3/8	1/4	MB5315x6x4
3/8	3/8	MB5315x6x6
3/8	1/2	MB5315x6x8
1/2	1/4	MB5315x8x4
1/2	3/8	MB5315x8x6
1/2	1/2	MB5315x8x8
1/2	3/4	MB5315x812
5/8	3/8	MB5315x106
5/8	1/2	MB5315x108
5/8	3/4	MB53151012
3/4	1/2	MB5315x128
3/4	3/4	MB53151212
3/4	1"	MB53151216
1"	3/4	MB53151612
1"	1"	MB53151616

FEMALE 37° JIC SWIVEL TO MALE BSPP



Note: 60° seat angle on male end.

Tube O.D.	BSPP Thread	No.
1/4	1/4-19	M9600x4x4
3/8	3/8-19	M9600x6x6
1/2	1/2-14	M9600x8x8
3/4	3/4-14	M9600x1212
1"	1-11	M9600x1616

MALE 37° JIC TO FEMALE BSPP SWIVEL 90° ELBOW



JIC Tube O.D.	BSPP Thread	No.
1/4	1/4-19	MB5213x4x4
3/8	3/8-19	MB5213x6x6
1/2	1/2-14	MB5213x8x8
3/4	3/4-14	MB52131212

MALE BSPP TO MALE SAE 37° JIC 90° ELBOW



JIC Tube O.D.	BSPP Pipe Size	No.
1/4	1/4-19	MB5515x4x4
5/16	1/4-19	MB5515x5x4
3/8	1/4-19	MB5515x6x4
3/8	3/8-19	MB5515x6x6
1/2	3/8-19	MB5515x8x6
1/2	1/2-14	MB5515x8x8
5/8	3/4-14	MB55151012
3/4	3/4-14	MB55151212
1"	1-11	MB55151616

MALE SAE O-RING BOSS TO MALE BSPP



Tube O.D.	BSPP Thread	No.
1/4	1/4-19	MB3247x4x4
3/8	3/8-19	MB3247x6x6
1/2	1/2-14	MB3247x8x8
3/4	3/4-14	MB32471212
1"	1-11	MB32471616

MALE BSPP TO MALE NPT



Male Pipe Thread	BSPP Pipe Size	No.
1/4	1/4-19	MB3068x4x4
1/4	3/8-19	MB3068x6x4
3/8	3/8-19	MB3068x6x6
3/8	1/2-14	MB3068x8x6
1/2	1/2-14	MB3068x8x8
3/4	3/4-14	MB30681212
1"	1-11	MB30681616

MALE BSPP TO FEMALE SAE O-RING BOSS



Male BSPP Thread	Female Port Size	No.
1/4-19	1/4	MB3239x4x4
3/8-19	3/8	MB3239x6x6
1/2-14	1/2	MB3239x8x8
3/4-14	3/4	MB32391212
1-11	1"	MB32391616

MALE BSPP TO FEMALE PIPE THREAD SOLID



Male BSPP Thread	Female Pipe Thread	No.
1/8-28	1/8	MB3209x2x2
1/4-19	1/4	MB3209x4x4
3/8-19	1/4	MB3209x6x4
3/8-19	3/8	MB3209x6x6
1/2-14	3/8	MB3209x8x6
1/2-14	1/2	MB3209x8x8
3/4-14	3/4	MB32091212
1-11	1"	MB32091616

STRAIGHT THREAD SWIVEL FEMALE CONNECTOR SAE O-RING BOSS



Tube O.D.	Port Size	No.
1/4	1/4	4255x4
3/8	1/4	4255x6x4
1/2	1/4	4255x8x4

O-RING FACE SEAL BSPP 90° MALE ELBOW



Tube O.D.	Port Size	No.
1/4	1/8	MB4405x4x2
1/4	1/4	MB4405x4
3/8	1/4	MB4405x6x4
3/8	3/8	MB4405x6
1/2	1/4	MB4405x8x4
1/2	3/8	MB4405x8x6
1/2	1/2	MB4405x8
5/8	1/2	MB4405x108
3/4	1/2	MB4405x128
3/4	3/4	MB4405x12
3/4	1"	MB44051216
1"	1"	MB4405x16

90° METRIC O-RING FACE SEAL ISO6149



Tube O.D.	Metric Thread Size	No.
1/4	M12x1.5	M4515x4x12
3/8	M12x1.5	M4515x6x12
3/8	M14x1.5	M4515x6x14
3/8	M16x1.5	M4515x6x16
1/2	M14x1.5	M4515x8x14
1/2	M18x1.5	M4515x8x18
1/2	M22x1.5	M4515x8x22
5/8	M18x1.5	M4515x1018
5/8	M22x1.5	M4515x1022
3/4	M22x1.5	M4515x1222
3/4	M27x2.0	M4515x1227
1"	M33x2.0	M4515x1633

O-RING FACE SEAL METRIC O-RING



O-Ring Face Seal

Tube O.D.	Metric Thread Size	No.
1/4	M10x1.0	M4315x4x10
3/8	M12x1.5	M4315x6x12
3/8	M14x1.5	M4315x6x14
3/8	M16x1.5	M4315x6x16
1/2	M16x1.5	M4315x8x16
1/2	M18x1.5	M4315x8x18
5/8	M18x1.5	M4315x1018
5/8	M22x1.5	M4315x1022
3/4	M22x1.5	M4315x1222
3/4	M26x1.5	M4315x1226
3/4	M27x2.0	M4315x1227
1"	M33x2.0	M4315x1633

O-RING FACE SEAL BSPP CONNECTOR



Tube O.D.	BSPP Pipe Size	No.
1/4	1/8	MB4315x4x2
1/4	1/4	MB4315x4x4
3/8	1/4	MB4315x6x4
3/8	3/8	MB4315x6x6
3/8	1/2	MB4315x6x8
1/2	3/8	MB4315x8x6
1/2	1/2	MB4315x8x8
5/8	1/2	MB4315x108
3/4	1/2	MB4315x128
3/4	3/4	MB43151212
3/4	1"	MB43151216
1"	3/4	MB43151612
1"	1"	MB43151616

O-RING, O-RING FACE SEAL Material: Buna-N.



Tube O.D.	No.
1/4	- 4629x4
3/8	- 4629x6
1/2	- 4629x8
5/8	- 4629x10
3/4	- 4629x12
1"	- 4629x16
1-1/4	- 4629x20
1-1/2	- 4629x24



FITTINGS

STEEL

SAE 37° (JIC) O-Ring Seal Flare Fittings

- O-RING SEAL SAE 37° (JIC) FLARE - A premium SAE 37° (JIC) Flare plug retrofitted with a high pressure o-ring on the sealing face; dramatically increases sealing performance and will not compromise the strength of the plug.
- ELIMINATES HYDRAULIC LEAKS - Provides a leakproof, connection at full standard operating pressures.
- WITHSTANDS SHOCK & VIBRATION - Neutralizes torque forces and allows micro movement to occur without unwinding the connection.
- FORGED ENDS - No potential leak paths and longer fatigue life with compact design, resulting in longer service life.
- COMPATIBLE WITH ALL STANDARD SAE 37° (JIC) FLARE FITTINGS



PLUG
(Ref. SAE No. 070109)
MS51518



Tube O.D.	No.
1/4	FM5229x4
5/16	FM5229x5
3/8	FM5229x6
1/2	FM5229x8
5/8	FM5229x10
3/4	FM5229x12
1"	FM5229x16

Tube O.D.	1/8	3/16	1/4	5/16	3/8
Thread	5/16-24	3/8-24	7/16-20	1/2-20	9/16-18
Tube O.D.	1/2	5/8	3/4	7/8	1"
Thread	3/4-16	7/8-14	1 1/16-12	1 3/16-12	1 5/16-12

HOSE CLAMPS

WORM GEAR



Heavy-Duty Standard, Stainless, and Silicone



Standard



Stainless



Silicone

Ind. No.	Standard QUNo.	Stainless ^M C.No.	Silicone ^I ITNo.	Clamp Range		Fits Hose I.D. (Standard 3/16" wall)
				Min.	Max.	
6	50-2500	50-2400	50-2607	7/16	13/16	3/8, 1/2
8	50-2508	50-2408	50-2608	7/16	15/16	3/8, 1/2
10	50-2510	50-2410	50-2610	9/16	1-1/16	3/8, 1/2, 5/8
12	50-2512	50-2412	50-2612	11/16	1-1/4	5/8, 3/4
16	50-2516	50-2416	50-2616	13/16	1-1/2	3/4, 7/8, 1"
20	50-2520	50-2420	50-2620	13/16	1-3/4	1", 1-1/4
24	50-2524	50-2424	50-2624	1-1/16	2"	1-1/4, 1-1/2
28	50-2528	50-2428	50-2628	1-5/16	2-1/4	1-1/4, 1-1/2, 1-3/4
32	50-2532	50-2432	50-2632	1-9/16	2-1/2	1-1/2, 1-3/4, 2"
36	50-2536	50-2436	50-2636	1-13/16	2-3/4	1-3/4, 2", 2-1/4"
40	50-2540	50-2440	50-2640	2-1/16	3"	2", 2-1/4, 2-1/2
44	50-2544	50-2444	50-2644	2-5/16	3-1/4	2-1/4, 2-1/2, 2-3/4
48	50-2548	50-2448	50-2648	2-9/16	3-1/2	2-1/2, 2-3/4, 3"
52	50-2552	50-2452	50-2652	2-13/16	3-3/4	3", 3-1/4
56	50-2556	50-2456	50-2656	3-1/16	4"	3-1/4, 3-1/2
60	50-2560	50-2460	50-2662	3-5/16	4-1/4	3-1/2, 3-3/4
64	50-2564	50-2464	50-2664	3-9/16	4-1/2	3-3/4, 4"
72	50-2572	50-2472	50-2672	4-1/8	5"	AS REQUIRED WITHIN RANGE
80	50-2580	50-2480		4-5/8	5-1/2	
88	50-2588	50-2488		5-1/8	6"	
96	50-2596	50-2496		5-5/8	6-1/2	
104	50-2599	50-2499		6-1/8	7"	

All Packed 10 Per Box

Mini



Standard



Stainless

Ind. No.	Standard No.	Stainless No.	Clamp Range	
			Min.	Max.
4	50-2504	50-2404	1/4	5/8
6	50-2506	50-2406	5/16	7/8
8	50-2507		7/16	15/16
10	50-2509		1/2	1-1/16

VALVES

BALL VALVES



Full Port Forged Brass

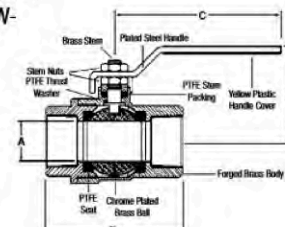
Female NPT Ends

Size	No. Standard Valve	No. w/ Locking Valve	"A"	"B"	"C"	"D"
1/4	90-311	90-211	0.39	1.59	3.30	1.53
3/8	90-312	90-212	0.39	1.67	3.30	1.53
1/2	90-313	90-213	0.59	2.07	3.30	1.69
3/4	90-314	90-214	0.79	2.33	4.33	2.05
1"	90-315	90-215	0.98	2.82	4.33	2.24
1-1/4	90-316	90-216	1.26	3.25	5.51	2.83
1-1/2	90-317	90-217	1.57	3.57	5.51	3.11
2"	90-318	90-218	1.97	4.13	6.70	3.46
3"	90-399	-	2.95	5.83	9.62	5.00
4"	90-320	-	3.90	7.31	10.50	5.62

NOTE: Replacement locking handles on next page.



- Full port orifice on all sizes.
- Increased fluid flow capacity.
- Forged brass body and tailpiece.
- PTFE seats, stem packing and thrust washer.
- Hard chrome-plated brass ball.
- Blow-out proof stem design.
- 600 P.S.I. for water, oil or gas. 150 P.S.I. for steam.
- Temperature 0°F to +250°F.
- Meets Federal Spec. WW-V-35B, Type II, Style 3.
- **MADE IN THE U.S.A.**



Full Port Forged Brass Ball Valves

Male to Female NPT



- **FULL PORT ORIFICE ON BOTH SIDES** - 2 piece full port construction allows maximum flow capacity.
- **HIGH PERFORMANCE CONSTRUCTION** - Forged brass body, hard chrome-plated brass ball, PTFE seat and stem packing, blow-out proof stem design, and plated steel handle with a synthetic coating ensure long service life.
- **HIGH PRESSURE** - 600 P.S.I. for water, oil or gas. 150 P.S.I. for steam.
- **MADE IN THE U.S.A.**

Size	No. Male to Female NPT Valve	"L"	"D"	"H"	"W"
1/2	90-113	2.16	0.59	1.77	3.65
3/4	90-114	2.52	0.75	2.05	4.65
1"	90-115	3.05	1.00	2.14	4.65

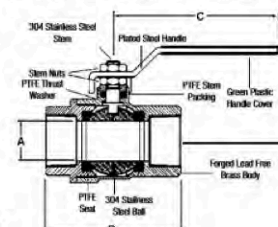
Lead Free Brass

Female NPT Ends

Size	No.	"A"	"B"	"C"	"D"
1/4	90-1311	0.39	1.67	3.35	1.71
3/8	90-1312	0.39	1.72	3.35	1.71
1/2	90-1313	0.59	2.13	3.35	1.77
3/4	90-1314	0.79	2.36	4.35	2.05
1"	90-1315	0.98	2.80	4.35	2.20
1-1/4	90-1316	1.26	3.29	5.65	2.50
1-1/2	90-1317	1.57	3.70	5.65	2.70
2"	90-1318	1.97	4.13	5.65	3.23



- **FORGED LEAD FREE BRASS** - Lead free brass construction conforms to regulations for potable water use.
- **FULL PORT** - 2 piece full port construction allows maximum flow capacity.
- **HIGH PERFORMANCE CONSTRUCTION** - Forged lead free brass body, 304 stainless steel stem and ball, PTFE seat and stem packing, viton o-ring and zinc plated steel handle with synthetic coating ensure a long service life.
- **HIGH PRESSURE** - 600 P.S.I. for water, oil or gas. 150 P.S.I. for steam.
- **CERTIFIED** - Valve CSA certified to be lead free. Conforms to CGA3.16 and ASME B16.33 for gas service.
- **MADE IN THE U.S.A.**



- PTFE seats and seals provide resistance to chemical corrosion.
- 1/4-1" Forged; chrome plated brass ball.
- 1-1/4-2" Cast; bronze.
- 600 P.S.I. for water, oil or gas.
- 150 P.S.I. for steam.
- Temperature 0°F to +350°F.

SPRAY PAINTS & COATINGS

MRO High Solids Spray Paints

Better coverage, fast drying time, excellent rust preventative. Our premium MRO spray paints have the highest amount of solids in them. 4 in 1 (1 can = 4 regular cans).

BEST SELLER!

No	Name	Color	Net Wt	Qty/Case	Sold By
MRO88BL	MRO High Solids Spray Paints	Safety Blue	16 oz.	6	Each
MRO88OR	MRO High Solids Spray Paints	Safety Orange	16 oz.	6	Each
MRO88RE	MRO High Solids Spray Paints	Safety Red	16 oz.	6	Each
MRO88GRE	MRO High Solids Spray Paints	Safety Green	16 oz.	6	Each
MRO88YE	MRO High Solids Spray Paints	Safety Yellow	16 oz.	6	Each
MRO88CG	MRO High Solids Spray Paints	Cascade Green	16 oz.	6	Each
MRO88DG	MRO High Solids Spray Paints	Dark Green	16 oz.	6	Each
MRO88DMG	MRO High Solids Spray Paints	Dark Gray	16 oz.	6	Each
MRO88LMG	MRO High Solids Spray Paints	Light Gray	16 oz.	6	Each
MRO88FW	MRO High Solids Spray Paints	Flat White	16 oz.	6	Each
MRO88LIFT	MRO High Solids Spray Paints	Lift Blue	17 oz.	6	Each
MRO88ROP	MRO High Solids Spray Paints	Red Oxide Primer	17 oz.	6	Each
MRO88LGP	MRO High Solids Spray Paints	Light Gray Primer	17 oz.	6	Each
MRO88FB	MRO High Solids Spray Paints	Flat Black	16 oz.	6	Each
MRO88WH	MRO High Solids Spray Paints	Gloss White	16 oz.	6	Each
MRO88GB	MRO High Solids Spray Paints	Gloss Black	16 oz.	6	Each





Fresh N Quick Spray Paints **BEST SELLER!**

A high-quality spray paint economically priced and available in a wide array of colors. Covers well, dries fast, and holds up well outdoors. Bare or rusted surfaces should be cleaned and primed before spraying final paint. Use our #88GP Gray Primer for a solid foundation before spraying final color.

No	Name	Color	Net Wt	Qty/ Case	Sold By
88AL	Multi-Purpose Spray Paints	Aluminum	10 oz.	6	Each
88BL	Multi-Purpose Spray Paints	Gloss Blue	10 oz.	6	Each
88CL	Multi-Purpose Spray Paints	Clear	10 oz.	6	Each
88FB	Multi-Purpose Spray Paints	Flat Black	10 oz.	6	Each
88GB	Multi-Purpose Spray Paints	Gloss Black	10 oz.	6	Each
88GP	Multi-Purpose Spray Paints	Gray Primer	10 oz.	6	Each
88GR	Multi-Purpose Spray Paints	Gloss Hunter Green	10 oz.	6	Each
88NG	Multi-Purpose Spray Paints	Gloss Navy Gray	10 oz.	6	Each
88RB	Multi-Purpose Spray Paints	Semi-Gloss Black	10 oz.	6	Each
88RE	Multi-Purpose Spray Paints	Gloss Cherry Red	10 oz.	6	Each
88WH	Multi-Purpose Spray Paints	Gloss White	10 oz.	6	Each

Spruce Spray Paints

A top quality spray paint that is economically priced. Spruce® provides a tough finish that is durable and inhibits rust. Hides well, dries fast, and resists chipping and peeling.

No	Name	Color	Net Wt	Qty/ Case	Sold By
88RP	Spruce Spray Paints	Red Iron Oxide Primer	12 oz.	12	Each
88SB	Spruce Spray Paints	Satin Black	12 oz.	12	Each
88YE	Spruce Spray Paints	Gloss Light Yellow	12 oz.	12	Each

Inverted Tip Spray Paints

Quik-Mark Water-Based Inverted Marking Paints have a high solids formulation that gives them the boldest, brightest and most visible markings in the industry. These fast-drying products penetrate and adhere to hot surfaces, and deliver a line you can count on for all your locating, marking and surveying needs. Krylon Quik-Mark spray paint dries to the touch in under 10 minutes.

No	Name	Color	Net Qty/Sold Wt Case By		
91FLB	Inverted Tip Spray Paints	Fluorescent Blue	17 oz.	12	Each
91FLO	Inverted Tip Spray Paints	Fluorescent Orange	17 oz.	12	Each
91FLP	Inverted Tip Spray Paints Best Seller!	Fluorescent Pink	17 oz.	12	Each
91GR	Inverted Tip Spray Paints	Green APWA	17 oz.	12	Each
91RE	Inverted Tip Spray Paints	Red APWA	17 oz.	12	Each
91WH	Inverted Tip Spray Paints	White APWA	17 oz.	12	Each





Locations

**3465 LEE BLVD STE 237
EL PASO TX 79936**

**4600 NE LOOP 338 STE I
ODESSA TX 79762**

**We offer a diverse range of personalized products designed to meet
your specific needs. "We build it your way!"**

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